September 18, 2017

Dawn Denham
Weston Solutions, Inc.
5599 San Felipe, Suite 700
Houston, Texas 77056
TEL: (713) 985-6610
FAX (713) 985-6703

Order No.: 1709100

RE: Ballard Site-Harvey Sampling

Dear Dawn Denham:

DHL Analytical, Inc. received 4 sample(s) on 9/13/2017 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-17-19

# Table of Contents

DHL ANALYTICAL
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№ 77921

# CHAIN-OF-CUSTODY

CLIENT: Weston Solutions
ADDRESS: 5599 San Felipe Ste 700, Houston TX 77056
PHONE: 713-985-6610 FAX/E-MAIL: dawn.denham@WestonSolutions.com
DATA REPORTED TO: Dawn Denham
ADDITIONAL REPORT COPIES TO:

DATE: 9/12/17 PAGE 1 OF 1
PO #: DHL WORK ORDER #: 1709100
PROJECT LOCATION OR NAME: BALLARD PITS
CLENT PROJECT #: COLLECTOR: CS/MB

Authorize 5% surcharge for TRRP Report? ☒ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

| Field Sample I.D. | DHL Lab # | Date | Time | Matrix | Container Type | # of Containers | PRESERVATION HCl | $HNO_3$ | $H_2SO_4$ ☐ NaOH ☐ | ICE | UNPRESERVED | ANALYSES | FIELD NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BALLARD W-1 | 1 | 9/12/17 | 1140 | W | VOA/1LP | 4 | X | X | | X | X | BTEX ☐ MTBE ☐ [METHOD 8021] TPH 1005 ☐ TPH 1006 X HOLD 1006 ☐ GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐ VOC 8260 X VOC 624 ☐ VOC 8260/5035 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ 8270 PCB ☐ 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ 8321 HERB ☐ T PHOS, AMMONIA ☐ METALS 6020 X METALS 200.8 ☐ DISS. METALS ☐ RCRA ☐ TX11 ☐ PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ CHLORIDE ☐ ANIONS ☐ TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ RCI ☐ FLASHPOINT ☐ DGAS ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | Benzene only for VOC 8260 -HOLD- only TPH & hold on TX 1006 |
| BALLARD FB-1 | 2 | ↓ | 1150 | W | VOA | 3 | X | | | X | X | | |
| TRIP BLANK | 3 | ↓ | — | W | VOA | 3 | X | | | X | X | | |
| BALLARD SO-1 | 4 | 9/12/17 | 1200 | SO | VOA+Bag | 3 | 4 oz | | | X | X | | |

RELINQUISHED BY: (Signature) M Behnke DATE/TIME 9/12/17 17:00 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

3

**TURN AROUND TIME**
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐
OTHER ☒ 72 hr

**LABORATORY USE ONLY:**
RECEIVING TEMP: 0.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☐ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☒ HAND DELIVERED

**Table 1: State Superfund Sites Potentially Impacted by Hurricane Harvey**

| State Superfund Site | Soil COCs | Soil Analytical Methods | Water COCs | Water Analytical Methods |
|---|---|---|---|---|
| ~~Baldwin Waste Oil~~ | ~~none~~ | ~~N/A~~ | ~~Benzene~~ | ~~SW8260C~~ |
| Ballard Pits | TPH | TCEQ 1005 | Arsenic | SW6020A |
| | | | Benzene | SW8260C |
| ~~Camtraco Enterprises Inc.~~ | ~~none~~ | ~~N/A~~ | Arsenic | SW6020A |
| | | | 1,1-Dichloroethene | SW8260C |
| | | | cis-1,2-Dichloroethene | |
| | | | Toluene | |
| | | | Trichloroethene | |
| | | | Vinyl chloride | |
| ~~Federated Metals~~ | ~~None~~ | ~~N/A~~ | Arsenic | SW6020A |
| | | | Lead | |
| | | | benzene | SW8260C |
| | | | tetrachloroethene | |
| | | | trichloroethene | |
| | | | cis-1,2-dichloroethene | |
| | | | trans-1,2-dichloroethene | |
| | | | 1,1-dichloroethene | |
| | | | vinyl chloride | |

DHL Analytical, Inc.

# Sample Receipt Checklist

Client Name Weston Solutions, Inc.

Date Received: 9/13/2017

Work Order Number 1709100

Received by EL

Checklist completed by: _____ 9/13/2017
Signature | Date

Reviewed by: IM 9/13/2017
Initials | Date

Carrier name Hand Delivered

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on shippping container/cooler? | Yes ☐ | No ☐ | Not Present ☑ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature in compliance? | Yes ☑ | No ☐ | 0.7 °C |
| Water - VOA vials have zero headspace? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH<2 acceptable upon receipt? | Yes ☑ | No ☐ | NA ☐ LOT # 8086 |
| | Adjusted? NO | | Checked by CC |
| Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt? | Yes ☐ | No ☐ | NA ☑ LOT # |
| | Adjusted? _____ | | Checked by _____ |

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

## Laboratory Name: DHL Analytical, Inc.

## Laboratory Review Checklist: Reportable Data

| | |
|---|---|
| **Project Name:** Ballard Site - Harvey Sampling | **LRC Date:** 9/18/17 |
| **Reviewer Name:** Carlos Castro | **Laboratory Work Order:** 1709100 |
| **Prep Batch Number(s):** See Prep Dates Report | **Run Batch:** See Analytical Dates Report |

| #[1] | A[2] | Description | Yes | No | NA[3] | NR[4] | ER#[5] |
|---|---|---|---|---|---|---|---|
| | | **Chain-of-Custody (C-O-C)** | | | | | |
| **R1** | OI | **1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt? | **X** | | | | **R1-01** |
| | | **2)** Were all departures from standard conditions described in an exception report? | | | **X** | | |
| **R2** | OI | **Sample and Quality Control (QC) Identification** | | | | | |
| | | **1)** Are all field sample ID numbers cross-referenced to the laboratory ID numbers? | **X** | | | | |
| | | **2)** Are all laboratory ID numbers cross-referenced to the corresponding QC data? | **X** | | | | |
| **R3** | OI | **Test Reports** | | | | | |
| | | **1)** Were all samples prepared and analyzed within holding times? | **X** | | | | |
| | | **2)** Other than those results < MQL, were all other raw values bracketed by calibration standards? | **X** | | | | |
| | | **3)** Were calculations checked by a peer or supervisor? | **X** | | | | |
| | | **4)** Were all analyte identifications checked by a peer or supervisor? | **X** | | | | |
| | | **5)** Were sample detection limits reported for all analytes not detected? | **X** | | | | |
| | | **6)** Were all results for soil and sediment samples reported on a dry weight basis? | **X** | | | | |
| | | **7)** Were % moisture (or solids) reported for all soil and sediment samples? | **X** | | | | |
| | | **8)** Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035? | **X** | | | | |
| | | **9)** If required for the project, TICs reported? | | | **X** | | |
| **R4** | O | **Surrogate Recovery Data** | | | | | |
| | | **1)** Were surrogates added prior to extraction? | **X** | | | | |
| | | **2)** Were surrogate percent recoveries in all samples within the laboratory QC limits? | **X** | | | | |
| **R5** | OI | **Test Reports/Summary Forms for Blank Samples** | | | | | |
| | | **1)** Were appropriate type(s) of blanks analyzed? | **X** | | | | |
| | | **2)** Were blanks analyzed at the appropriate frequency? | **X** | | | | |
| | | **3)** Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures? | **X** | | | | |
| | | **4)** Were blank concentrations < MDL? | **X** | | | | |
| | | **5)** For analyte(s) detected in a blank sample, was the concentration, unadjusted for sample specific factors, in all associated field samples, **greater** than 10 times the concentration in the blank sample? | | | **X** | | |
| **R6** | OI | **Laboratory Control Samples (LCS):** | | | | | |
| | | **1)** Were all COCs included in the LCS? | **X** | | | | |
| | | **2)** Was each LCS taken through the entire analytical procedure, including prep and cleanup steps? | **X** | | | | |
| | | **3)** Were LCSs analyzed at the required frequency? | **X** | | | | |
| | | **4)** Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits? | **X** | | | | |
| | | **5)** Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs? | **X** | | | | |
| | | **6)** Was the LCSD RPD within QC limits (if applicable)? | **X** | | | | |
| **R7** | OI | **Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data** | | | | | |
| | | **1)** Were the project/method specified analytes included in the MS and MSD? | **X** | | | | |
| | | **2)** Were MS/MSD analyzed at the appropriate frequency? | **X** | | | | |
| | | **3)** Were MS (and MSD, if applicable) %Rs within the laboratory QC limits? | **X** | | | | |
| | | **4)** Were MS/MSD RPDs within laboratory QC limits? | **X** | | | | |
| **R8** | OI | **Analytical Duplicate Data** | | | | | |
| | | **1)** Were appropriate analytical duplicates analyzed for each matrix? | **X** | | | | |
| | | **2)** Were analytical duplicates analyzed at the appropriate frequency? | **X** | | | | |
| | | **3)** Were RPDs or relative standard deviations within the laboratory QC limits? | **X** | | | | |
| **R9** | OI | **Method Quantitation Limits (MQLs):** | | | | | |
| | | **1)** Are the MQLs for each method analyte included in the laboratory data package? | **X** | | | | |
| | | **2)** Do the MQLs correspond to the concentration of the lowest non-zero calibration standard? | **X** | | | | |
| | | **3)** Are unadjusted MQLs and DCSs included in the laboratory data package? | **X** | | | | |
| **R10** | OI | **Other Problems/Anomalies** | | | | | |
| | | **1)** Are all known problems/anomalies/special conditions noted in this LRC and ER? | **X** | | | | **R10-01** |
| | | **2)** Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results? | **X** | | | | |
| | | **3)** Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package? | **X** | | | | |

## Laboratory Name: DHL Analytical, Inc.

## Laboratory Review Checklist (continued): Supporting Data

| | |
|---|---|
| **Project Name:** Ballard Site - Harvey Sampling | **LRC Date:** 9/18/17 |
| **Reviewer Name:** Carlos Castro | **Laboratory Work Order:** 1709100 |
| **Prep Batch Number(s):** See Prep Dates Report | **Run Batch:** See Analytical Dates Report |

| #[1] | A[2] | Description | Yes | No | NA[3] | NR[4] | ER#[5] |
|---|---|---|---|---|---|---|---|
| **S1** | OI | **Initial Calibration (ICAL)** | | | | | |
| | | **1)** Were response factors and/or relative response factors for each analyte within QC limits? | X | | | | |
| | | **2)** Were percent RSDs or correlation coefficient criteria met? | X | | | | |
| | | **3)** Was the number of standards recommended in the method used for all analytes? | X | | | | |
| | | **4)** Were all points generated between the lowest and highest standard used to calculate the curve? | X | | | | |
| | | **5)** Are ICAL data available for all instruments used? | X | | | | |
| | | **6)** Has the initial calibration curve been verified using an appropriate second source standard? | X | | | | |
| **S2** | OI | **Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):** | | | | | |
| | | **1)** Was the CCV analyzed at the method-required frequency? | X | | | | |
| | | **2)** Were percent differences for each analyte within the method-required QC limits? | X | | | | |
| | | **3)** Was the ICAL curve verified for each analyte? | X | | | | |
| | | **4)** Was the absolute value of the analyte concentration in the inorganic CCB < MDL? | | | X | | |
| **S3** | O | **Mass Spectral Tuning:** | | | | | |
| | | **1)** Was the appropriate compound for the method used for tuning? | X | | | | |
| | | **2)** Were ion abundance data within the method-required QC limits? | X | | | | |
| **S4** | O | **Internal Standards (IS):** | | | | | |
| | | **1)** Were IS area counts and retention times within the method-required QC limits? | X | | | | |
| **S5** | OI | **Raw Data (NELAC Section 5.5.10)** | | | | | |
| | | **1)** Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst? | X | | | | |
| | | **2)** Were data associated with manual integrations flagged on the raw data? | X | | | | |
| **S6** | O | **Dual Column Confirmation** | | | | | |
| | | **1)** Did dual column confirmation results meet the method-required QC? | | | X | | |
| **S7** | O | **Tentatively Identified Compounds (TICs):** | | | | | |
| | | **1)** If TICs were requested, were the mass spectra and TIC data subject to appropriate checks? | | | X | | |
| **S8** | I | **Interference Check Sample (ICS) Results:** | | | | | |
| | | **1)** Were percent recoveries within method QC limits? | X | | | | |
| **S9** | I | **Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions** | | | | | |
| | | **1)** Were percent differences, recoveries, and the linearity within the QC limits specified in the method? | X | | | | |
| **S10** | OI | **Method Detection Limit (MDL) Studies** | | | | | |
| | | **1)** Was a MDL study performed for each reported analyte? | X | | | | |
| | | **2)** Is the MDL either adjusted or supported by the analysis of DCSs? | X | | | | |
| **S11** | OI | **Proficiency Test Reports:** | | | | | |
| | | **1)** Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies? | X | | | | |
| **S12** | OI | **Standards Documentation** | | | | | |
| | | **1)** Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources? | X | | | | |
| **S13** | OI | **Compound/Analyte Identification Procedures** | | | | | |
| | | **1)** Are the procedures for compound/analyte identification documented? | X | | | | |
| **S14** | OI | **Demonstration of Analyst Competency (DOC)** | | | | | |
| | | **1)** Was DOC conducted consistent with NELAC Chapter 5 – Appendix C? | X | | | | |
| | | **2)** Is documentation of the analyst's competency up-to-date and on file? | X | | | | |
| **S15** | OI | **Verification/Validation Documentation for Methods** (NELAC Chapter 5) | | | | | |
| | | **1)** Are all the methods used to generate the data documented, verified, and validated, where applicable? | X | | | | |
| **S16** | OI | **Laboratory Standard Operating Procedures (SOPs):** | | | | | |
| | | **1)** Are laboratory SOPs current and on file for each method performed? | X | | | | |

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

# Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory is not accredited under the Texas Laboratory Accreditation Program.

**Release Statement:** I am responsible for the release of this laboratory data package. This laboratory is accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on March 27, 2017. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name: John DuPont
Official Title: General Manager

Signature

09/18/17

Date

Name: Scott Schroeder
Official Title: Technical Director

**DHL Analytical, Inc.** **Date:** *18-Sep-17*

**CLIENT:** Weston Solutions, Inc.
**Project:** Ballard Site-Harvey Sampling
**Lab Order:** 1709100

# CASE NARRATIVE

The samples were analyzed using the methods outlined in the following references:

Method SW8260C - Volatile Organics Analysis
Method SW6020A - Metals Analysis
Method Tx1005 - Total Petroleum Hydrocarbons Analysis
Method D2216 - Percent Moisture Analysis

Exception Report R1-01

The samples were received and log in performed on 9/13/17. A total of 4 samples were received and 3 analyzed. No further analyses were required as per the client. The samples arrived in good condition and were properly packaged.

Exception Report R10-01

Per project specification, MS/MSDs are from workorder or project samples only.

## DHL Analytical, Inc.

**Date:** *18-Sep-17*

**CLIENT:** Weston Solutions, Inc.
**Project:** Ballard Site-Harvey Sampling
**Lab Order:** 1709100

# Work Order Sample Summary

| Lab Smp ID | Client Sample ID | Tag Number | Date Collected | Date Recved |
|---|---|---|---|---|
| 1709100-01 | Ballard W-1 | | 09/12/17 11:40 AM | 9/13/2017 |
| 1709100-02 | Ballard FB-1 | | 09/12/17 11:50 AM | 9/13/2017 |
| 1709100-03 | Trip Blank | | 09/12/17 | 9/13/2017 |
| 1709100-04 | Ballard SO-1 | | 09/12/17 12:20 PM | 9/13/2017 |

**Lab Order:** 1709100
**Client:** Weston Solutions, Inc.
**Project:** Ballard Site-Harvey Sampling

# PREP DATES REPORT

| Sample ID | Client Sample ID | Collection Date | Matrix | Test Number | Test Name | Prep Date | Batch ID |
|---|---|---|---|---|---|---|---|
| 1709100-01A | Ballard W-1 | 09/12/17 11:40 AM | Aqueous | SW5030C | Purge and Trap Water GC/MS | 09/14/17 09:53 AM | 82366 |
| 1709100-01B | Ballard W-1 | 09/12/17 11:40 AM | Aqueous | SW3005A | Aq Prep Metals : ICP-MS | 09/14/17 08:20 AM | 82354 |
| 1709100-02A | Ballard FB-1 | 09/12/17 11:50 AM | Field Blank | SW5030C | Purge and Trap Water GC/MS | 09/14/17 09:53 AM | 82366 |
| 1709100-04A | Ballard SO-1 | 09/12/17 12:20 PM | Soil | TX1005 | TX1005 Soil Prep | 09/15/17 08:50 AM | 82374 |
| 1709100-04B | Ballard SO-1 | 09/12/17 12:20 PM | Soil | D2216 | Moisture Preparation | 09/15/17 10:54 AM | 82392 |

**Lab Order:** 1709100
**Client:** Weston Solutions, Inc.
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL DATES REPORT

| Sample ID | Client Sample ID | Matrix | Test Number | Test Name | Batch ID | Dilution | Analysis Date | Run ID |
|---|---|---|---|---|---|---|---|---|
| 1709100-01A | Ballard W-1 | Aqueous | SW8260C | 8260 Water Volatiles by GC/MS | 82366 | 1 | 09/14/17 02:46 PM | GCMS5_170914A |
| 1709100-01B | Ballard W-1 | Aqueous | SW6020A | Trace Metals: ICP-MS - Water | 82354 | 1 | 09/15/17 01:05 PM | ICP-MS4_170915A |
| 1709100-02A | Ballard FB-1 | Field Blank | SW8260C | 8260 Water Volatiles by GC/MS | 82366 | 1 | 09/14/17 12:49 PM | GCMS5_170914A |
| 1709100-04A | Ballard SO-1 | Soil | TX1005 | Tx1005 TPH Soil | 82374 | 1 | 09/15/17 02:11 PM | GC15_170915A |
| 1709100-04B | Ballard SO-1 | Soil | D2216 | Percent Moisture | 82392 | 1 | 09/18/17 09:01 AM | PMOIST_170915A |

# DHL Analytical, Inc.

**Date:** *18-Sep-17*

| | | | |
|---|---|---|---|
| **CLIENT:** | Weston Solutions, Inc. | **Client Sample ID:** | Ballard W-1 |
| **Project:** | Ballard Site-Harvey Sampling | **Lab ID:** | 1709100-01 |
| **Project No:** | | **Collection Date:** | 09/12/17 11:40 AM |
| **Lab Order:** | 1709100 | **Matrix:** | AQUEOUS |

| Analyses | Result | SDL | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TRACE METALS: ICP-MS - WATER** | | **SW6020A** | | | | | Analyst: **RO** |
| Arsenic | 0.163 | 0.00200 | 0.00500 | | mg/L | 1 | 09/15/17 01:05 PM |
| IS: Germanium | 84.5 | 0 | 70-200 | | %REC | 1 | 09/15/17 01:05 PM |
| **8260 WATER VOLATILES BY GC/MS** | | **SW8260C** | | | | | Analyst: **DEW** |
| Benzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/14/17 02:46 PM |
| IS: 1,4-Dichlorobenzene-d4 | 77.3 | 0 | 50-200 | | %REC | 1 | 09/14/17 02:46 PM |
| IS: Chlorobenzene-d5 | 80.0 | 0 | 50-200 | | %REC | 1 | 09/14/17 02:46 PM |
| IS: Fluorobenzene | 77.4 | 0 | 50-200 | | %REC | 1 | 09/14/17 02:46 PM |
| Surr: 1,2-Dichloroethane-d4 | 112 | 0 | 72-119 | | %REC | 1 | 09/14/17 02:46 PM |
| Surr: 4-Bromofluorobenzene | 98.6 | 0 | 76-119 | | %REC | 1 | 09/14/17 02:46 PM |
| Surr: Dibromofluoromethane | 101 | 0 | 85-115 | | %REC | 1 | 09/14/17 02:46 PM |
| Surr: Toluene-d8 | 97.1 | 0 | 81-120 | | %REC | 1 | 09/14/17 02:46 PM |

**Qualifiers:**

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAC certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

# DHL Analytical, Inc.

**Date:** *18-Sep-17*

| | | | |
|---|---|---|---|
| **CLIENT:** | Weston Solutions, Inc. | **Client Sample ID:** | Ballard FB-1 |
| **Project:** | Ballard Site-Harvey Sampling | **Lab ID:** | 1709100-02 |
| **Project No:** | | **Collection Date:** | 09/12/17 11:50 AM |
| **Lab Order:** | 1709100 | **Matrix:** | FIELD BLANK |

| Analyses | Result | SDL | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **8260 WATER VOLATILES BY GC/MS** | | **SW8260C** | | | | | Analyst: **DEW** |
| Benzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/14/17 12:49 PM |
| IS: 1,4-Dichlorobenzene-d4 | 77.2 | 0 | 50-200 | | %REC | 1 | 09/14/17 12:49 PM |
| IS: Chlorobenzene-d5 | 80.6 | 0 | 50-200 | | %REC | 1 | 09/14/17 12:49 PM |
| IS: Fluorobenzene | 78.8 | 0 | 50-200 | | %REC | 1 | 09/14/17 12:49 PM |
| Surr: 1,2-Dichloroethane-d4 | 109 | 0 | 72-119 | | %REC | 1 | 09/14/17 12:49 PM |
| Surr: 4-Bromofluorobenzene | 99.7 | 0 | 76-119 | | %REC | 1 | 09/14/17 12:49 PM |
| Surr: Dibromofluoromethane | 102 | 0 | 85-115 | | %REC | 1 | 09/14/17 12:49 PM |
| Surr: Toluene-d8 | 98.2 | 0 | 81-120 | | %REC | 1 | 09/14/17 12:49 PM |

**Qualifiers:**

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAC certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

# DHL Analytical, Inc.

**Date:** *18-Sep-17*

| | | | |
|---|---|---|---|
| **CLIENT:** | Weston Solutions, Inc. | **Client Sample ID:** | Ballard SO-1 |
| **Project:** | Ballard Site-Harvey Sampling | **Lab ID:** | 1709100-04 |
| **Project No:** | | **Collection Date:** | 09/12/17 12:20 PM |
| **Lab Order:** | 1709100 | **Matrix:** | SOIL |

| Analyses | Result | SDL | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|---|
| **TX1005 TPH SOIL** | | **TX1005** | | | | | Analyst: **AJH** |
| T/R Hydrocarbons: C6-C12 | <12.7 | 12.7 | 36.2 | | mg/Kg-dry | 1 | 09/15/17 02:11 PM |
| T/R Hydrocarbons: >C12-C28 | 50.4 | 12.7 | 36.2 | | mg/Kg-dry | 1 | 09/15/17 02:11 PM |
| T/R Hydrocarbons: >C28-C35 | 166 | 12.7 | 36.2 | | mg/Kg-dry | 1 | 09/15/17 02:11 PM |
| T/R Hydrocarbons: C6-C35 | 216 | 12.7 | 36.2 | | mg/Kg-dry | 1 | 09/15/17 02:11 PM |
| Surr: Isopropylbenzene | 108 | 0 | 70-130 | | %REC | 1 | 09/15/17 02:11 PM |
| Surr: Octacosane | 121 | 0 | 70-130 | | %REC | 1 | 09/15/17 02:11 PM |
| **PERCENT MOISTURE** | | **D2216** | | | | | Analyst: **VA** |
| Percent Moisture | 0.896 | 0 | 0 | | WT% | 1 | 09/18/17 09:01 AM |

**Qualifiers:**

- ND - Not Detected at the SDL
- J - Analyte detected between SDL and RL
- B - Analyte detected in the associated Method Blank
- DF- Dilution Factor
- N - Parameter not NELAC certified
- See Final Page of Report for MQLs and MDLs
- S - Spike Recovery outside control limits
- C - Sample Result or QC discussed in Case Narrative
- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

**Date:** *18-Sep-17*

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: GC15_170914A**

| | | | | | |
|---|---|---|---|---|---|
| Sample ID **DCS-82341** | Batch ID: **82342** | TestNo: **TX1005** | Units: **mg/Kg** | | |
| SampType: **DCS** | Run ID: **GC15_170914A** | Analysis Date: **9/14/2017 10:54:42 AM** | Prep Date: **9/13/2017** | | |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| T/R Hydrocarbons: C6-C35 | 9.54 | 20.0 | 10.00 | 0 | 95.4 | 50 | 200 | 0 | 0 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: GC15_170915A**

The QC data in batch 82374 applies to the following samples: 1709100-04A

| Sample ID **LCSD-82374** | Batch ID: **82374** | TestNo: **TX1005** | Units: **mg/Kg** |
|---|---|---|---|
| SampType: **LCSD** | Run ID: **GC15_170915A** | Analysis Date: **9/15/2017 1:53:46 PM** | Prep Date: **9/15/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| T/R Hydrocarbons: C6-C35 | 186 | 20.0 | 250.0 | 0 | 74.5 | 75 | 125 | 0.403 | 20 | |
| Surr: Isopropylbenzene | 26.8 | | 25.00 | | 107 | 70 | 130 | 0 | 0 | |
| Surr: Octacosane | 24.6 | | 25.00 | | 98.6 | 70 | 130 | 0 | 0 | |

| Sample ID **MB-82374** | Batch ID: **82374** | TestNo: **TX1005** | Units: **mg/Kg** |
|---|---|---|---|
| SampType: **MBLK** | Run ID: **GC15_170915A** | Analysis Date: **9/15/2017 2:02:45 PM** | Prep Date: **9/15/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| T/R Hydrocarbons: C6-C12 | <7.00 | 20.0 | | | | | | | | |
| T/R Hydrocarbons: >C12-C28 | <7.00 | 20.0 | | | | | | | | |
| T/R Hydrocarbons: >C28-C35 | <7.00 | 20.0 | | | | | | | | |
| T/R Hydrocarbons: C6-C35 | <7.00 | 20.0 | | | | | | | | |
| Surr: Isopropylbenzene | 26.6 | | 25.00 | | 106 | 70 | 130 | | | |
| Surr: Octacosane | 25.5 | | 25.00 | | 102 | 70 | 130 | | | |

| Sample ID **LCS-82374** | Batch ID: **82374** | TestNo: **TX1005** | Units: **mg/Kg** |
|---|---|---|---|
| SampType: **LCS** | Run ID: **GC15_170915A** | Analysis Date: **9/15/2017 4:10:39 PM** | Prep Date: **9/15/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| T/R Hydrocarbons: C6-C35 | 206 | 20.0 | 250.0 | 0 | 82.3 | 75 | 125 | | | |
| Surr: Isopropylbenzene | 27.9 | | 25.00 | | 112 | 70 | 130 | | | |
| Surr: Octacosane | 24.5 | | 25.00 | | 98.2 | 70 | 130 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: GC15_170915A**

| Sample ID **ICV-170915** | Batch ID: **R94180** | TestNo: **TX1005** | Units: **mg/Kg** |
|---|---|---|---|
| SampType: **ICV** | Run ID: **GC15_170915A** | Analysis Date: **9/15/2017 1:35:48 PM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| T/R Hydrocarbons: C6-C35 | 949 | 20.0 | 1000 | 0 | 94.9 | 75 | 125 | | | |
| Surr: Isopropylbenzene | 59.3 | | 50.00 | | 119 | 70 | 130 | | | |
| Surr: Octacosane | 50.8 | | 50.00 | | 102 | 70 | 130 | | | |

| Sample ID **CCV1-170915** | Batch ID: **R94180** | TestNo: **TX1005** | Units: **mg/Kg** |
|---|---|---|---|
| SampType: **CCV** | Run ID: **GC15_170915A** | Analysis Date: **9/15/2017 4:31:38 PM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| T/R Hydrocarbons: C6-C35 | 480 | 20.0 | 500.0 | 0 | 95.9 | 75 | 125 | | | |
| Surr: Isopropylbenzene | 30.6 | | 25.00 | | 123 | 70 | 130 | | | |
| Surr: Octacosane | 26.1 | | 25.00 | | 104 | 70 | 130 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4_170807E**

| Sample ID **DCS2-81788** | Batch ID: **81788** | TestNo: **SW6020A** | Units: **mg/L** |
|---|---|---|---|
| SampType: **DCS2** | Run ID: **ICP-MS4_170807E** | Analysis Date: **8/7/2017 11:02:00 AM** | Prep Date: **8/4/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.00209 | 0.00500 | 0.00200 | 0 | 104 | 80 | 120 | 0 | 0 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4_170915A**

The QC data in batch 82354 applies to the following samples: 1709100-01B

| Sample ID | **MB-82354** | Batch ID: | **82354** | TestNo: | **SW6020A** | Units: | **mg/L** |
|---|---|---|---|---|---|---|---|
| SampType: | **MBLK** | Run ID: | **ICP-MS4_170915A** | Analysis Date: | **9/15/2017 12:46:00 PM** | Prep Date: | **9/14/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | <0.00200 | 0.00500 | | | | | | | | |

| Sample ID | **LCS-82354** | Batch ID: | **82354** | TestNo: | **SW6020A** | Units: | **mg/L** |
|---|---|---|---|---|---|---|---|
| SampType: | **LCS** | Run ID: | **ICP-MS4_170915A** | Analysis Date: | **9/15/2017 12:48:00 PM** | Prep Date: | **9/14/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.199 | 0.00500 | 0.200 | 0 | 99.6 | 80 | 120 | | | |

| Sample ID | **LCSD-82354** | Batch ID: | **82354** | TestNo: | **SW6020A** | Units: | **mg/L** |
|---|---|---|---|---|---|---|---|
| SampType: | **LCSD** | Run ID: | **ICP-MS4_170915A** | Analysis Date: | **9/15/2017 12:50:00 PM** | Prep Date: | **9/14/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.196 | 0.00500 | 0.200 | 0 | 98.1 | 80 | 120 | 1.56 | 15 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4_170915A**

| Sample ID **ICV-170915** | Batch ID: **R94175** | TestNo: **SW6020A** | Units: **mg/L** |
|---|---|---|---|
| SampType: **ICV** | Run ID: **ICP-MS4_170915A** | Analysis Date: **9/15/2017 10:40:00 AM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.102 | 0.00500 | 0.100 | 0 | 102 | 90 | 110 | | | |

| Sample ID **LCVL-170915** | Batch ID: **R94175** | TestNo: **SW6020A** | Units: **mg/L** |
|---|---|---|---|
| SampType: **LCVL** | Run ID: **ICP-MS4_170915A** | Analysis Date: **9/15/2017 10:50:00 AM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.00472 | 0.00500 | 0.00500 | 0 | 94.4 | 70 | 130 | | | |

| Sample ID **CCV3-170915** | Batch ID: **R94175** | TestNo: **SW6020A** | Units: **mg/L** |
|---|---|---|---|
| SampType: **CCV** | Run ID: **ICP-MS4_170915A** | Analysis Date: **9/15/2017 12:36:00 PM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.196 | 0.00500 | 0.200 | 0 | 97.8 | 90 | 110 | | | |

| Sample ID **LCVL3-170915** | Batch ID: **R94175** | TestNo: **SW6020A** | Units: **mg/L** |
|---|---|---|---|
| SampType: **LCVL** | Run ID: **ICP-MS4_170915A** | Analysis Date: **9/15/2017 12:42:00 PM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.00478 | 0.00500 | 0.00500 | 0 | 95.5 | 70 | 130 | | | |

| Sample ID **CCV4-170915** | Batch ID: **R94175** | TestNo: **SW6020A** | Units: **mg/L** |
|---|---|---|---|
| SampType: **CCV** | Run ID: **ICP-MS4_170915A** | Analysis Date: **9/15/2017 1:24:00 PM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.195 | 0.00500 | 0.200 | 0 | 97.4 | 90 | 110 | | | |

| Sample ID **LCVL4-170915** | Batch ID: **R94175** | TestNo: **SW6020A** | Units: **mg/L** |
|---|---|---|---|
| SampType: **LCVL** | Run ID: **ICP-MS4_170915A** | Analysis Date: **9/15/2017 1:46:00 PM** | Prep Date: |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.00467 | 0.00500 | 0.00500 | 0 | 93.4 | 70 | 130 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: GCMS5_170706A**

| Sample ID **DCS-81295** | Batch ID: **81295** | TestNo: **SW8260C** | Units: **mg/L** |
|---|---|---|---|
| SampType: **DCS** | Run ID: **GCMS5_170706A** | Analysis Date: **7/6/2017 12:55:00 PM** | Prep Date: **7/6/2017** |

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.000479 | 0.00100 | 0.000464 | 0 | 103 | 10 | 400 | 0 | 0 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: GCMS5_170914A**

The QC data in batch 82366 applies to the following samples: 1709100-01A, 1709100-02A

Sample ID **LCS-82366** Batch ID: **82366** TestNo: **SW8260C** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS5_170914A** Analysis Date: **9/14/2017 10:27:00 AM** Prep Date: **9/14/2017**

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.0252 | 0.00100 | 0.0232 | 0 | 109 | 81 | 122 | | | |
| IS: 1,4-Dichlorobenzene-d4 | 0.200 | | 0.200 | | 82.0 | 50 | 200 | | | |
| IS: Chlorobenzene-d5 | 0.200 | | 0.200 | | 84.0 | 50 | 200 | | | |
| IS: Fluorobenzene | 0.200 | | 0.200 | | 80.8 | 50 | 200 | | | |
| Surr: 1,2-Dichloroethane-d4 | 225 | | 200.0 | | 112 | 72 | 119 | | | |
| Surr: 4-Bromofluorobenzene | 199 | | 200.0 | | 99.4 | 76 | 119 | | | |
| Surr: Dibromofluoromethane | 206 | | 200.0 | | 103 | 85 | 115 | | | |
| Surr: Toluene-d8 | 196 | | 200.0 | | 98.2 | 81 | 120 | | | |

Sample ID **LCSD-82366** Batch ID: **82366** TestNo: **SW8260C** Units: **mg/L**
SampType: **LCSD** Run ID: **GCMS5_170914A** Analysis Date: **9/14/2017 10:50:00 AM** Prep Date: **9/14/2017**

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.0237 | 0.00100 | 0.0232 | 0 | 102 | 81 | 120 | 6.27 | 20 | |
| IS: 1,4-Dichlorobenzene-d4 | 0.200 | | 0.200 | | 83.2 | 50 | 200 | 0 | 0 | |
| IS: Chlorobenzene-d5 | 0.200 | | 0.200 | | 84.5 | 50 | 200 | 0 | 0 | |
| IS: Fluorobenzene | 0.200 | | 0.200 | | 82.1 | 50 | 200 | 0 | 0 | |
| Surr: 1,2-Dichloroethane-d4 | 224 | | 200.0 | | 112 | 72 | 119 | 0 | 0 | |
| Surr: 4-Bromofluorobenzene | 200 | | 200.0 | | 99.8 | 76 | 119 | 0 | 0 | |
| Surr: Dibromofluoromethane | 205 | | 200.0 | | 102 | 85 | 115 | 0 | 0 | |
| Surr: Toluene-d8 | 198 | | 200.0 | | 99.1 | 81 | 120 | 0 | 0 | |

Sample ID **MB-82366** Batch ID: **82366** TestNo: **SW8260C** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS5_170914A** Analysis Date: **9/14/2017 11:38:00 AM** Prep Date: **9/14/2017**

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000300 | 0.00100 | | | | | | | | |
| IS: 1,4-Dichlorobenzene-d4 | 0.200 | | 0.200 | | 80.9 | 50 | 200 | | | |
| IS: Chlorobenzene-d5 | 0.200 | | 0.200 | | 85.1 | 50 | 200 | | | |
| IS: Fluorobenzene | 0.200 | | 0.200 | | 81.3 | 50 | 200 | | | |
| Surr: 1,2-Dichloroethane-d4 | 217 | | 200.0 | | 109 | 72 | 119 | | | |
| Surr: 4-Bromofluorobenzene | 200 | | 200.0 | | 99.8 | 76 | 119 | | | |
| Surr: Dibromofluoromethane | 206 | | 200.0 | | 103 | 85 | 115 | | | |
| Surr: Toluene-d8 | 195 | | 200.0 | | 97.6 | 81 | 120 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: GCMS5_170914A**

Sample ID **ICV-170914** Batch ID: **R94155** TestNo: **SW8260C** Units: **mg/L**
SampType: **ICV** Run ID: **GCMS5_170914A** Analysis Date: **9/14/2017 9:40:00 AM** Prep Date:

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.0464 | 0.00100 | 0.0464 | 0 | 100 | 80 | 120 | | | |
| IS: 1,4-Dichlorobenzene-d4 | 0.200 | | 0.200 | | 81.2 | 50 | 200 | | | |
| IS: Chlorobenzene-d5 | 0.200 | | 0.200 | | 80.8 | 50 | 200 | | | |
| IS: Fluorobenzene | 0.200 | | 0.200 | | 78.9 | 50 | 200 | | | |
| Surr: 1,2-Dichloroethane-d4 | 217 | | 200.0 | | 108 | 72 | 119 | | | |
| Surr: 4-Bromofluorobenzene | 198 | | 200.0 | | 99.0 | 76 | 119 | | | |
| Surr: Dibromofluoromethane | 206 | | 200.0 | | 103 | 85 | 115 | | | |
| Surr: Toluene-d8 | 198 | | 200.0 | | 99.1 | 81 | 120 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# ANALYTICAL QC SUMMARY REPORT

**RunID: PMOIST_170915A**

The QC data in batch 82392 applies to the following samples: 1709100-04B

Sample ID **1709115-09A-DUP** Batch ID: **82392** TestNo: **D2216** Units: **WT%**
SampType: **DUP** Run ID: **PMOIST_170915A** Analysis Date: **9/18/2017 9:01:00 AM** Prep Date: **9/15/2017**

| Analyte | Result | RL | SPK value | Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 8.38 | 0 | 0 | 9.800 | | | | 15.6 | 30 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| B | Analyte detected in the associated Method Blank | DF | Dilution Factor |
| J | Analyte detected between MDL and RL | MDL | Method Detection Limit |
| ND | Not Detected at the Method Detection Limit | R | RPD outside accepted control limits |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| J | Analyte detected between SDL and RL | N | Parameter not NELAC certified |

**CLIENT:** Weston Solutions, Inc.
**Work Order:** 1709100
**Project:** Ballard Site-Harvey Sampling

# MQL SUMMARY REPORT

| **TestNo: TX1005** | **MDL** | **MQL** |
|---|---|---|
| **Analyte** | **mg/Kg** | **mg/Kg** |
| T/R Hydrocarbons: C6-C12 | 7.00 | 20.0 |
| T/R Hydrocarbons: >C12-C28 | 7.00 | 20.0 |
| T/R Hydrocarbons: >C28-C35 | 7.00 | 20.0 |
| T/R Hydrocarbons: C6-C35 | 7.00 | 20.0 |

| **TestNo: SW6020A** | **MDL** | **MQL** |
|---|---|---|
| **Analyte** | **mg/L** | **mg/L** |
| Arsenic | 0.00200 | 0.00500 |

| **TestNo: SW8260C** | **MDL** | **MQL** |
|---|---|---|
| **Analyte** | **mg/L** | **mg/L** |
| Benzene | 0.000300 | 0.00100 |

**Qualifiers:** MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

# GC15
# For

# DHL Work Order
# 1709100

# GC15_170915A
# For

# DHL Work Order
# 1709100

# Lab Data Review Check List
## TPH Method TX1005

| PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG | Run ID: GC15_170915A<br>SOP: ORGANICS-TX1005-01 |
|---|---|

| Review Item | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|
| **Data Folder Contents**<br>1. Is the Prep Batch Report included?<br>***Check the Prep Start/End Dates, Sample Amounts, Bottle #s, pH ($H_2O$)*** | X | | | |
| 2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date?<br>***All standard/QC sample preparations shall be documented in LIMS*** | X | | | x |
| 3. Is the Run Log included? ***Check the Test Code, Sample Type, Batch ID, Prep Factor and Analysis Date/Time*** | X | | | |
| 4. Is the Chrom Perfect Sequence File included?<br>***All runs not reported shall be marked out (single line/Z'ed out)*** | X | | | |

| Test Codes | TX1005 | CWG - TPH | TPH - EXT |
|---|---|---|---|
| | C6-C12<br>C12-C28<br>C28-C35 | TPH-GRO - C6-C10<br>TPH-DRO - C10-C28<br>TPH-ORO - C28-C35 | C6-C12<br>C12-C28<br>C28-C40 |

## Daily Demonstration of Performance

**QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.**

| Review Item | Frequency | Limits | Pass | Fail (List Batch/Sample) **See Run Log** | 2nd Level Review |
|---|---|---|---|---|---|
| Marker ($C_6$, $C_{12}$, $C_{28}$, and $C_{35}$) | Before ICV | $C_6$ resolved from $C_5$? Are RTs within windows? | X | If RT of Marker peaks fall outside RT window, then update RT/slice report | x |
| | | $C_{35}/C_{28}$ ratio ≥ 75% | X | | |

**All evaluations are performed on the measured concentration of TPH from $C_6$-$C_{35}$**

| Review Item | Frequency | Limits | Pass | Fail | N/A | Review |
|---|---|---|---|---|---|---|
| ICV | Daily before sample analysis | 75-125% | X | | | x |
| Method Blank (MB) | Every Batch/20 samples | < MDL / <½ RL (DoD) or <1/10 the sample/reg limit | X | | | |
| Lab Control Sample (LCS) | Every Batch/20 samples | 75-125% | X | | | |
| Lab Control Sample Dup (LCSD) | Every Batch/20 samples | 75-125% | X | | | |
| LCSD - RPD | Every LCS/LCSD | ≤ 20 ($H_2O$) / ≤ 50 (Soil) | X | | | |
| Matrix Spike/ Matrix Spike Duplicate (MS/MSD) | Every Batch/20 samples | 75-125% | X | | | |
| MSD - RPD | Every MS/MSD | ≤ 20 ($H_2O$ and Soil) | X | | | |
| CCV | Every Batch of 20 samples and End of Run | 75-125% | X | | | |
| Surrogates | All samples and QC | 70-130% | | X | | |
| Rinse Blanks | Carryover (roller-coaster baseline > $C_{28}$?) | | Yes / No | If Yes: run blanks until baseline is flat | | x |
| Non gasoline/diesel patterns | Are hydrocarbons present past $C_{35}$? | | Yes / No | If yes: Add note in comment section in LIMS | | |
| Non gasoline/diesel patterns | $C_{28}$-$C_{35}$ > $C_{12}$-$C_{28}$ result | E flags added? | Yes / No | If yes: Add E flag and note in comment section in LIMS | | |

# Lab Data Review Check List
## TPH Method TX1005

| Review Item | Criteria | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|---|
| **Sample Analysis**<br>1. Are all sample hold times met? | $H_2O$ Prep: 7 Un/14 Preserved<br>Soil Prep: 14 Days<br>Analysis: 14 Days from Prep | X | | | |
| **TNRCC Method 1005 requires the use of a forced baseline for unresolved hydrocarbons to generate the TPH area - Baseline adjustment will be noted on the chromatogram.** | | | | | |
| 2. Are all manual integrations performed include a complete audit trail (before/after/reason) and analyst initial/date? ***Include comment with DoD work*** | Before & After - Signed Comment Section in LIMS<br>MI NOTES (Daily Analytical Run<br>MI NOTES (ICAL) | X<br>X | | | x |
| 3. Are all sample results checked for rounding errors? Check each range against total TPH result. | Sum of each individual range must match total TPH | X | | | |
| 4. Are all samples with concentrations **> the highest standard** used for calibration diluted and reanalyzed? | All results > high point of ICAL must be diluted | | | X | |
| **VARIANCE REPORT** | | | | | |
| **QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.** | | | | | |
| **NON-CONFORMANCES / VARIANCE**<br>1. Are all non-conformances included and noted? | All deviations from the method and SOP that affect data quality | | | X | x |
| 2. Are all corrective actions included? | | | | X | |
| 3. Does the variance require approval by the Technical Director/General Manager/QA Manager? | | | | X | |

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

| VARIANCE ITEM | REASON | CORRECTIVE ACTION |
|---|---|---|
| ___ Hold Time Exceeded (7Un/14 Days) | ___ Carryover from previous run | ___ Reanalyze QC to confirm |
| ___ ICV/CCV out of control (± 25%) | ___ Cross contamination | ___ Recalibrate |
| ___ MB/SYS BL out of control (> MDL / >½ RL) | ___ Lab Artifact | ___ Reprep/Reanalyze sample |
| ___ Surrogate(s) out of control | ___ Prep Spike error (describe) | ___ Reprep/Reanalyze Batch |
| ___ LCS ___ LCSD out of control (± 25%) | ___ Matrix Effect | ___ Reanalyze Batch/Sample/QC |
| ___ RPD out of control for LCS/LCSD (> 20) | ___ High Levels of Hydrocarbons | ___ Verify reagents are clean |
| ___ MS ___ MSD out of control (± 25%) | ___ Insufficient sample for QC | ___ Reanalyze sample to confirm |
| ___ RPD out of control for MS/MSD (> 20) | ___ Analytical Error | ___ Sample results ND w/ dilution |
| ___ No MS/MSD prepared - LCS/LCSD used instead | ___ Client Request | ___ Client notified and approved |
| ___ Missing QC (other than MS/MSD) | | ___ Flag data / Case narrative |
| ___ QC sample(s) was mis-spiked | | ___ Accept data |
| ___ Other (describe below) | ___ Other (describe below) | ___ Other (describe below) |

**General Comments and Impact on Data:**

Analyst: Andrew Hartford Date of Completion: 09/15/17

Second-Level Review: Janice Whitt Date Stamp: 9/18/2017

REVIEWED BY
By Janice Whitt at 11:37:03 AM, 9/18/2017

**DHL Analytical, Inc.**

**Run ID:** GC15_170915A **Run No.:** 94180

**Analytical Run Date:** 9/15/2017 **InstrumentID:** GC15

**Analyst:** Andrew Hartford **Column:**

**Calibration ID:** 798 **Column ID:**

**Column Length:**

**Cal Comments:** GC15_170831.CAL - Recalibrate Surrogates only
TPH ICAL: GC15_150918.CAL

| SampID | DF | TestCode | SampType | Batch ID | Analysis Date/Time | Q | Comments |
|---|---|---|---|---|---|---|---|
| MARKER | 1 | 1005_S | TUNE | R94180 | 9/15/2017 1:26:48 PM | | |
| ICV-170915 | 1 | 1005_S | ICV | R94180 | 9/15/2017 1:35:48 PM | | |
| LCS-82374 | 1 | 1005_S | LCS | 82374 | 9/15/2017 1:44:47 PM | | LCS below limit. See re-run below. DNR. |
| LCSD-82374 | 1 | 1005_S | LCSD | 82374 | 9/15/2017 1:53:46 PM | | |
| MB-82374 | 1 | 1005_S | MBLK | 82374 | 9/15/2017 2:02:45 PM | | |
| 1709100-04A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 2:11:44 PM | | MI. |
| 1709115-01A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 2:20:43 PM | | |
| 1709115-01AMS | 1 | 1005_S | MS | 82374 | 9/15/2017 2:29:42 PM | | |
| 1709115-01AMSD | 1 | 1005_S | MSD | 82374 | 9/15/2017 2:38:40 PM | | |
| 1709115-02A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 2:47:38 PM | | MI. |
| 1709115-03A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 2:56:36 PM | | MI. Surrogate octacosane failed due to co-elution. |
| 1709115-04A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 3:05:34 PM | | MI. |
| 1709115-05A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 3:14:31 PM | | MI. |
| 1709115-06A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 3:23:29 PM | | MI. Surrogate octacosane failed due to co-elution. |
| 1709115-07A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 3:32:26 PM | | MI. |
| 1709115-08A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 3:41:28 PM | | MI. |
| 1709115-09A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 3:50:28 PM | | MI. |
| 1709115-10A | 1 | 1005_S | SAMP | 82374 | 9/15/2017 3:59:27 PM | | MI. Surrogate octacosane failed due to co-elution. |
| LCS-82374 | 1 | 1005_S | LCS | 82374 | 9/15/2017 4:10:39 PM | | Re-run. |
| CCV1-170915 | 1 | 1005_S | CCV | R94180 | 9/15/2017 4:31:38 PM | | |

| Std ID | Std Name | Type | Exp. Date |
|---|---|---|---|
| SUR 170831 | TX 1005/1006 SURROGATE | LCS | 09/30/2017 |
| TX170516 | TX 1005/1006 50,000 PPM SPIKE | ALL | 05/16/2018 |

File Name = C:\CPData\GC15\170915.SEQ
File Date = 9/15/2017 4:25:55 PM

| Raw File Name | Method File Nam | Sample Name | Dilution |
|---|---|---|---|
| GC15_170915.001.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170915.002.raw | GC15_TX1005.M | TUNEMARKER | 1.00 |
| GC15_170915.003.raw | GC15_TX1005.M | ICV ICV-170915 | 1.00 |
| GC15_170915.004.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170915.005.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170915.006.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170915.007.raw | GC15_TX1005.M | ICV ICV-170915 | 1.00 |
| GC15_170915.008.raw | GC15_TX1005.M | TUNEMARKER | 1.00 |
| GC15_170915.009.raw | GC15_TX1005.M | ICV ICV-170915 | 1.00 |
| GC15_170915.010.raw | GC15_TX1005.M | LCS LCS-82374 | 1.00 |
| GC15_170915.011.raw | GC15_TX1005.M | LCSDLCSD-82374 | 1.00 |
| GC15_170915.012.raw | GC15_TX1005.M | MBLKMB-82374 | 1.00 |
| GC15_170915.013.raw | GC15_TX1005.M | SAMP1709100-04A | 1.00 |
| GC15_170915.014.raw | GC15_TX1005.M | SAMP1709115-01A | 1.00 |
| GC15_170915.015.raw | GC15_TX1005.M | MS 1709115-01AMS | 1.00 |
| GC15_170915.016.raw | GC15_TX1005.M | MSD 1709115-01AMSD | 1.00 |
| GC15_170915.017.raw | GC15_TX1005.M | SAMP1709115-02A | 1.00 |
| GC15_170915.018.raw | GC15_TX1005.M | SAMP1709115-03A | 1.00 |
| GC15_170915.019.raw | GC15_TX1005.M | SAMP1709115-04A | 1.00 |
| GC15_170915.020.raw | GC15_TX1005.M | SAMP1709115-05A | 1.00 |
| GC15_170915.021.raw | GC15_TX1005.M | SAMP1709115-06A | 1.00 |
| GC15_170915.022.raw | GC15_TX1005.M | SAMP1709115-07A | 1.00 |
| GC15_170915.023.raw | GC15_TX1005.M | SAMP1709115-08A | 1.00 |
| GC15_170915.024.raw | GC15_TX1005.M | SAMP1709115-09A | 1.00 |
| GC15_170915.025.raw | GC15_TX1005.M | SAMP1709115-10A | 1.00 |
| GC15_170915.026.raw | GC15_TX1005.M | LCS LCS-82374 | 1.00 |
| GC15_170915.027.raw | GC15_TX1005.M | CCV CCV1-170915 | 1.00 |

# DHL Analytical, Inc.

# PREP BATCH REPORT



Prep Start Date: **9/15/2017 8:50:00 AM**
Digestion:
Prep End Date: **9/15/2017 12:30:00 PM**

Prep Batch **82374** Prep Code: **1005S_PR** Technician: **Andrew Hartford**

Prep Factor Units: **mL/g**

**Equipment List**

Balance # 24

| Sample ID | Matrix | pH | SampAmt | Fin Vol | Factor | Bottle # | Vessel | Cleanup |
|---|---|---|---|---|---|---|---|---|
| 1709100-04A | Soil | | 5.57 | 10 | 1.795 | of 3 | | |
| Hold extract for potential 1006 | | | | | | | | |
| 1709115-01A | Soil | | 10.1 | 10 | 0.990 | 1 of 1 | | |
| 1709115-01AMS | Soil | | 10.11 | 10 | 0.989 | of | | |
| 1709115-01AMSD | Soil | | 10.06 | 10 | 0.994 | of | | |
| 1709115-02A | Soil | | 10.28 | 10 | 0.973 | 1 of 1 | | |
| 1709115-03A | Soil | | 10.05 | 10 | 0.995 | 1 of 1 | | |
| 1709115-04A | Soil | | 10.07 | 10 | 0.993 | 1 of 1 | | |
| 1709115-05A | Soil | | 10.19 | 10 | 0.981 | 1 of 1 | | |
| 1709115-06A | Soil | | 10.18 | 10 | 0.982 | 1 of 1 | | |
| 1709115-07A | Soil | | 10.15 | 10 | 0.985 | 1 of 1 | | |
| 1709115-08A | Soil | | 10.28 | 10 | 0.973 | 1 of 1 | | |
| 1709115-09A | Soil | | 10.39 | 10 | 0.962 | 1 of 1 | | |
| 1709115-10A | Soil | | 10.05 | 10 | 0.995 | 1 of 1 | | |
| LCS-82374 | Soil | | 10 | 10 | 1.000 | of | | |
| LCSD-82374 | Soil | | 10 | 10 | 1.000 | of | | |
| MB-82374 | Soil | | 10 | 10 | 1.000 | of | | |

| Number | Reagent Name | Amt | Units | Exp. Da |
|---|---|---|---|---|
| 11586 | VOA Vials | 1 | vial | 07/17/2027 |
| 11631 | Pentane | 10 | ml | 08/01/2027 |
| 11693 | Methanol GC Resolv | 2 | ml | 02/19/2018 |
| 11697 | Ottawa Sand | 10 | g | 08/19/2020 |

| Spk ID | Spike Name | SampType | Amt (mL or g) | Exp. Date |
|---|---|---|---|---|
| SUR 170831 | TX 1005/1006 SURROGATE | LCS | 0.025 | 09/30/2017 |
| TX170516 | TX 1005/1006 50,000 PPM SPIKE | ALL | 0.05 | 05/16/2018 |

**REVIEWED BY**
*By Janice Whitt at 11:18:56 AM, 9/18/2017*

# DHL Analytical, Inc.

# PREP BATCH REPORT

Prep Start Date: **9/15/2017 8:50:00 AM**
Digestion:
Prep End Date:

Prep Batch **82374** Prep Code: **1005S_PR** Technician: **Andrew Hartford**

Prep Factor Units: **mL/g**

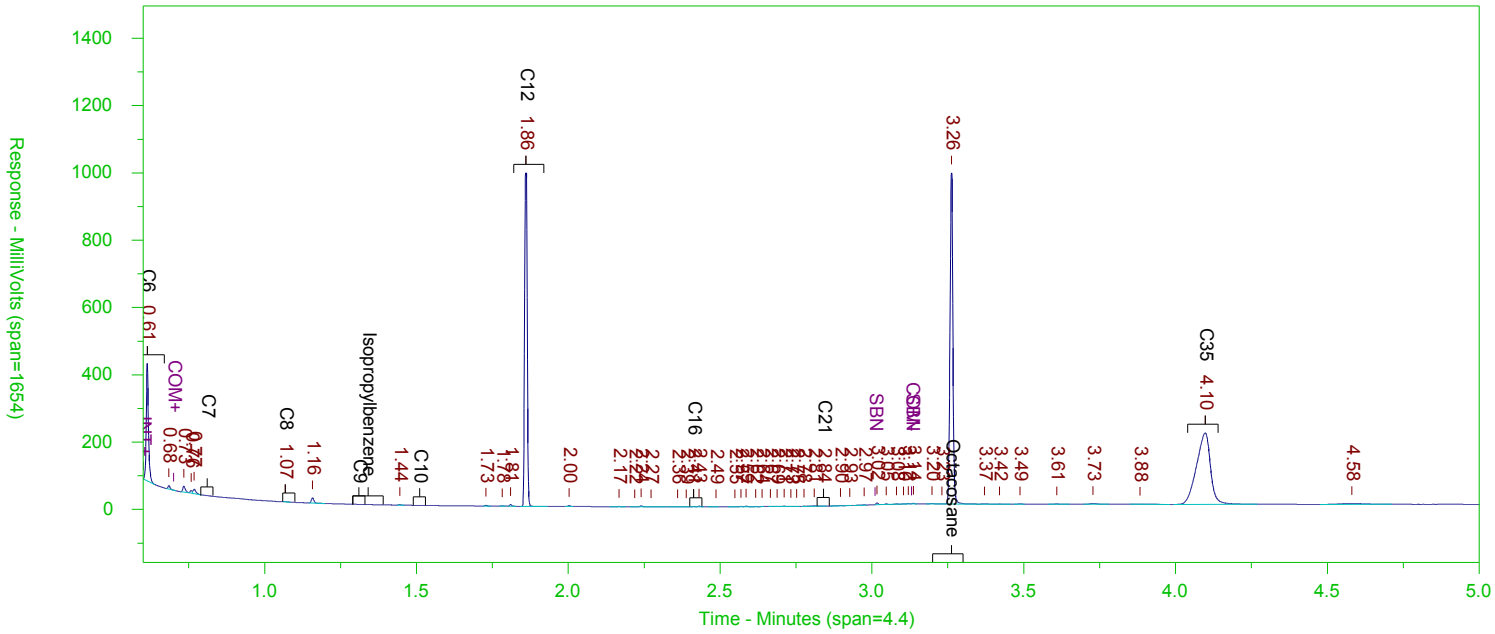
| Equipment List |
|---|
| Balance # 24 |

| Sample ID | Matrix | pH | SampAmt | Fin Vol | Factor | Bottle # | Vessel | Cleanup |
|---|---|---|---|---|---|---|---|---|
| 1709100-04A | Soil | 31.19-25.62 | ~~10~~ 5.57 | 10 | 1.000 | of 3 | | |
| Hold extract for potential 1006 | | | | | | | | |
| 1709115-01A | Soil | | 10.10 | 10 | 1.000 | 1 of 1 | | |
| 1709115-01AMS | Soil | | 10.11 | 10 | 1.000 | of | | |
| 1709115-01AMSD | Soil | | 10.06 | 10 | 1.000 | of | | |
| 1709115-02A | Soil | | 10.28 | 10 | 1.000 | 1 of 1 | | |
| 1709115-03A | Soil | | 10.05 | 10 | 1.000 | 1 of 1 | | |
| 1709115-04A | Soil | | 10.07 | 10 | 1.000 | 1 of 1 | | |
| 1709115-05A | Soil | | 10.19 | 10 | 1.000 | 1 of 1 | | |
| 1709115-06A | Soil | | 10.18 | 10 | 1.000 | 1 of 1 | | |
| 1709115-07A | Soil | | 10.15 | 10 | 1.000 | 1 of 1 | | |
| 1709115-08A | Soil | | 10.28 | 10 | 1.000 | 1 of 1 | | |
| 1709115-09A | Soil | | 10.39 | 10 | 1.000 | 1 of 1 | | |
| 1709115-10A | Soil | | 10.05 | 10 | 1.000 | 1 of 1 | | |
| LCS-82374 | Soil | | 10 | 10 | 1.000 | of | | |
| LCSD-82374 | Soil | | 10 | 10 | 1.000 | of | | |
| MB-82374 | Soil | | 10 | 10 | 1.000 | of | | |

| Number | Reagent Name | Amt | Units | Exp. Da |
|---|---|---|---|---|
| 11586 | VOA Vials | 1 | vial | 07/17/2027 |
| 11631 | Pentane | 10 | ml | 08/01/2027 |
| 11693 | Methanol GC Resolv | 2 | ml | 02/19/2018 |
| 11697 | Ottawa Sand | 10 | g | 08/19/2020 |

| Spk ID | Spike Name | SampType | Amt (mL or g) | Exp. Date |
|---|---|---|---|---|
| SUR 170831 | TX 1005/1006 SURROGATE | LCS | 0.025 | 09/30/2017 |
| TX170516 | TX 1005/1006 50,000 PPM SPIKE | ALL | 0.05 | 05/16/2018 |

REVIEWED BY
By Janice Whitt at 11:18:54 AM, 9/18/2017



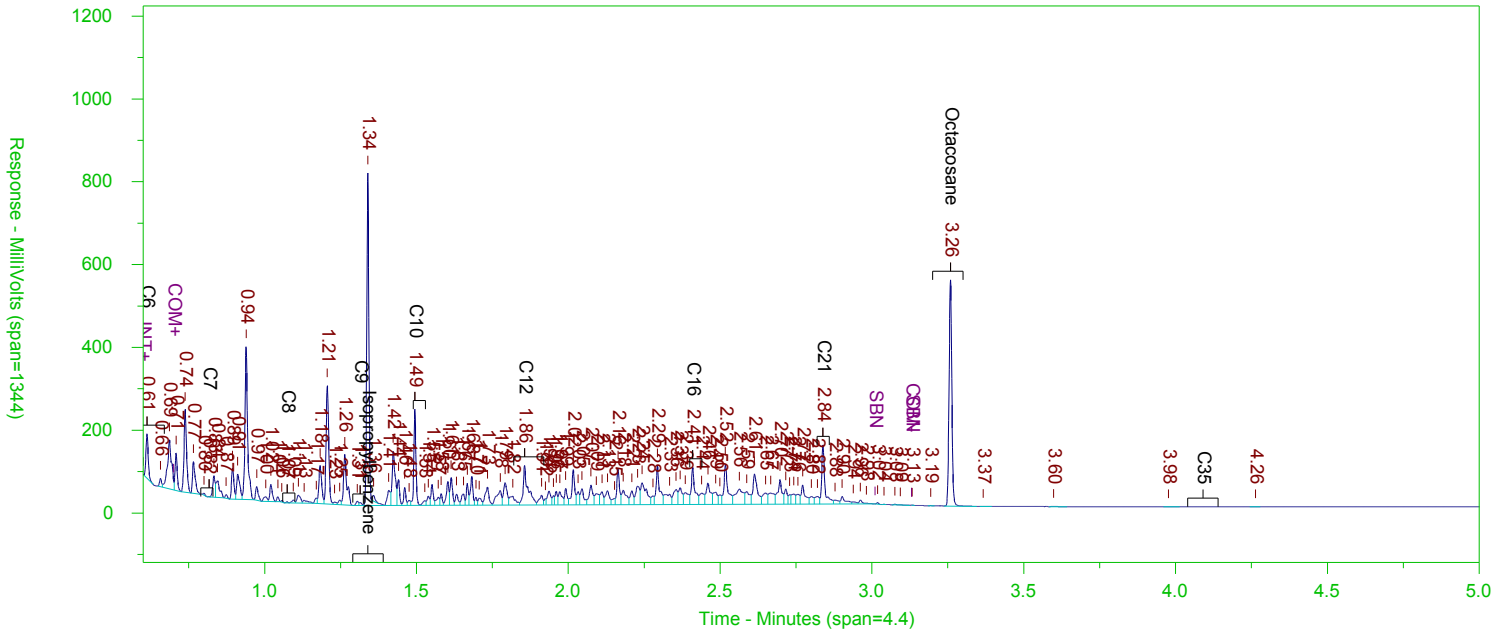

Sample Name: TUNEMARKER
Date of Analyses: 9/15/2017 1:26:48 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.008.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.613 | C6 | 175869 | 1157.72600 |
| 1.068 | C8 | 494 | 0.00000 |
| 1.860 | C12 | 601175 | 160653.70000 |
| 2.413 | C16 | 212 | 275.18860 |
| 2.840 | C21 | 219 | 127.78580 |
| 3.262 | Octacosane | 653648 | 96.65162 |
| 4.098 | C35 | 679593 | 210104.50000 |

REVIEWED BY
By Janice Whitt at 11:19:03 AM, 9/18/2017

Total Area - Surr: 1541239
C6-C12 Area: 817511 >C12-C28 Area: 19701 >C28-C35 Area: 704025 C6-C35 Area: 1541239
C35/C28 ratio: 103.9694 % >75%
I.S. (DILN FACTOR) : 1
R$:C6-C12 204.9414
R$:>C12-C28 4.939067
R$:>C28-C35 176.4918
R$:C6-C35 386.3722
R$:Isopropbenz 0
R$:Octacosane 96.65162

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

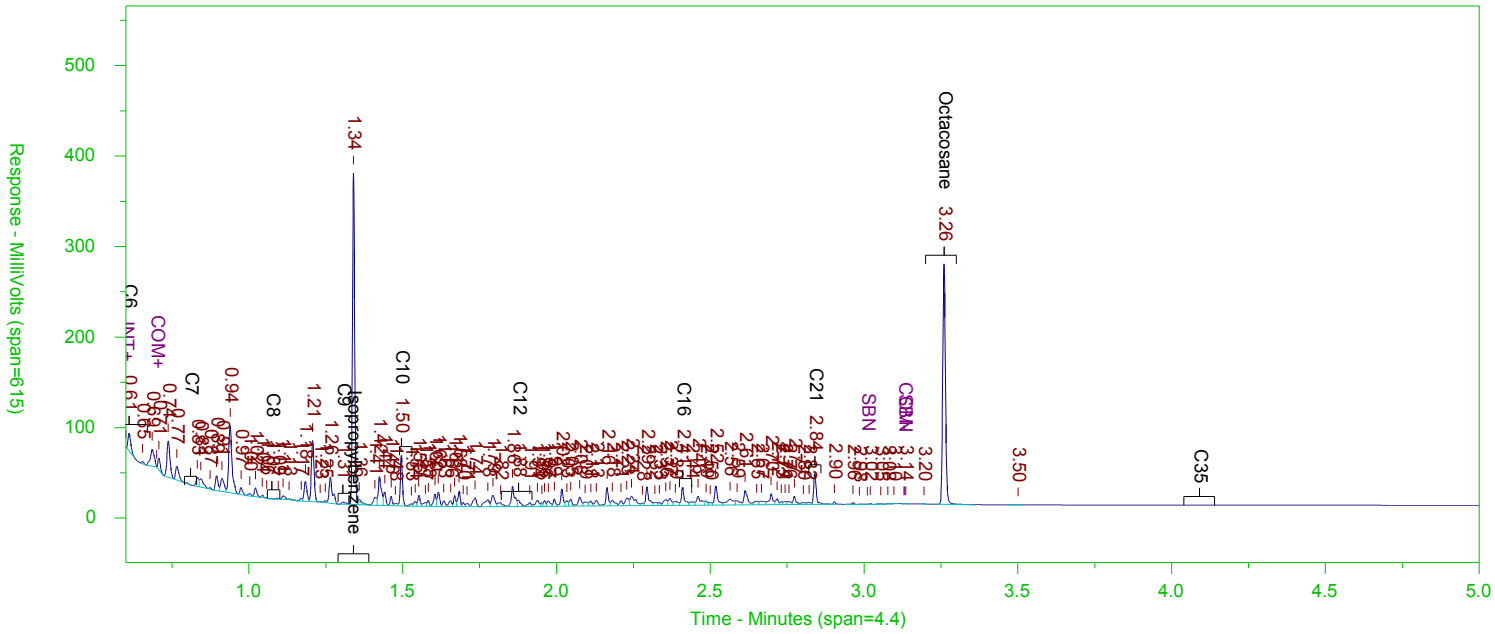



Sample Name: ICV ICV-170915
Date of Analyses: 9/15/2017 1:35:48 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.009.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.613 | C6 | 56515 | 361.67730 |
| 0.817 | C7 | 422 | 72.71120 |
| 1.074 | C8 | 1152 | 0.00000 |
| 1.315 | C9 | 3922 | 536.37870 |
| 1.340 | Isopropylbenzene | 413859 | 59.30080 |
| 1.495 | C10 | 113022 | 8599.13300 |
| 1.856 | C12 | 104731 | 27987.63000 |
| 2.410 | C16 | 72709 | 94475.16000 |
| 2.839 | C21 | 103706 | 60554.82000 |
| 3.259 | Octacosane | 343370 | 50.77232 |

Total Area - Surr: 3785025
C6-C12 Area: 2103302 >C12-C28 Area: 1681072 >C28-C35 Area: 650 C6-C35 Area: 3785025
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 527.2755
R$:>C12-C28 421.4269
R$:>C28-C35 0.1630634
R$:C6-C35 948.8655
R$:Isopropbenz 59.3008
R$:Octacosane 50.77232

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |



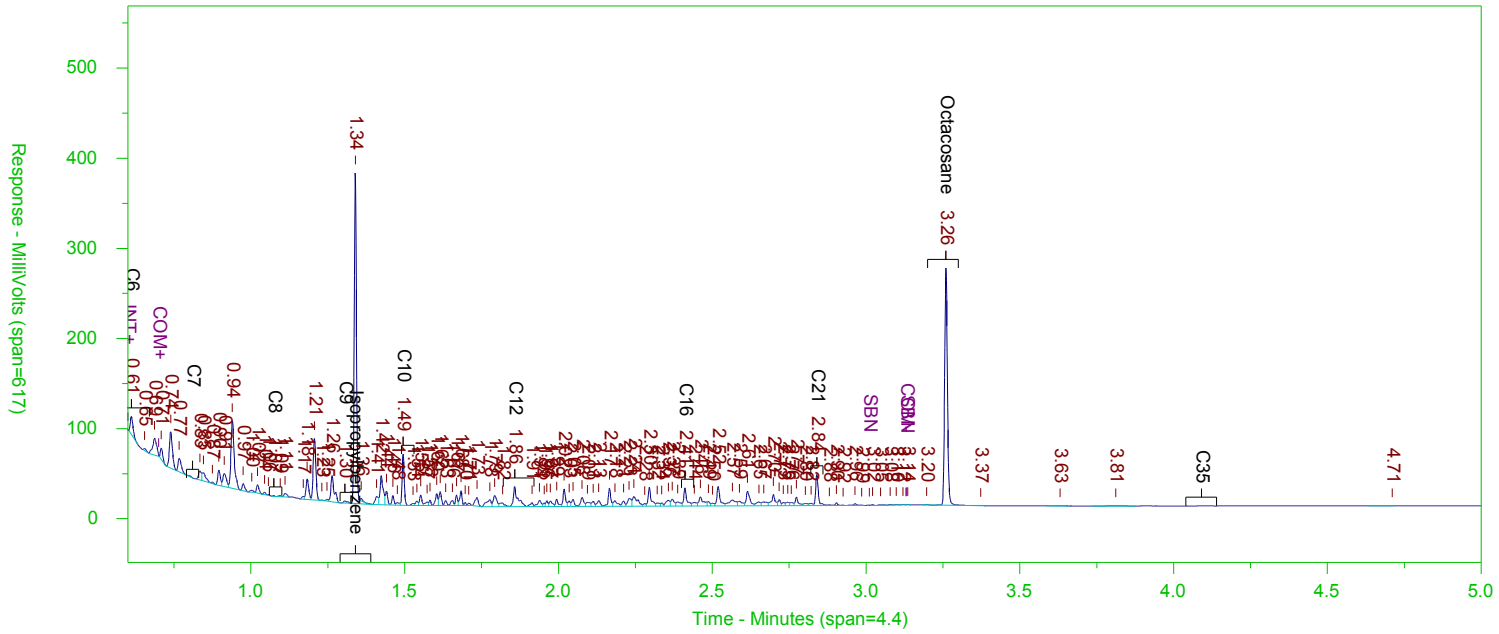

Sample Name: LCS LCS-82374
Date of Analyses: 9/15/2017 1:44:47 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.010.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.610 | C6 | 12202 | 66.12382 |
| 1.075 | C8 | 284 | 0.00000 |
| 1.306 | C9 | 2108 | 288.28060 |
| 1.340 | Isopropylbenzene | 185851 | 26.63009 |
| 1.496 | C10 | 27264 | 1873.21300 |
| 1.876 | C12 | 5029 | 1343.87200 |
| 2.410 | C16 | 13664 | 17754.73000 |
| 2.840 | C21 | 20290 | 11847.61000 |
| 3.260 | Octacosane | 166576 | 24.63077 |

Total Area - Surr: 740365.4
C6-C12 Area: 466134 >C12-C28 Area: 274089 >C28-C35 Area: 141 C6-C35 Area: 740365.4
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 116.8549
R$:>C12-C28 68.71128
R$:>C28-C35 0.03558385
R$:C6-C35 185.6018
R$:Isopropbenz 26.63009
R$:Octacosane 24.63077

DNR.

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

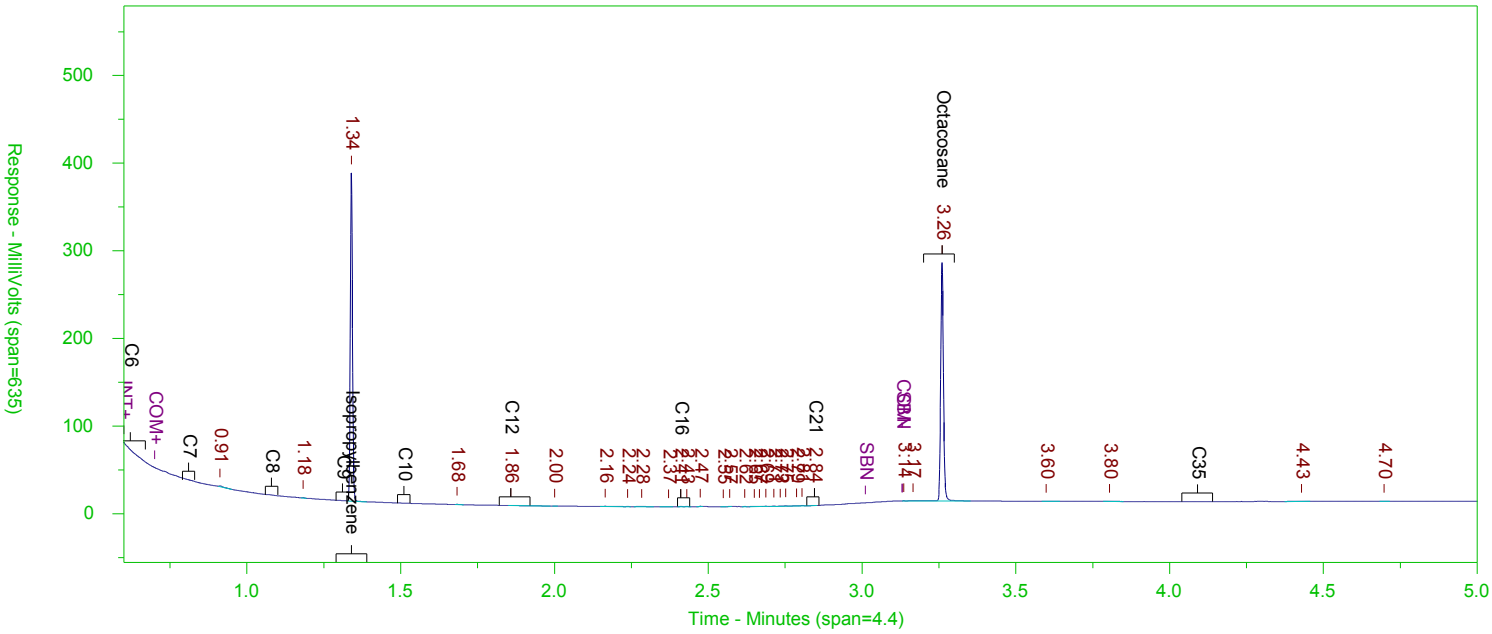



Sample Name: LCSDLCSD-82374
Date of Analyses: 9/15/2017 1:53:46 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.011.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.611 | C6 | 12479 | 67.97582 |
| 1.074 | C8 | 299 | 0.00000 |
| 1.305 | C9 | 2130 | 291.37280 |
| 1.339 | Isopropylbenzene | 187025 | 26.79840 |
| 1.495 | C10 | 26972 | 1850.33600 |
| 1.857 | C12 | 21887 | 5849.01100 |
| 2.411 | C16 | 13843 | 17986.54000 |
| 2.840 | C21 | 20995 | 12259.37000 |
| 3.260 | Octacosane | 166660 | 24.64315 |

Total Area - Surr: 744443.4
C6-C12 Area: 459245 >C12-C28 Area: 283969 >C28-C35 Area: 1227 C6-C35 Area: 744443.4
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 115.128
R$:>C12-C28 71.18823
R$:>C28-C35 0.3078382
R$:C6-C35 186.6241
R$:Isopropbenz 26.7984
R$:Octacosane 24.64315

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

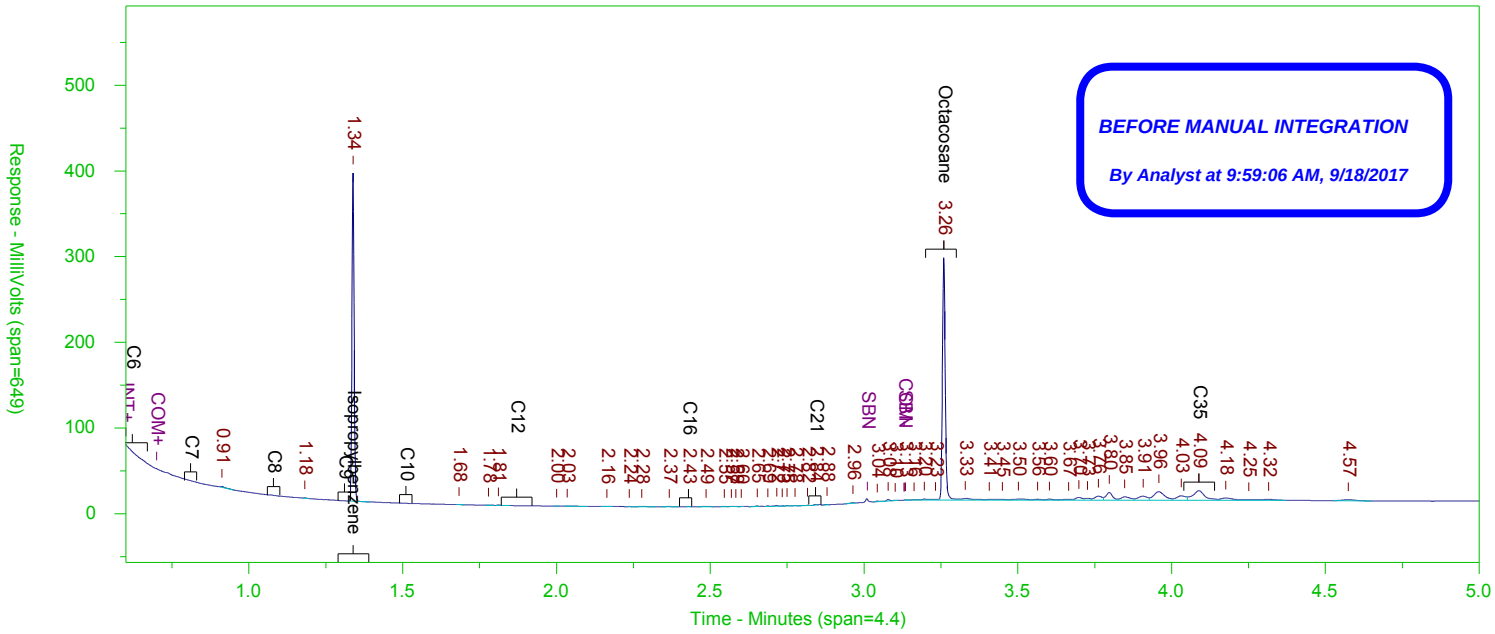



Sample Name: MBLKMB-82374
Date of Analyses: 9/15/2017 2:02:45 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.012.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.340 | Isopropylbenzene | 185657 | 26.60232 |
| 1.857 | C12 | 548 | 146.46970 |
| 2.411 | C16 | 129 | 167.76250 |
| 2.845 | C21 | 152 | 88.70935 |
| 3.260 | Octacosane | 172127 | 25.45161 |

Total Area - Surr: 7387.547
C6-C12 Area: 1618 >C12-C28 Area: 5059 >C28-C35 Area: 709 C6-C35 Area: 7387.547
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.4057525
R$:>C12-C28 1.268449
R$:>C28-C35 0.1777776
R$:C6-C35 1.85198
R$:Isopropbenz 26.60232
R$:Octacosane 25.45161

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |



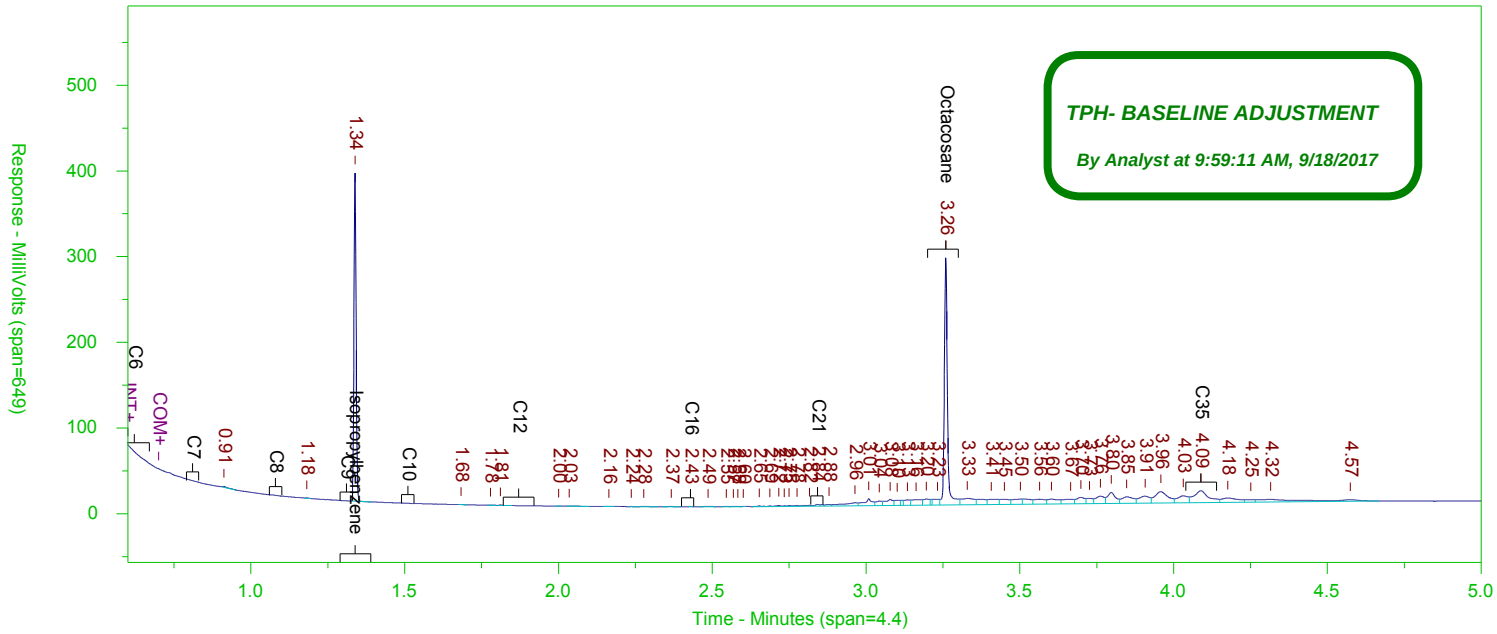

BEFORE MANUAL INTEGRATION
By Janice Whitt at 11:26:18 AM, 9/18/2017

Sample Name: SAMP1709100-04A
Date of Analyses: 9/15/2017 2:11:44 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.013.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.338 | Isopropylbenzene | 187645 | 26.88716 |
| 2.429 | C16 | 189 | 245.10290 |
| 2.842 | C21 | 531 | 310.10740 |
| 3.259 | Octacosane | 182291 | 26.95452 |
| 4.088 | C35 | 29966 | 9264.32700 |

Total Area - Surr: 159692.2
C6-C12 Area: 1495 >C12-C28 Area: 12458 >C28-C35 Area: 145738 C6-C35 Area: 159692.2
C35/C28 ratio: 16.43848 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.3748041
R$:>C12-C28 3.12319
R$:>C28-C35 36.53515
R$:C6-C35 40.03315
R$:Isopropbenz 26.88716
R$:Octacosane 26.95452

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |



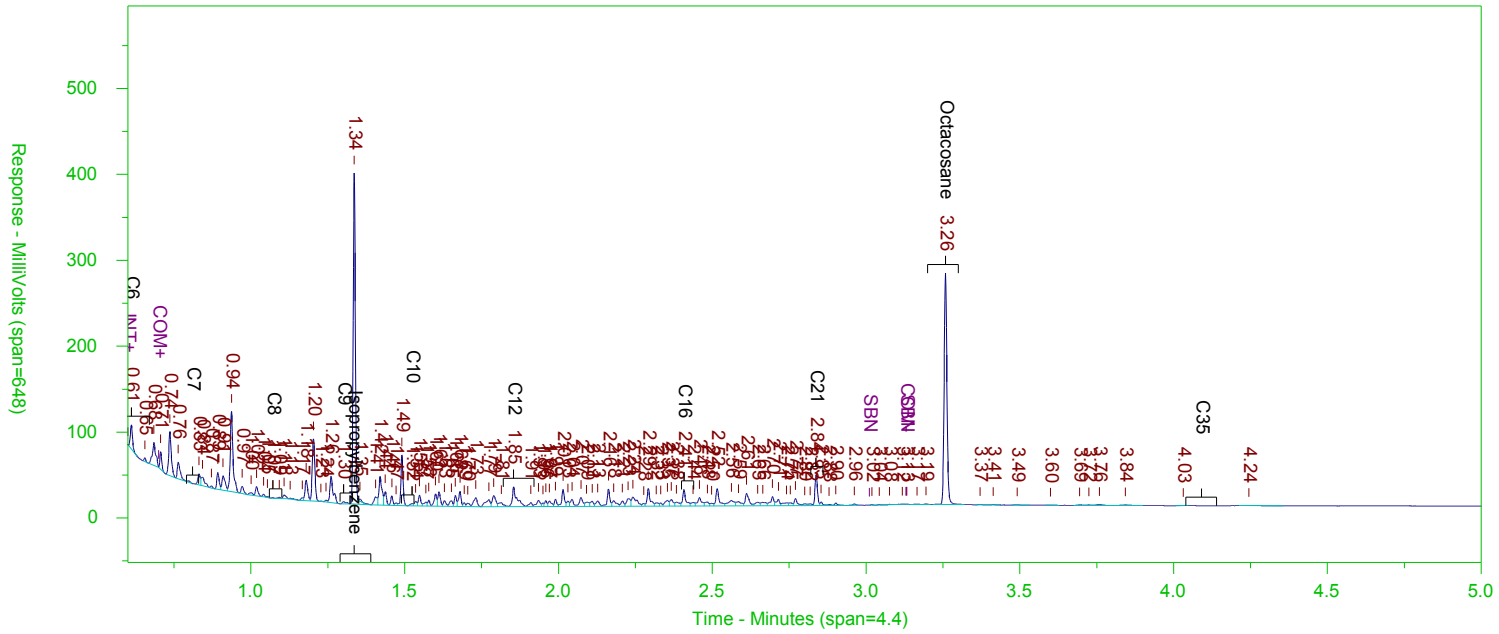

AFTER MANUAL INTEGRATION
By Janice Whitt at 11:26:24 AM, 9/18/2017

Sample Name: SAMP1709100-04A
Date of Analyses: 9/15/2017 2:11:44 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.013.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.338 | Isopropylbenzene | 187645 | 26.88716 |
| 2.429 | C16 | 189 | 245.10290 |
| 2.842 | C21 | 1997 | 1165.83300 |
| 3.259 | Octacosane | 204224 | 30.19762 |
| 4.088 | C35 | 46537 | 14387.59000 |

Total Area - Surr: 476834.3
C6-C12 Area: 1495 >C12-C28 Area: 110884 >C28-C35 Area: 364455 C6-C35 Area: 476834.3
C35/C28 ratio: 22.78739 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.3748042
R$:>C12-C28 27.79745
R$:>C28-C35 91.36507
R$:C6-C35 119.5373
R$:Isopropbenz 26.88716
R$:Octacosane 30.19762

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

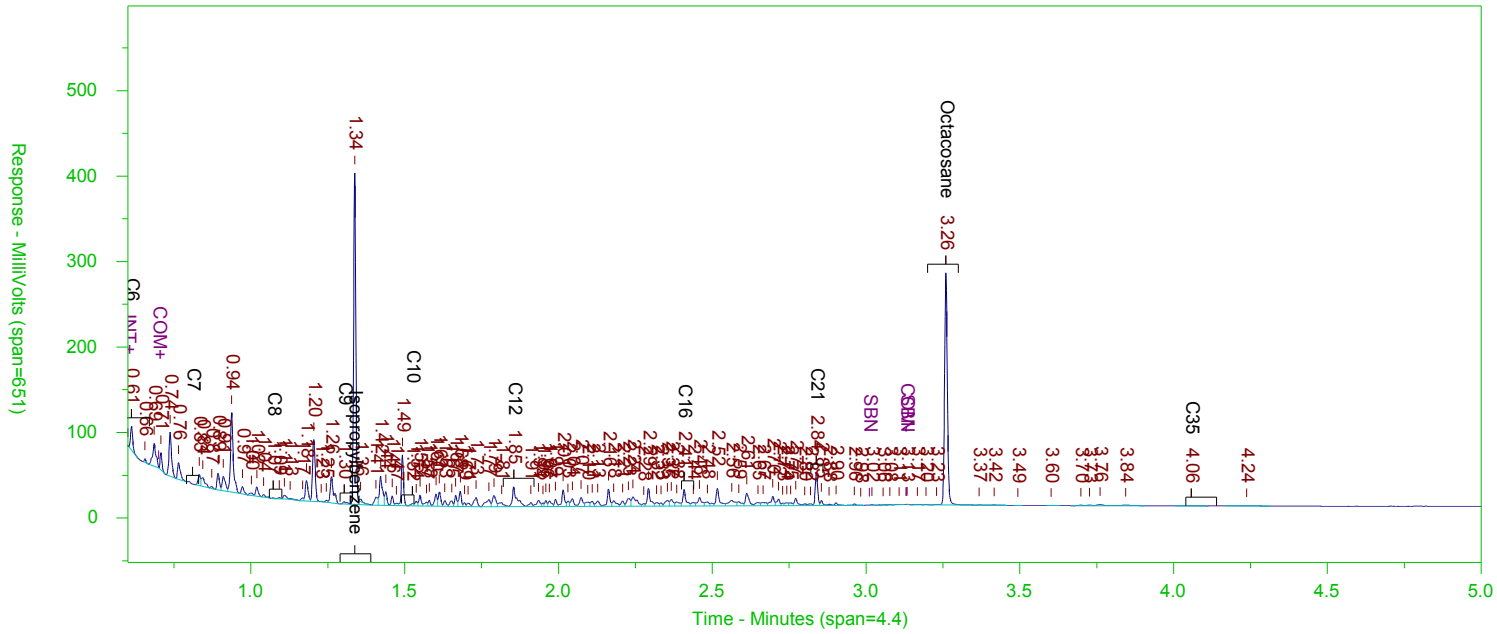



Sample Name: MS 1709115-01AMS
Date of Analyses: 9/15/2017 2:29:42 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.015.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.611 | C6 | 13568 | 75.23853 |
| 1.071 | C8 | 332 | 0.00000 |
| 1.302 | C9 | 2271 | 310.64120 |
| 1.336 | Isopropylbenzene | 194366 | 27.85020 |
| 1.523 | C10 | 1793 | -124.50570 |
| 1.854 | C12 | 23107 | 6174.83500 |
| 2.408 | C16 | 13935 | 18106.85000 |
| 2.837 | C21 | 19873 | 11604.20000 |
| 3.258 | Octacosane | 171278 | 25.32597 |

Total Area - Surr: 792980.9
C6-C12 Area: 502444 >C12-C28 Area: 283240 >C28-C35 Area: 7295 C6-C35 Area: 792980.9
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 125.9576
R$:>C12-C28 71.00546
R$:>C28-C35 1.828794
R$:C6-C35 198.7919
R$:Isopropbenz 27.8502
R$:Octacosane 25.32597

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

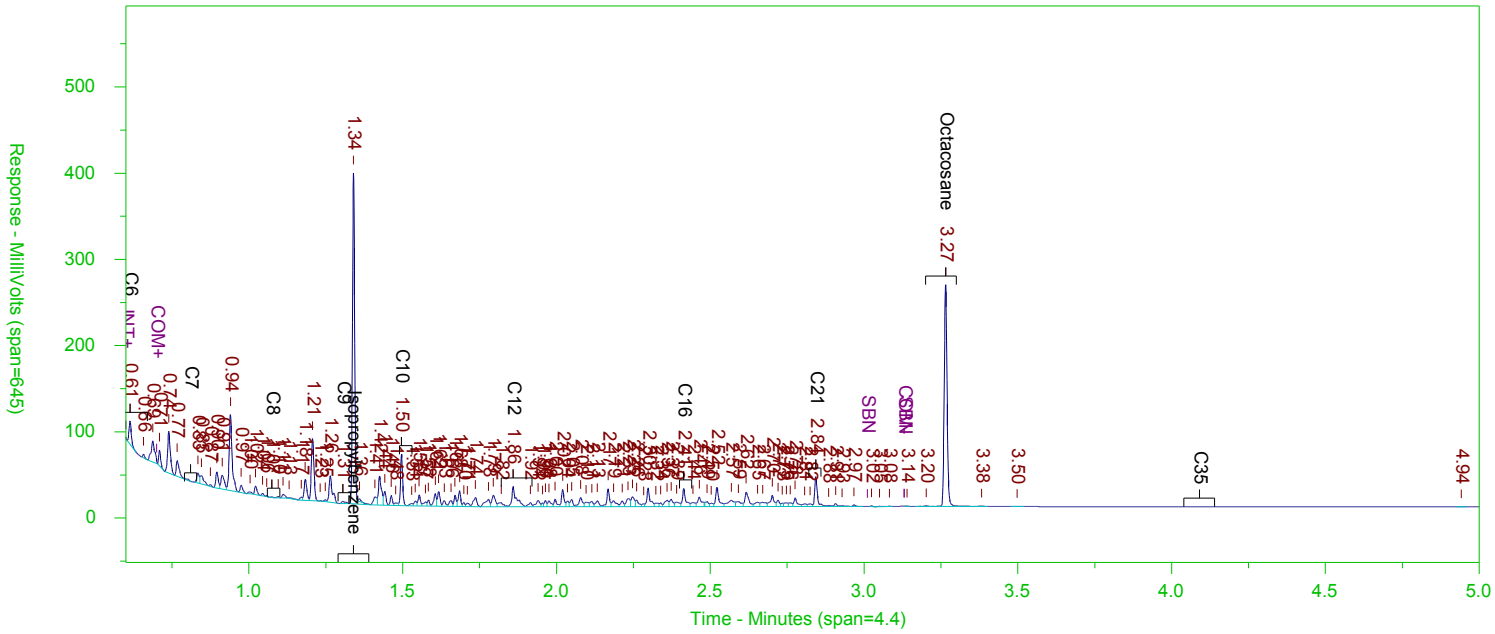



Sample Name: MSD 1709115-01AMSD
Date of Analyses: 9/15/2017 2:38:40 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.016.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.612 | C6 | 13644 | 75.74513 |
| 1.072 | C8 | 328 | 0.00000 |
| 1.303 | C9 | 2278 | 311.57870 |
| 1.337 | Isopropylbenzene | 195919 | 28.07269 |
| 1.525 | C10 | 1821 | -122.25210 |
| 1.854 | C12 | 22988 | 6143.22000 |
| 2.408 | C16 | 13636 | 17718.32000 |
| 2.838 | C21 | 21432 | 12514.45000 |
| 3.260 | Octacosane | 172773 | 25.54709 |
| 4.057 | C35 | 702 | 217.15810 |

Total Area - Surr: 796517.6
C6-C12 Area: 502559 >C12-C28 Area: 285337 >C28-C35 Area: 8620 C6-C35 Area: 796517.6
C35/C28 ratio: 0.4065499 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 125.9863
R$:>C12-C28 71.53117
R$:>C28-C35 2.161005
R$:C6-C35 199.6785
R$:Isopropbenz 28.07269
R$:Octacosane 25.54709

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

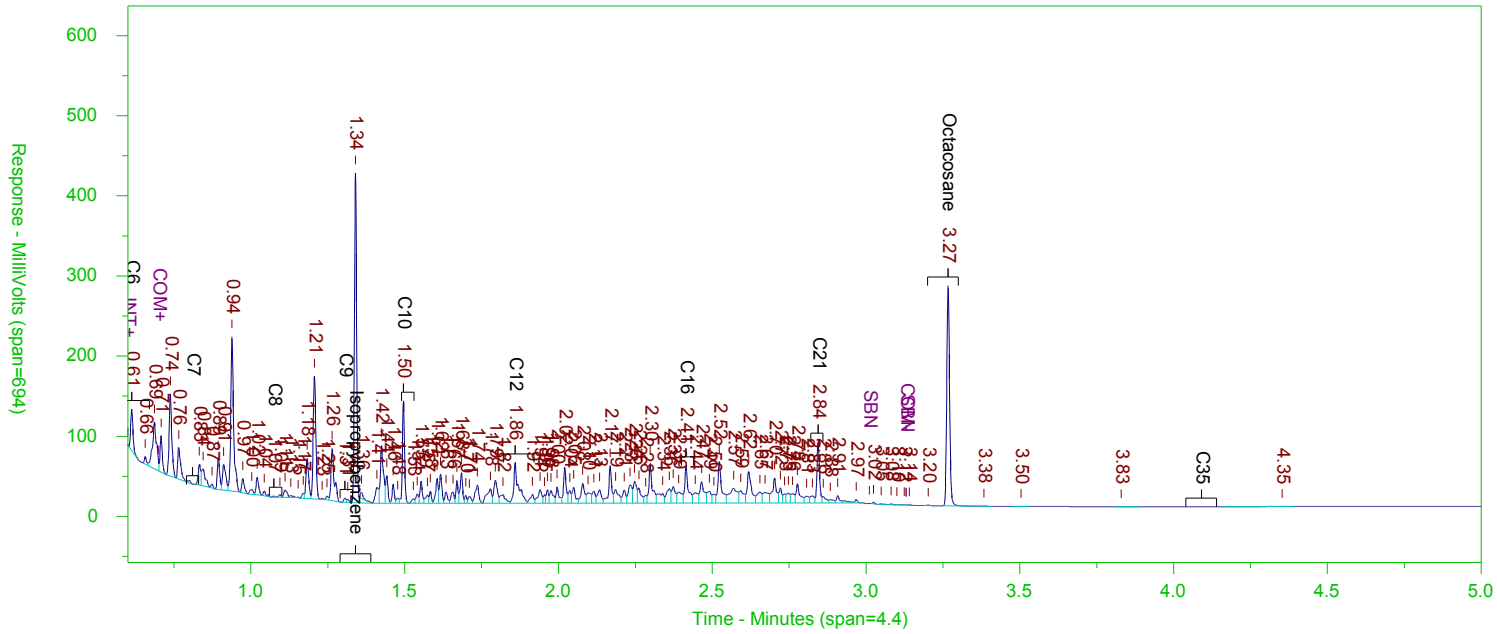



Sample Name: LCS LCS-82374
Date of Analyses: 9/15/2017 4:10:39 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.026.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.613 | C6 | 13623 | 75.60423 |
| 1.075 | C8 | 328 | 0.00000 |
| 1.306 | C9 | 2261 | 309.20410 |
| 1.340 | Isopropylbenzene | 195034 | 27.94590 |
| 1.496 | C10 | 28285 | 1953.27900 |
| 1.859 | C12 | 23496 | 6278.88900 |
| 2.414 | C16 | 15246 | 19809.43000 |
| 2.843 | C21 | 22184 | 12953.61000 |
| 3.265 | Octacosane | 165986 | 24.54355 |

Total Area - Surr: 821742.5
C6-C12 Area: 498991 >C12-C28 Area: 322237 >C28-C35 Area: 513 C6-C35 Area: 821742.5
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 125.0918
R$:>C12-C28 80.78146
R$:>C28-C35 0.1288258
R$:C6-C35 206.0021
R$:Isopropbenz 27.9459
R$:Octacosane 24.54355

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |




Sample Name: CCV CCV1-170915
Date of Analyses: 9/15/2017 4:31:38 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170915.027.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.612 | C6 | 27072 | 165.30630 |
| 1.074 | C8 | 616 | 0.00000 |
| 1.306 | C9 | 2849 | 389.64450 |
| 1.340 | Isopropylbenzene | 213887 | 30.64727 |
| 1.496 | C10 | 61871 | 4587.43700 |
| 1.859 | C12 | 53042 | 14174.62000 |
| 2.415 | C16 | 37179 | 48309.35000 |
| 2.844 | C21 | 45536 | 26589.05000 |
| 3.267 | Octacosane | 176640 | 26.11889 |

Total Area - Surr: 1915089
C6-C12 Area: 1090405 >C12-C28 Area: 823297 >C28-C35 Area: 1386 C6-C35 Area: 1915089
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 273.353
R$:>C12-C28 206.392
R$:>C28-C35 0.3474675
R$:C6-C35 480.0924
R$:Isopropbenz 30.64727
R$:Octacosane 26.11889

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

# GC15
# Calibration Curve
# For

# DHL Work Order
# 1709100

CAL ID 798

# Method TX1005/TX1006 Calibration Curve Sheet

**Instrument ID:** GC # 15 **Calibration File Name:** GC15_170831.CAL

RECALIBRATE SURROGATES ONLY

| Surrogate Target Concentration | µL of 10,000 ppm Surrogate | Final Volume mL |
|---|---|---|
| 5 ppm | 5 | 10 |
| 10 ppm | 1 | 1 |
| 25 ppm | 2.5 | 1 |
| 40 ppm | 4 | 1 |
| 50 ppm | 5 | 1 |
| SSCV 50 ppm | 5 | 1 |

| TPH-Diesel Target Concentration | µL of 50,000 ppm Target Standard | Final Volume mL |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

## Standards Used for the Calibration Curve

| Cal Standard | DHL Standard ID (LIMS): |
|---|---|
| CAL/LCS/MS/MSD | TX170516 |
| SSCV | TX150123S |
| SURROGATE | SUR 170831 |

| Review Item | Acceptance Criteria | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|---|
| 1. Are all standards within expiration dates? | TX1005 Stds – 6 months<br>TX1005 Surr – 6 months<br>TX1005 Stock Stds - 1 yr | | X | | |
| 2. Are all manual integrations listed on MI tracking form? **(DoD projects only)** | Manual Integration Tracking Form | | | X | |
| 3. Does the ICAL curve meet criteria? Use average CF only if %RSD < 25% | %RSD < 25%<br>COD ≥ 0.990 | X | | | X |
| 4. Has the low point been reprocessed under the new ICAL curve and meets criteria? | 70-130% recovery | X | | | |
| 5. Has the SSCV been analyzed and meets criteria? | 75-125% recovery | X | | | |

Analyst: Andrew Hartford Date: 9/1/17

Second-Level Review: Date: 09/07/2017

Recalibrate surrogates only.

TPH CURVE: GC15_150918.CAL - SEE ATTACHED ICAL AFTER THE SURROGATE ICAL

REVIEWED/APPROVED
By Sherri Herschmann at 1:44:30 PM, 9/7/2017

File Name: C:\CPdata\Methods\TX1005\GC15_170831.CAL
Version: 2

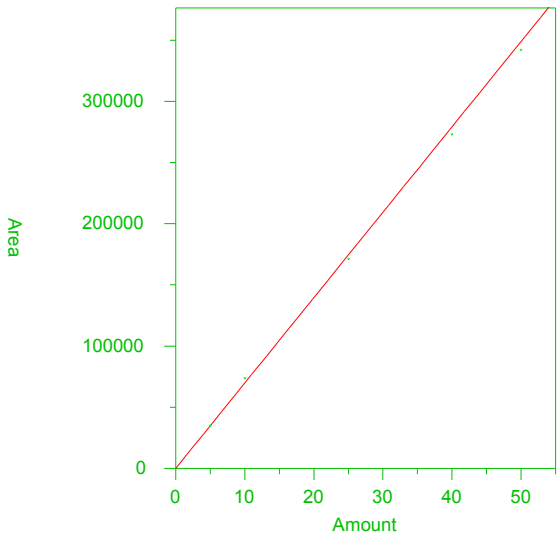
Creator:
Description:
Reason for change:

External standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 0
Reference peak area reject threshold: 0
Amount units:
No default component

Method of calculating data point averages: Equal weight for all updates
No calibration update report

All levels are normal data points.

5 Isopropylbenzene




Expected retention time: 1.34 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

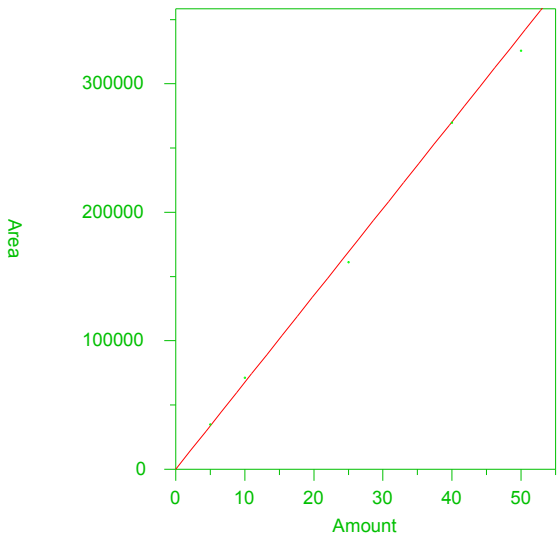
Single peak quantification by area

Y = 6978.976 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.998342
Average error: 2.415%
Average CF: 6978.976
RSD: 3.275%

| Level | Amount | Response | Cal Factor | Error, % | Source | Date and time |
|---|---|---|---|---|---|---|
| 1 | 5 | 35078 | 7015.6 | 0.525 | Manual | 9/1/2017 8:49:09 AM |
| 2 | 10 | 73637 | 7363.7 | 5.513 | Manual | 9/1/2017 8:49:42 AM |
| 3 | 25 | 171302 | 6852.08 | -1.818 | Manual | 9/1/2017 8:49:25 AM |
| 4 | 40 | 272876 | 6821.9 | -2.251 | Manual | 9/1/2017 8:49:58 AM |
| 5 | 50 | 342080 | 6841.6 | -1.968 | Manual | 9/7/2017 10:06:14 AM |

10 Octacosane




| | |
|---|---|
| Expected retention time: | 3.25 minutes |
| Search window: | 0.05 minutes |
| No retention time reference component | |
| No response proxy component | |
| Group number: | 0 |
| | |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by area

Y = 6762.926 X + 0

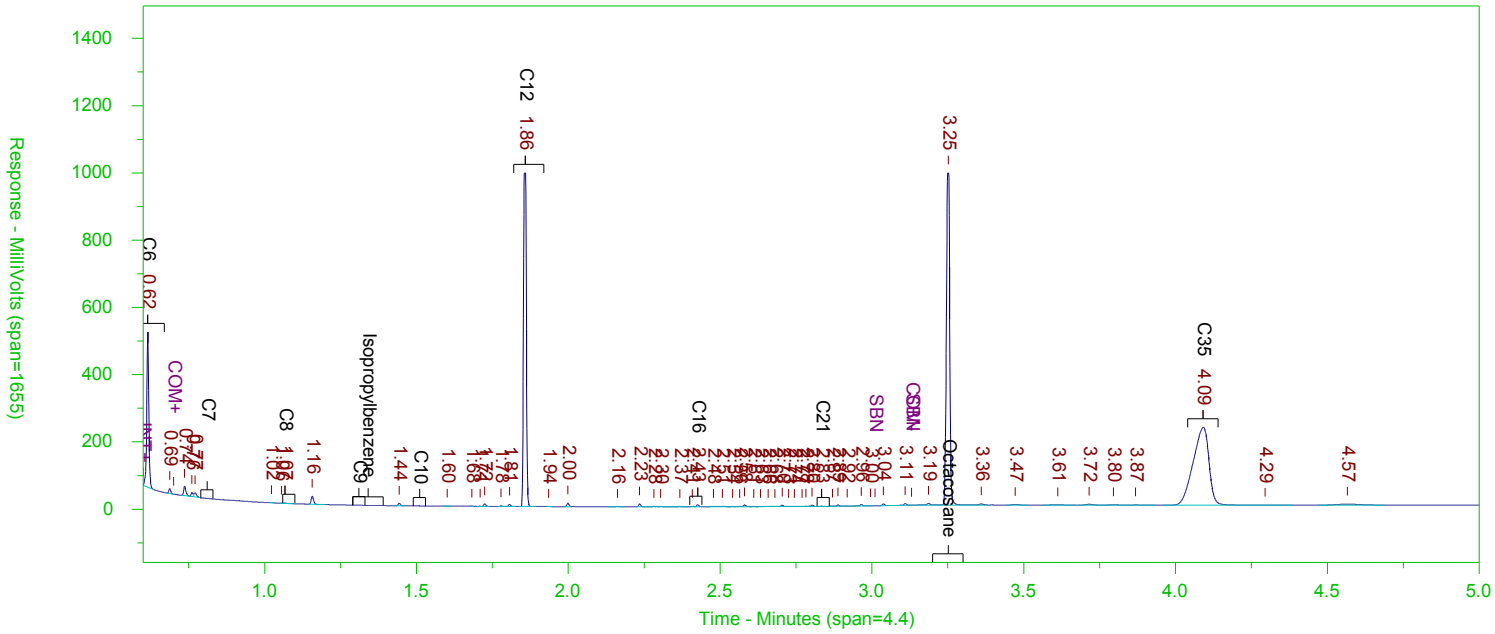
Average CF fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9963015 |
| Average error: | 3.454% |
| Average CF: | 6762.926 |
| RSD: | 4.331% |

| Level | Amount | Response | Cal Factor | Error, % | Source | Date and time |
|---|---|---|---|---|---|---|
| 1 | 5 | 34889 | 6977.8 | 3.177 | Manual | 9/1/2017 8:49:16 AM |
| 2 | 10 | 71321 | 7132.1 | 5.459 | Manual | 9/1/2017 8:49:51 AM |
| 3 | 25 | 161198 | 6447.92 | -4.658 | Manual | 9/1/2017 8:49:33 AM |
| 4 | 40 | 269638 | 6740.95 | -0.325 | Manual | 9/1/2017 8:50:05 AM |
| 5 | 50 | 325793 | 6515.86 | -3.653 | Manual | 9/7/2017 10:06:35 AM |

File Name = C:\CPData\GC15\170831.SEQ
File Date = 9/5/2017 12:34:07 PM

| Raw File Name | Method File Nam | Sample Name | Dilution |
|---|---|---|---|
| GC15_170831.001.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170831.002.raw | GC15_TX1005.M | TUNEMARKER | 1.00 |
| GC15_170831.003.raw | GC15_TX1005.M | ICV ICV-170831 | 1.00 |
| GC15_170831.004.raw | GC15_TX1005.M | ICV ICV-170831 | 1.00 |
| GC15_170831.005.raw | GC15_TX1005.M | LCS LCS-82179 | 1.00 |
| GC15_170831.006.raw | GC15_TX1005.M | LCSDLCSD-82179 | 1.00 |
| GC15_170831.007.raw | GC15_TX1005.M | MBLKMB-82179 | 1.00 |
| GC15_170831.008.raw | GC15_TX1005.M | SAMP1708244-01B | 1.00 |
| GC15_170831.009.raw | GC15_TX1005.M | SAMP1708250-01A | 1.00 |
| GC15_170831.010.raw | GC15_TX1005.M | MS 1708250-01AMS | 1.00 |
| GC15_170831.011.raw | GC15_TX1005.M | MSD 1708250-01AMSD | 1.00 |
| GC15_170831.012.raw | GC15_TX1005.M | SAMP1708250-02A | 1.00 |
| GC15_170831.013.raw | GC15_TX1005.M | SAMP1708272-01B | 1.00 |
| GC15_170831.014.raw | GC15_TX1005.M | SAMP1708272-02B | 1.00 |
| GC15_170831.015.raw | GC15_TX1005.M | SAMP1708272-03B | 1.00 |
| GC15_170831.016.raw | GC15_TX1005.M | SAMP1708272-04B | 1.00 |
| GC15_170831.017.raw | GC15_TX1005.M | SAMP1708272-05B | 1.00 |
| GC15_170831.018.raw | GC15_TX1005.M | SAMP1708272-06B | 1.00 |
| GC15_170831.019.raw | GC15_TX1005.M | SAMP1708272-07B | 1.00 |
| GC15_170831.020.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170831.021.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170831.022.raw | GC15_TX1005.M | SAMP1708272-05B | 1.00 |
| GC15_170831.023.raw | GC15_TX1005.M | SAMP1708272-05B | 1.00 |
| GC15_170831.024.raw | GC15_TX1005.M | SAMP1708272-06B | 1.00 |
| GC15_170831.025.raw | GC15_TX1005.M | CCV CCV1-170831 | 1.00 |
| GC15_170831.026.raw | GC15_TX1005.M | CCV CCV1-170831 | 1.00 |
| GC15_170831.027.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170831.028.raw | GC15_TX1005.M | CCV CCV1-170831 | 1.00 |
| GC15_170831.029.raw | GC15_TX1005.M | ICV ICV2-170831 | 1.00 |
| GC15_170831.030.raw | GC15_TX1005.M | ICV ICV2-170831 | 1.00 |
| GC15_170831.031.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170831.032.raw | GC15_TX1005.M | SAMP1708272-02B | 1.00 |
| GC15_170831.033.raw | GC15_TX1005.M | SURROGATETEST | 1.00 |
| GC15_170831.034.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_170831.035.raw | GC15_TX1005.M | CAL CAL1-170831 | 1.00 |
| GC15_170831.036.raw | GC15_TX1005.M | CAL CAL2-170831 | 1.00 |
| GC15_170831.037.raw | GC15_TX1005.M | CAL CAL3-170831 | 1.00 |
| GC15_170831.038.raw | GC15_TX1005.M | CAL CAL4-170831 | 1.00 |
| GC15_170831.039.raw | GC15_TX1005.M | CAL CAL5-170831 | 1.00 |
| GC15_170831.040.raw | GC15_TX1005.M | ICV SSCV-170831 | 1.00 |



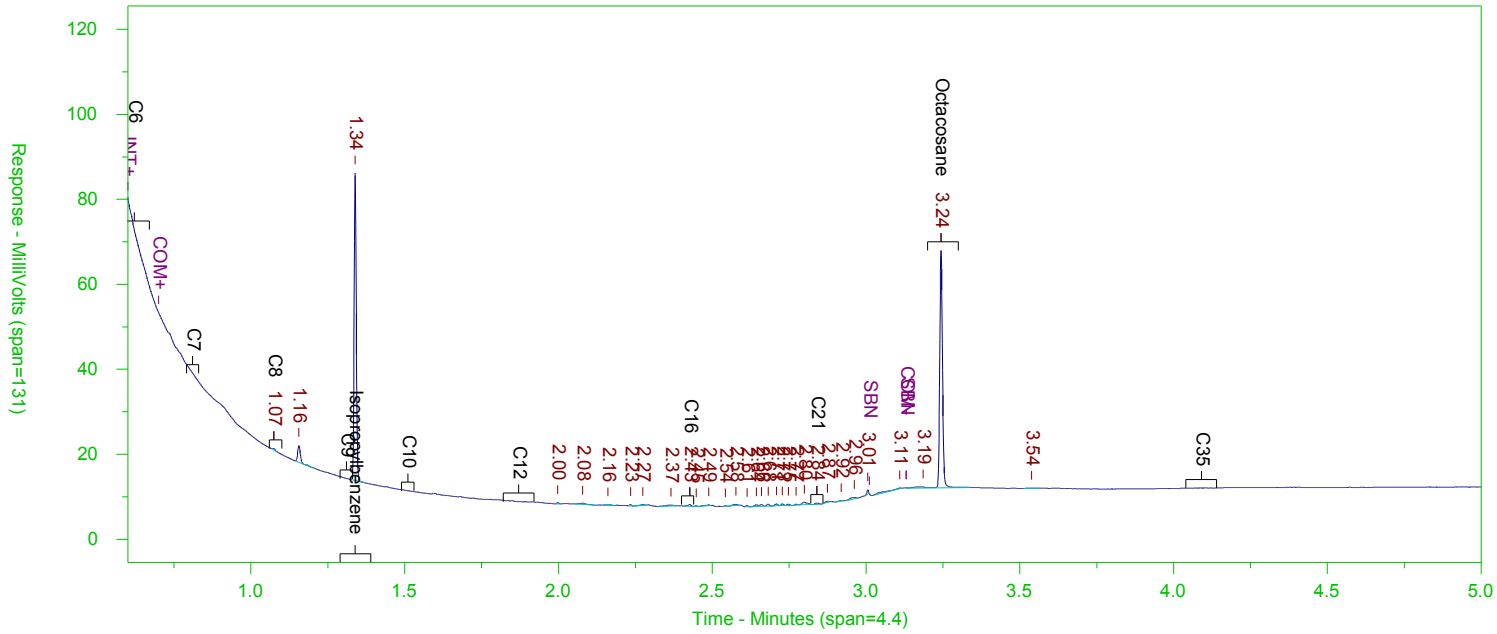

Sample Name: TUNEMARKER
Date of Analyses: 8/31/2017 9:08:55 AM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170831.002.RAW
Calibration File: GC15_150930.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.615 | C6 | 213255 | 1407.07900 |
| 1.067 | C8 | 325 | 0.00000 |
| 1.859 | C12 | 653732 | 174698.80000 |
| 2.426 | C16 | 2838 | 3687.80700 |
| 2.835 | C21 | 463 | 270.31870 |
| 3.252 | Octacosane | 755996 | 145.51280 |
| 4.091 | C35 | 840553 | 259867.00000 |

REVIEWED BY
By Janice Whitt at 2:29:01 PM, 8/31/2017

Total Area - Surr: 1848022
C6-C12 Area: 925401 >C12-C28 Area: 46357 >C28-C35 Area: 876262 C6-C35 Area: 1848022
C35/C28 ratio: 111.1848 % >75%
I.S. (DILN FACTOR) : 1
R$:C6-C12 231.9882
R$:>C12-C28 11.6214
R$:>C28-C35 219.6698
R$:C6-C35 463.2794
R$:Isopropbenz 0
R$:Octacosane 145.5128

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |



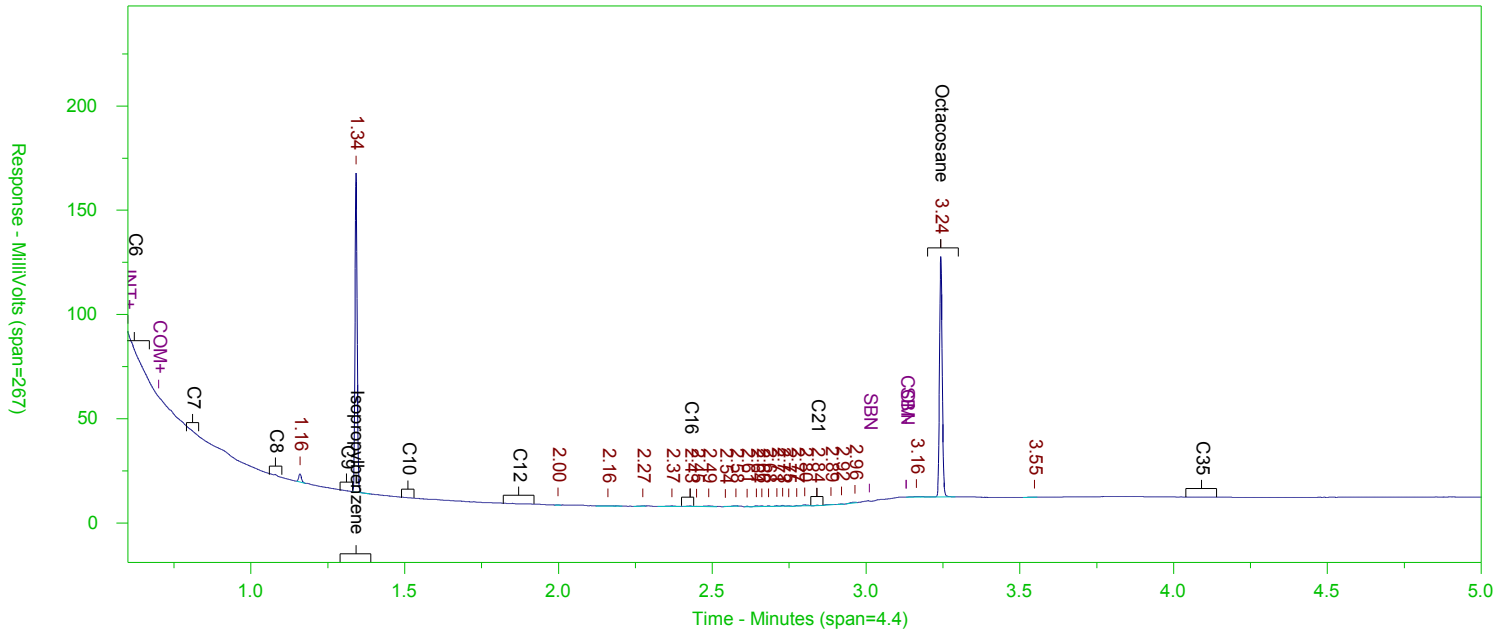

Sample Name: CAL CAL1-170831
Date of Analyses: 8/31/2017 5:24:19 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170831.035.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.075 | C8 | 156 | 0.00000 |
| 1.339 | Isopropylbenzene | 35078 | 5.05130 |
| 2.427 | C16 | 316 | 411.18090 |
| 2.840 | C21 | 251 | 146.43050 |
| 3.244 | Octacosane | 34889 | 5.19666 |

Total Area - Surr: 10854.7
C6-C12 Area: 2580 >C12-C28 Area: 8181 >C28-C35 Area: 93 C6-C35 Area: 10854.7
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.6469099
R$:>C12-C28 2.050935
R$:>C28-C35 0.02331502
R$:C6-C35 2.721159
R$:Isopropbenz 5.051299 **101.03%**
R$:Octacosane 5.196662 **103.93%**

***REVIEWED/APPROVED***
*By Sherri Herschmann at 1:28:24 PM, 9/7/2017*

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

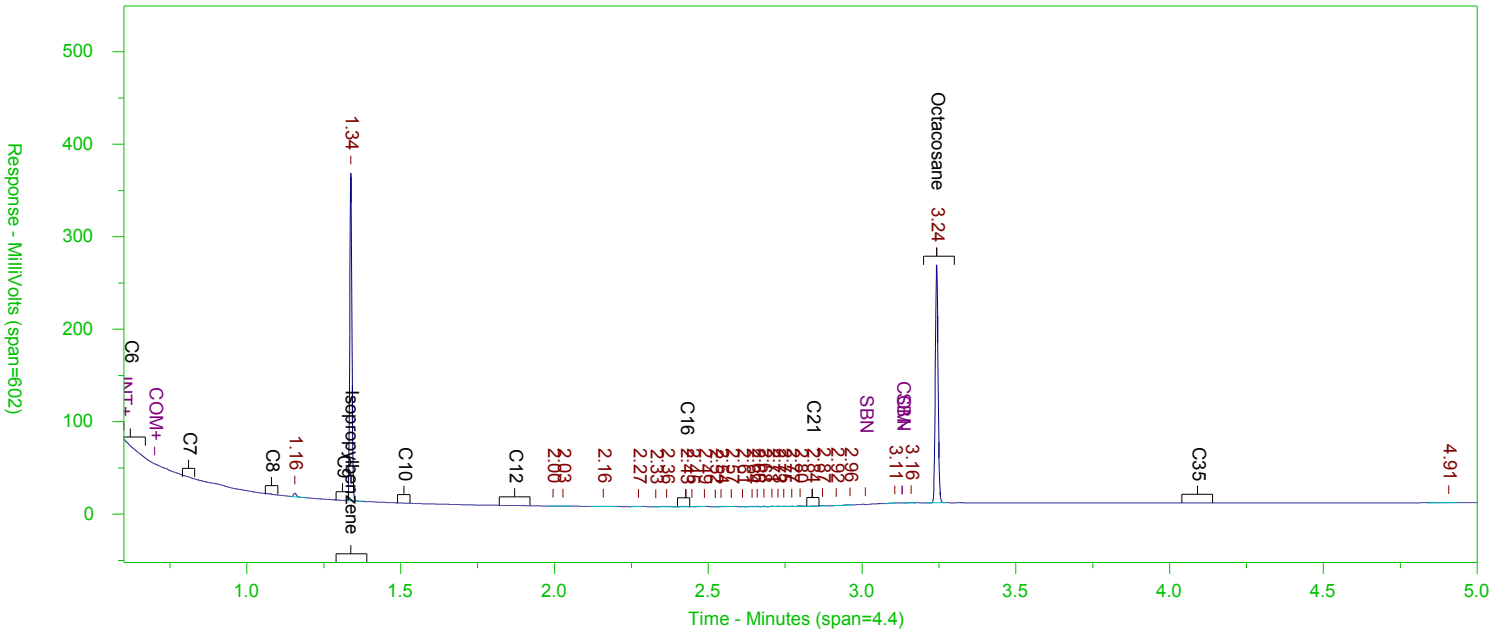



Sample Name: CAL CAL2-170831
Date of Analyses: 8/31/2017 5:33:17 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170831.036.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.342 | Isopropylbenzene | 73637 | 10.60404 |
| 2.428 | C16 | 249 | 323.85880 |
| 2.840 | C21 | 207 | 120.86630 |
| 3.243 | Octacosane | 71321 | 10.62316 |

Total Area - Surr: 9461.516
C6-C12 Area: 2382 >C12-C28 Area: 7019 >C28-C35 Area: 59 C6-C35 Area: 9461.516
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.597195
R$:>C12-C28 1.759701
R$:>C28-C35 0.01500638
R$:C6-C35 2.371902
R$:Isopropbenz 10.60404
R$:Octacosane 10.62316

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

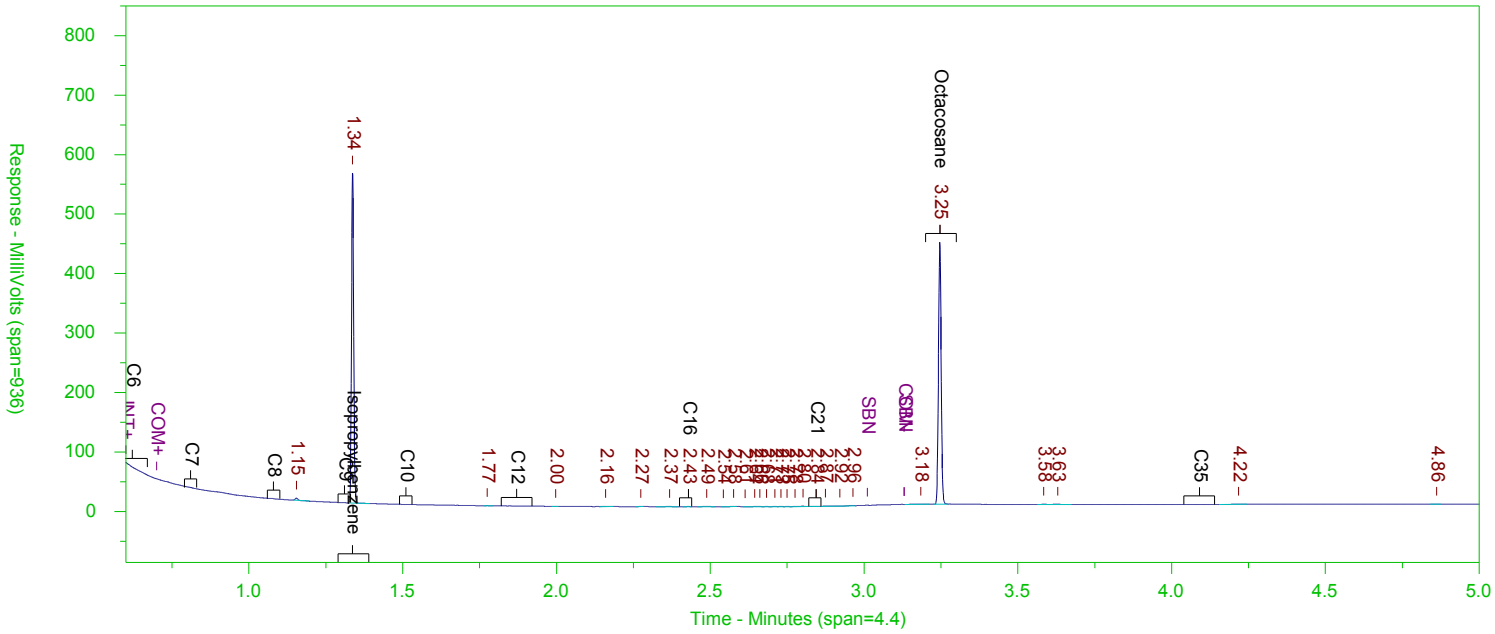



Sample Name: CAL CAL3-170831
Date of Analyses: 8/31/2017 5:42:16 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170831.037.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.338 | Isopropylbenzene | 171302 | 24.66811 |
| 2.427 | C16 | 442 | 574.76370 |
| 2.838 | C21 | 259 | 151.18850 |
| 3.243 | Octacosane | 161198 | 24.01035 |

Total Area - Surr: 10928.7
C6-C12 Area: 2470 >C12-C28 Area: 8261 >C28-C35 Area: 195 C6-C35 Area: 10928.7
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.6194339
R$:>C12-C28 2.071184
R$:>C28-C35 0.04909486
R$:C6-C35 2.73971
R$:Isopropbenz 24.66811
R$:Octacosane 24.01035

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

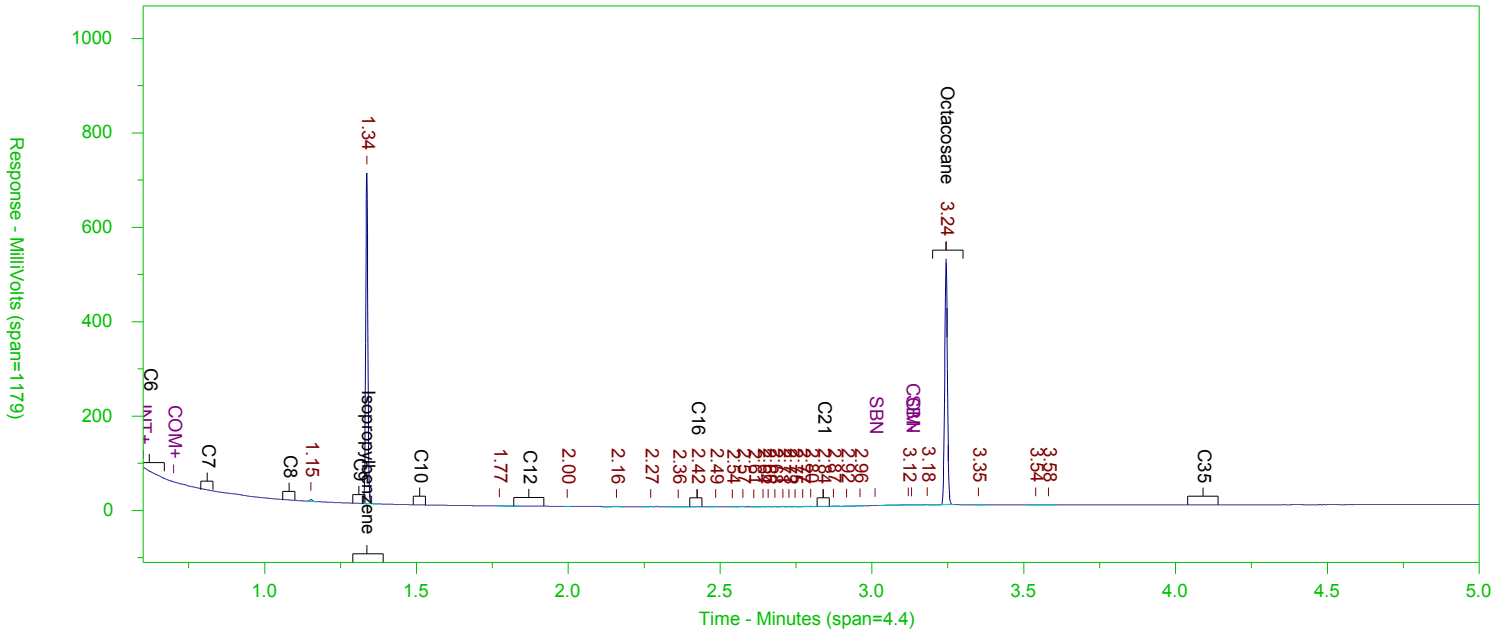



Sample Name: CAL CAL4-170831
Date of Analyses: 8/31/2017 5:51:14 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170831.038.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.337 | Isopropylbenzene | 272876 | 39.29506 |
| 2.429 | C16 | 226 | 294.07160 |
| 2.844 | C21 | 217 | 126.48250 |
| 3.246 | Octacosane | 269638 | 40.16234 |

Total Area - Surr: 10466.41
C6-C12 Area: 2592 >C12-C28 Area: 7301 >C28-C35 Area: 572 C6-C35 Area: 10466.41
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.6498809
R$:>C12-C28 1.830495
R$:>C28-C35 0.1434323
R$:C6-C35 2.623817
R$:Isopropbenz 39.29506
R$:Octacosane 40.16234

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

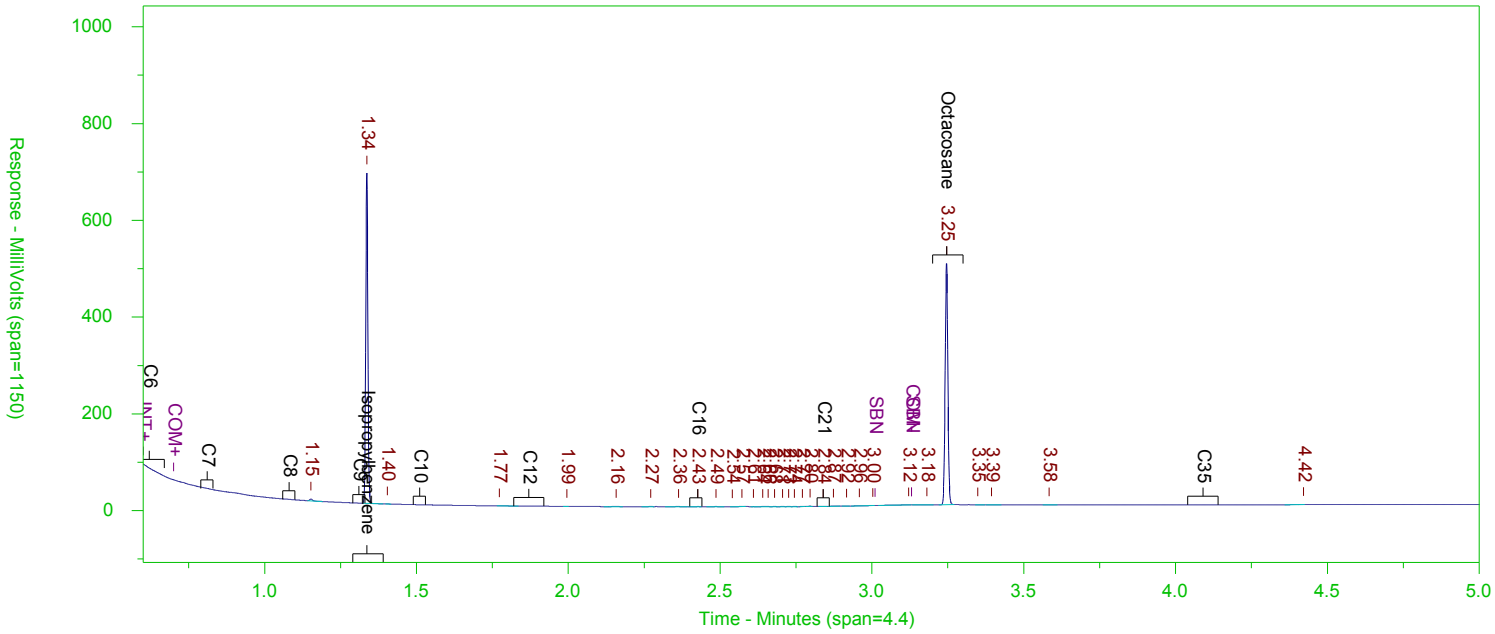



Sample Name: CAL CAL5-170831
Date of Analyses: 8/31/2017 6:00:13 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170831.039.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.336 | Isopropylbenzene | 342080 | 49.26068 |
| 2.425 | C16 | 400 | 519.76250 |
| 2.840 | C21 | 247 | 143.94120 |
| 3.244 | Octacosane | 325793 | 48.52665 |

Total Area - Surr: 12499.59
C6-C12 Area: 2724 >C12-C28 Area: 9294 >C28-C35 Area: 480 C6-C35 Area: 12499.59
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.6830894
R$:>C12-C28 2.330064
R$:>C28-C35 0.1203617
R$:C6-C35 3.133516
R$:Isopropbenz 49.26068
R$:Octacosane 48.52665

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |




Sample Name: ICV SSCV-170831
Date of Analyses: 8/31/2017 6:09:11 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_170831.040.RAW
Calibration File: GC15_170831.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.336 | Isopropylbenzene | 333407 | 47.77304 |
| 2.427 | C16 | 468 | 608.57480 |
| 2.840 | C21 | 285 | 166.38750 |
| 3.246 | Octacosane | 313486 | 46.35358 |

Total Area - Surr: 13694.56
C6-C12 Area: 2973 >C12-C28 Area: 10289 >C28-C35 Area: 432 C6-C35 Area: 13694.56
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 0.7452996
R$:>C12-C28 2.579445
R$:>C28-C35 0.1083409
R$:C6-C35 3.433082
R$:Isopropbenz 47.77304 **95.55%**
R$:Octacosane 46.35358 **92.71%**

| Slice | Start Time | Stop Time |
|---|---|---|
| C6-C12 | 0.6 | 1.95 |
| >C12-C28 | 1.95 | 3.29 |
| >C28-C35 | 3.29 | 5 |

***REVIEWED/APPROVED***
*By Sherri Herschmann at 1:40:53 PM, 9/7/2017*

CAL ID: 588

# Method TX1005/TX1006 Calibration Curve Sheet

**Instrument ID:** GC # 15 **Calibration File Name:** GC15_150918.CAL

| Surrogate Target Concentration | µL of 10,000 ppm Surrogate | Final Volume mL |
|---|---|---|
| 5 ppm | 5 | 10 |
| 10 ppm | 1 | 1 |
| 25 ppm | 2.5 | 1 |
| 40 ppm | 4 | 1 |
| 50 ppm | 5 | 1 |
| SSCV 50 ppm | 5 | 1 |

| TPH-Diesel Target Concentration | µL of 50,000 ppm Target Standard | Final Volume mL |
|---|---|---|
| 20 ppm | 4 | 10 |
| 100 ppm | 2 | 1 |
| 500 ppm | 10 | 1 |
| 1000 ppm | 20 | 1 |
| 2500 ppm | 50 | 1 |
| SSCV 1000 ppm | 20 | 1 |

## Standards Used for the Calibration Curve

| Cal Standard | DHL Standard ID (LIMS): |
|---|---|
| CAL/LCS/MS/MSD | TX150826 |
| SSCV | TX150123S |
| SURROGATE | SUR150821 |

| Review Item | Acceptance Criteria | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|---|
| 1. Are all standards within expiration dates? | TX1005 Stds – 6 months<br>TX1005 Surr – 6 months<br>TX1005 Stock Stds - 1 yr | X | | | |
| 2. Are all manual integrations listed on MI tracking form? **(DoD projects only)** | Manual Integration Tracking Form | | | X | |
| 3. Does the ICAL curve meet criteria? Use average CF only if %RSD < 25% | %RSD < 25%<br>COD ≥ 0.990 | X | | | |
| 4. Has the low point been reprocessed under the new ICAL curve and meets criteria? | 70-130% recovery | X | | | |
| 5. Has the SSCV been analyzed and meets criteria? | 75-125% recovery | X | | | |

Analyst: Lynette Mercado Date: 9/18/2015

Second-Level Review: [signature] Date: 09/18/2015

**DHL Analytical, Inc.**

**Run ID:** GC15_150918A **Run No.:** 81788

**Analytical Run Date:** 9/18/2015 **InstrumentID:** GC15

**Analyst:** Lynette Mercado **Column:**

**Calibration ID:** 588 **Column ID:**

**Column Length:**

| SampID | DF | TestCode | SampType | Batch ID | Analysis Date/Time | Q | Comments |
|---|---|---|---|---|---|---|---|
| MARKER | 1 | 1005_W | TUNE | R81788 | 9/18/2015 9:54:26 AM | | |
| 1 20 PPM | 1 | 1005_W | CAL | R81788 | 9/18/2015 12:01:34 PM | | |
| 2 100 PPM | 1 | 1005_W | CAL | R81788 | 9/18/2015 12:10:32 PM | | |
| 3 500 PPM | 1 | 1005_W | CAL | R81788 | 9/18/2015 12:19:31 PM | | |
| 4 1000 PPM | 1 | 1005_W | CAL | R81788 | 9/18/2015 12:28:29 PM | | |
| 5 2500 PPM | 1 | 1005_W | CAL | R81788 | 9/18/2015 12:37:26 PM | | |
| SSCV1000 PPM | 1 | 1005_W | ICV | R81788 | 9/18/2015 1:48:02 PM | | |

| Std ID | Std Name | Type | Exp. Date |
|---|---|---|---|
| SUR150821 | TX 1005/1006 SURROGATE | | 11/19/2015 |
| TX150123S | TX 1005/1006 50,000 PPM Seco | | 01/23/2016 |
| TX150526 | TX 1005/1006 C6C12C28C35 MA | | 05/24/2016 |
| TX150826 | TX 1005/1006 50,000 PPM SPIK | | 11/24/2015 |

***REVIEWED/APPROVED***

*By Sherri Herschmann at 2:21:04 PM, 9/18/2015*

File Name = C:\CPData\GC15\150918.SEQ
File Date = 9/18/2015 1:42:07 PM

| Raw File Name | Method File Nam | Sample Name | Dilution |
|---|---|---|---|
| GC15_150918.001.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_150918.002.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_150918.003.raw | GC15_TX1005.M | TUNEMARKER | 1.00 |
| GC15_150918.004.raw | GC15_TX1005.M | ICV ICV-150918 | 1.00 |
| GC15_150918.005.raw | GC15_TX1005.M | MBLKMB-71480 | 1.00 |
| GC15_150918.006.raw | GC15_TX1005.M | LCS LCS-71480 | 1.00 |
| GC15_150918.007.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_150918.008.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_150918.009.raw | GC15_TX1005.M | MBLKMB-71480 | 1.00 |
| GC15_150918.010.raw | GC15_TX1005.M | BLANK | 1.00 |
| GC15_150918.011.raw | GC15_TX1005.M | CAL 1 20 PPM | 1.00 |
| GC15_150918.012.raw | GC15_TX1005.M | CAL 2 100 PPM | 1.00 |
| GC15_150918.013.raw | GC15_TX1005.M | CAL 3 500 PPM | 1.00 |
| GC15_150918.014.raw | GC15_TX1005.M | CAL 4 1000 PPM | 1.00 |
| GC15_150918.015.raw | GC15_TX1005.M | CAL 5 2500 PPM | 1.00 |
| GC15_150918.016.raw | GC15_TX1005.M | ICV SSCV1000 PPM | 1.00 |

File Name: C:\CPdata\Methods\TX1005\GC15_150918.CAL
Version: 4

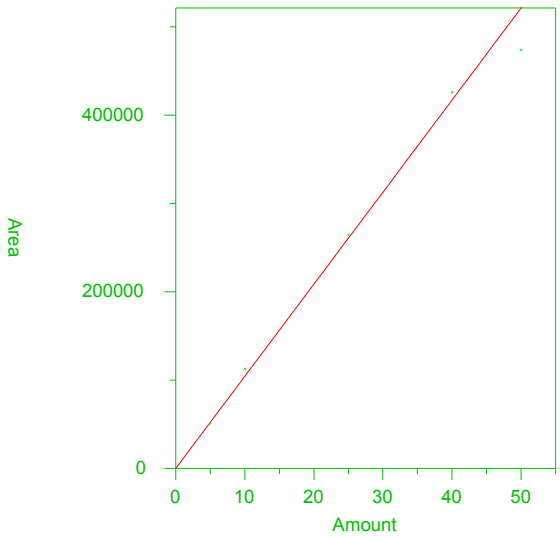
Creator:
Description:
Reason for change:

External standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 0
Reference peak area reject threshold: 0
Amount units:
No default component

Method of calculating data point averages: Equal weight for all updates
No calibration update report

All levels are normal data points.

5 Isopropylbenzene **USE ICAL FROM GC15_170831.CAL**




Expected retention time: 1.39 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

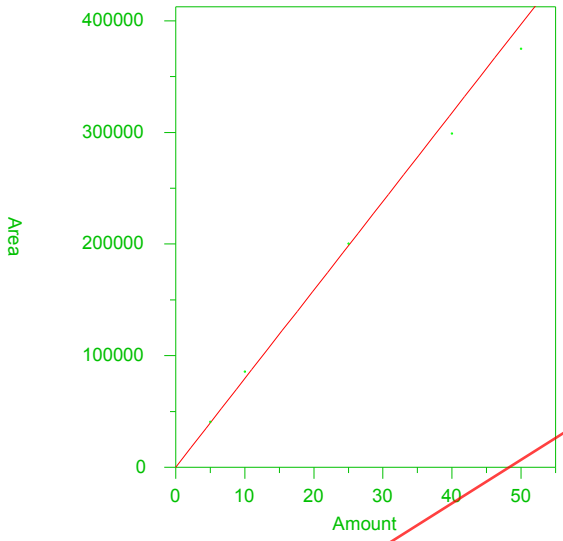
Y = 10430.68 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9826652
Average error: 4.462%
Average CF: 10430.68
RSD: 6.172%

| Level | Amount | Response | Cal Factor | Error, % | Source | Date and time |
|---|---|---|---|---|---|---|
| 1 | 5 | 51080 | 10216 | -2.058 | Manual | 9/18/2015 1:29:33 PM |
| 2 | 10 | 112329 | 11232.9 | 7.691 | Manual | 9/18/2015 1:30:43 PM |
| 3 | 25 | 264382 | 10575.28 | 1.386 | Manual | 9/18/2015 1:31:25 PM |
| 4 | 40 | 425892 | 10647.3 | 2.077 | Manual | 9/18/2015 1:31:59 PM |
| 5 | 50 | 474097 | 9481.94 | -9.096 | Manual | 9/18/2015 1:32:32 PM |

10 Octacosane

**USE ICAL FROM GC15_170831.CAL**




Expected retention time: 3.37 minutes
Search window: 0.05 minutes
No retention time reference component
No response proxy component
Group number: 0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

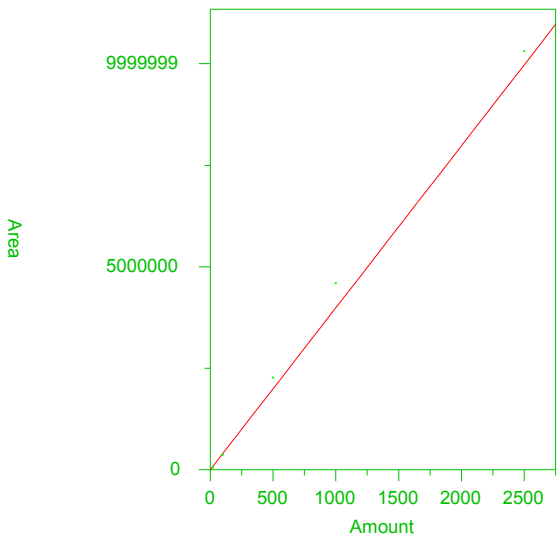
Single peak quantification by area

Y = 7941.3 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9888932
Average error: 4.567%
Average CF: 7941.3
RSD: 5.801%

| Level | Amount | Response | Cal Factor | Error, % | Source | Date and time |
|---|---|---|---|---|---|---|
| 1 | 5 | 40717 | 8143.4 | 2.545 | Manual | 9/18/2015 1:29:51 PM |
| 2 | 10 | 85660 | 8566 | 7.866 | Manual | 9/18/2015 1:30:50 PM |
| 3 | 25 | 200531 | 8021.24 | 1.007 | Manual | 9/18/2015 1:31:33 PM |
| 4 | 40 | 298964 | 7474.1 | -5.883 | Manual | 9/18/2015 1:32:07 PM |
| 5 | 50 | 375088 | 7501.76 | -5.535 | Manual | 9/18/2015 1:32:41 PM |

12 tph




Expected retention time: 99.99 minutes
Search window: 0.12 minutes
No retention time reference component
No response proxy component
Group number: 0

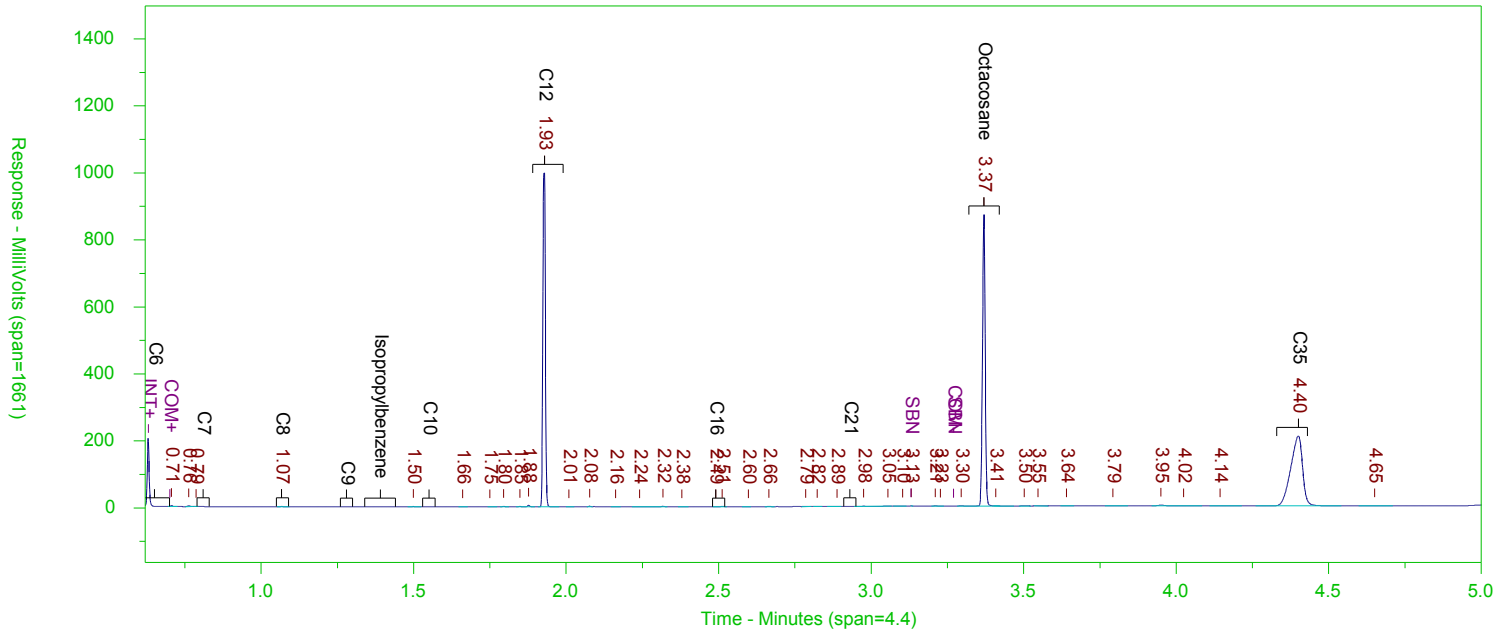
High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 3988.954 X + 0

Average CF fit with equal weighting, forced to origin
Coefficient of determination: 0.9920767
Average error: 12.992%
Average CF: 3988.954
RSD: 16.955%

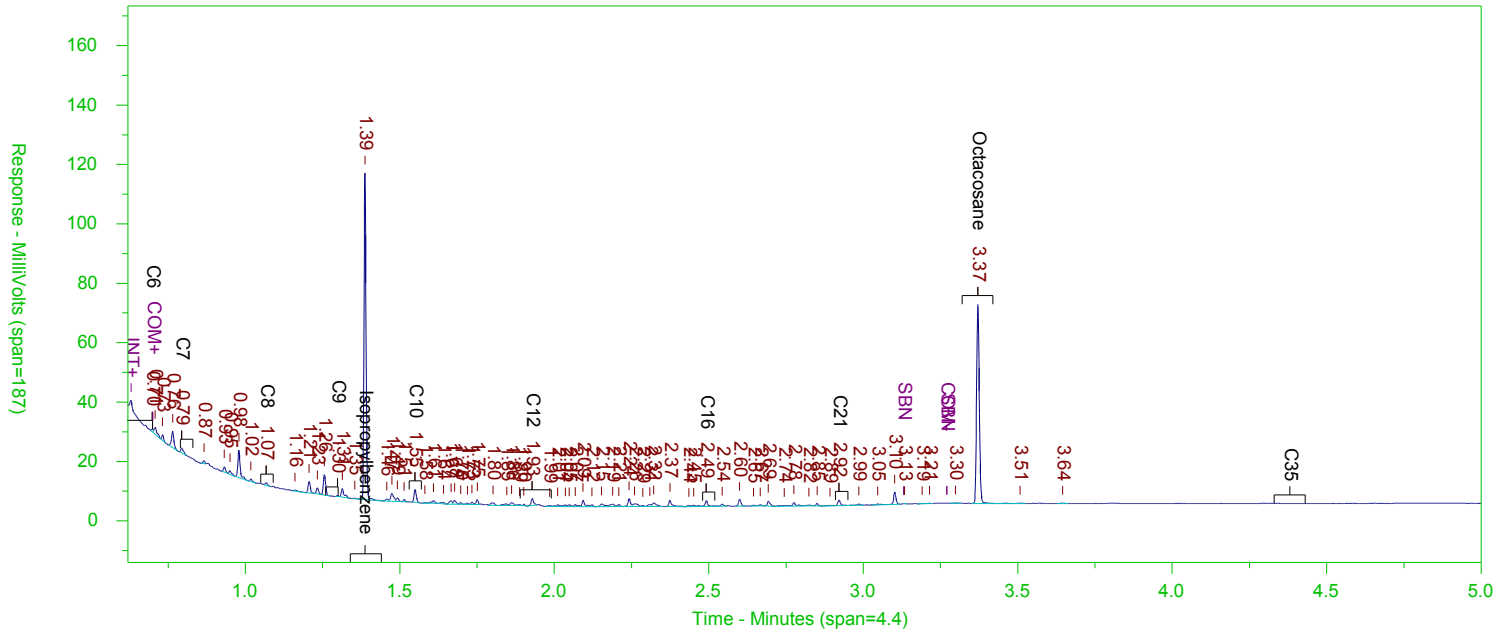
| Level | Amount | Response | Cal Factor | Error, % | Source | Date and time |
|---|---|---|---|---|---|---|
| 1 | 20 | 59104 | 2955.2 | -25.915 | Manual | 9/18/2015 1:30:10 PM |
| 2 | 100 | 372705 | 3727.05 | -6.566 | Manual | 9/18/2015 1:31:01 PM |
| 3 | 500 | 2271360 | 4542.72 | 13.882 | Manual | 9/18/2015 1:31:42 PM |
| 4 | 1000 | 4594987 | 4594.987 | 15.193 | Manual | 9/18/2015 1:32:18 PM |
| 5 | 2500 | 1.031203E+07 | 4124.812 | 3.406 | Manual | 9/18/2015 1:33:38 PM |




Sample Name: TUNEMARKER
Date of Analyses: 9/18/2015 9:54:26 AM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.003.RAW
Calibration File: GC15_150323.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 1.067 | C8 | 363 | 0.00000 |
| 1.929 | C12 | 588701 | 157320.20000 |
| 2.490 | C16 | 109 | 141.41680 |
| 3.370 | Octacosane | 538283 | 99.91118 |
| 4.401 | C35 | 562271 | 173832.80000 |

Total Area - Surr: 1171997
C6-C12 Area: 595677 >C12-C28 Area: 6627 >C28-C35 Area: 569691 C6-C35 Area: 1171997
C35/C28 ratio: 104.4563 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 144.9866
R$:>C12-C28 1.613119
R$:>C28-C35 138.6618
R$:C6-C35 285.2615
R$:Isopropbenz 0
R$:Octacosane 99.91118

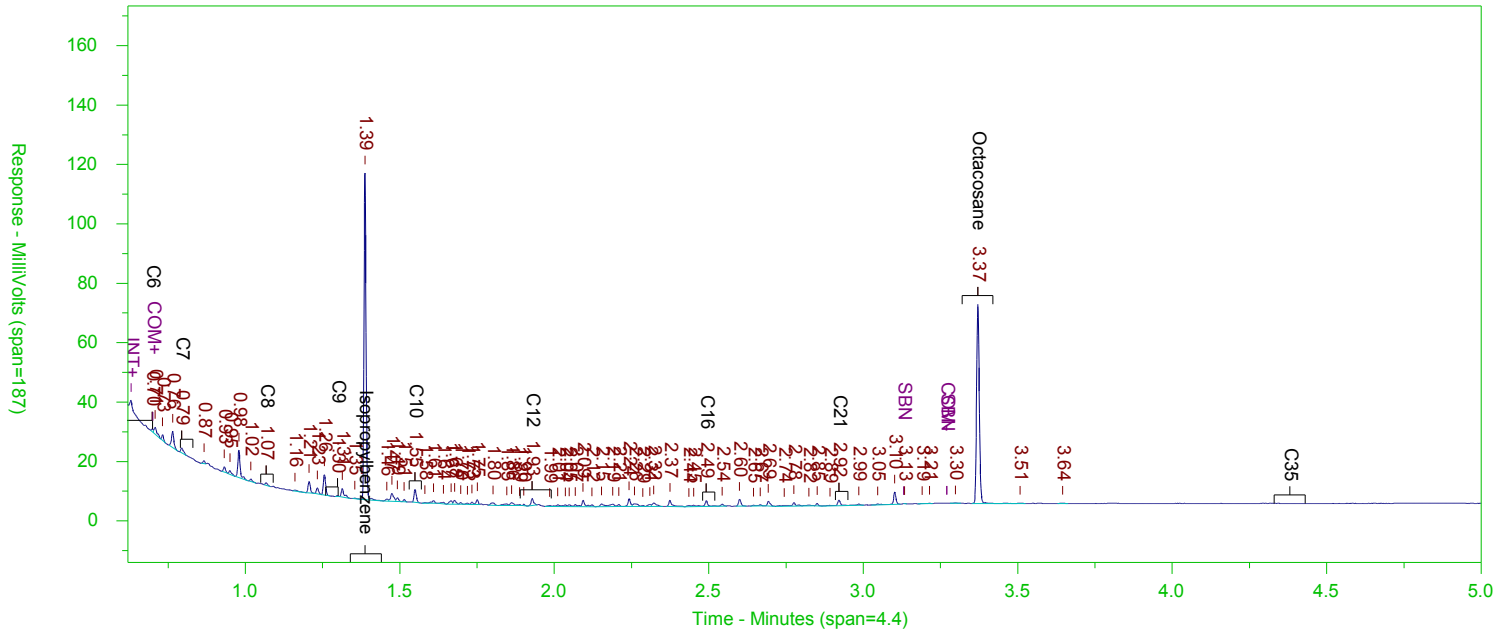



Sample Name: CAL 1 20 PPM
Date of Analyses: 9/18/2015 12:01:34 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.011.RAW
Calibration File: GC15_150323.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.699 | C6 | 338 | -13.00544 |
| 0.794 | C7 | 933 | 160.65310 |
| 1.067 | C8 | 428 | 0.00000 |
| 1.298 | C9 | 141 | 19.27821 |
| 1.387 | Isopropylbenzene | 51080 | 6.83323 |
| 1.549 | C10 | 2278 | -86.42103 |
| 1.929 | C12 | 1392 | 372.02730 |
| 2.492 | C16 | 1127 | 1464.02600 |
| 2.921 | C21 | 1108 | 646.98630 |
| 3.371 | Octacosane | 40717 | 7.55746 |

Total Area - Surr: 59104.5
C6-C12 Area: 37059 >C12-C28 Area: 21873 >C28-C35 Area: 171 C6-C35 Area: 59104.5
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 9.020256
R$:>C12-C28 5.323877
R$:>C28-C35 0.0417745
R$:C6-C35 14.38591
R$:Isopropbenz 6.833226
R$:Octacosane 7.557455

DNR- before reprocessing




Sample Name: CAL 1 20 PPM
Date of Analyses: 9/18/2015 12:01:34 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.011.RAW
Calibration File: GC15_150918.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

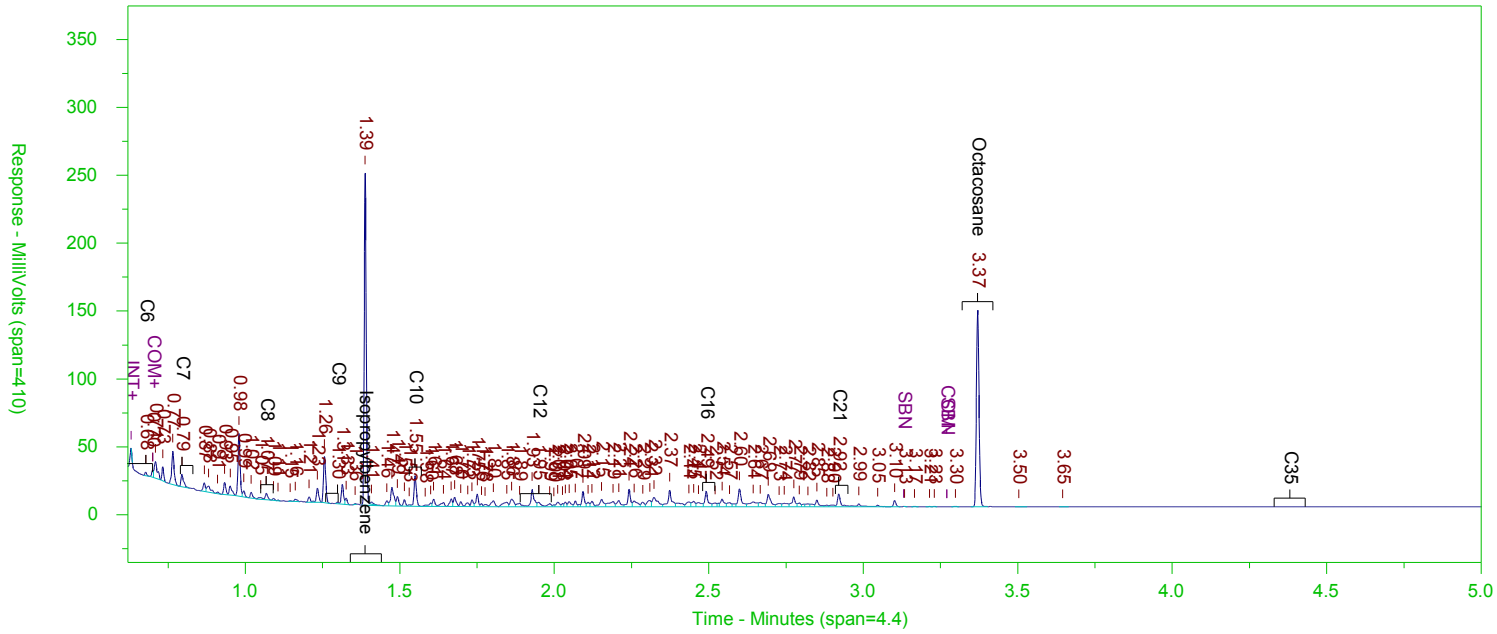
| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.699 | C6 | 338 | -13.00544 |
| 0.794 | C7 | 933 | 160.65310 |
| 1.067 | C8 | 428 | 0.00000 |
| 1.298 | C9 | 141 | 19.27821 |
| 1.387 | Isopropylbenzene | 51080 | 4.89705 |
| 1.549 | C10 | 2278 | -86.42103 |
| 1.929 | C12 | 1392 | 372.02730 |
| 2.492 | C16 | 1127 | 1464.02600 |
| 2.921 | C21 | 1108 | 646.98630 |
| 3.371 | Octacosane | 40717 | 5.12721 |

Total Area - Surr: 59104.5
C6-C12 Area: 37059 >C12-C28 Area: 21873 >C28-C35 Area: 171 C6-C35 Area: 59104.5
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 9.29048
R$:>C12-C28 5.483366
R$:>C28-C35 0.04302595
R$:C6-C35 14.81687 **74%**
R$:Isopropbenz 4.89705
R$:Octacosane 5.127207

Reprocessed; within 30%

***REVIEWED/APPROVED***

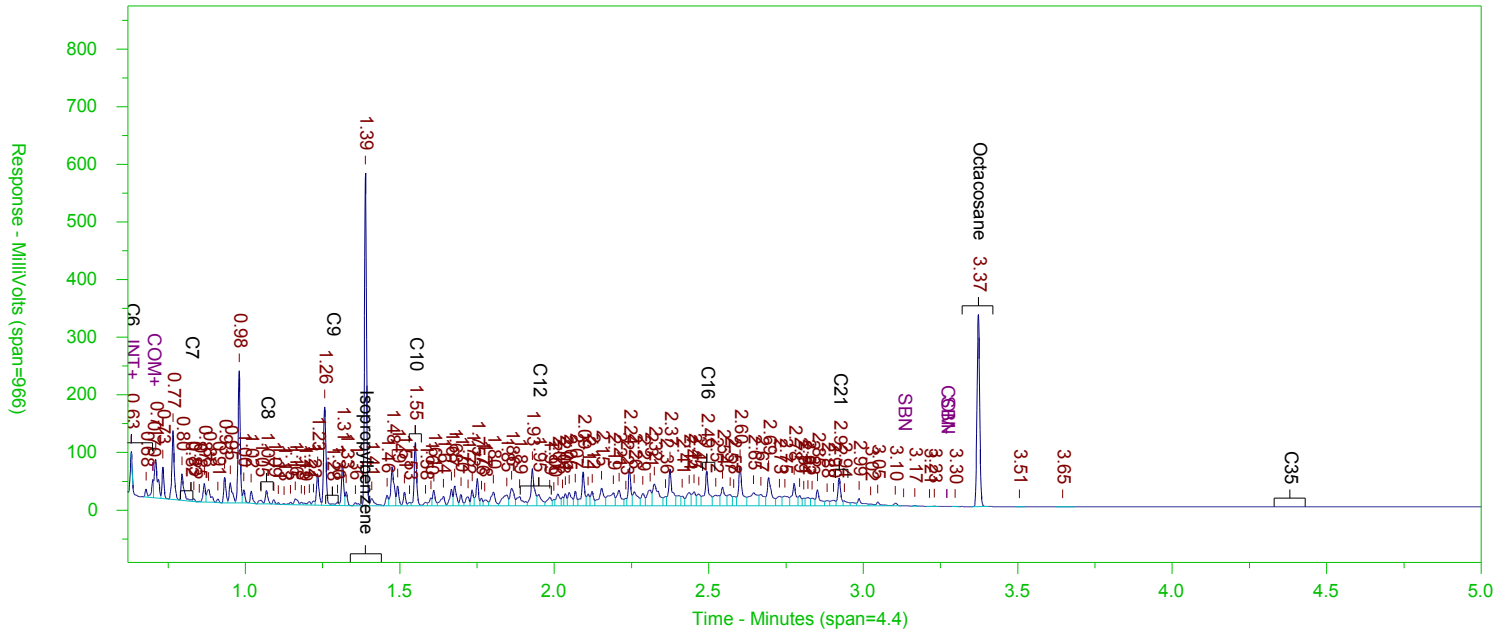
*By Sherri Herschmann at 2:23:42 PM, 9/18/2015*




Sample Name: CAL 2 100 PPM
Date of Analyses: 9/18/2015 12:10:32 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.012.RAW
Calibration File: GC15_150323.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.677 | C6 | 902 | -9.24125 |
| 0.795 | C7 | 5453 | 939.34740 |
| 1.068 | C8 | 2628 | 0.00000 |
| 1.298 | C9 | 593 | 81.13395 |
| 1.388 | Isopropylbenzene | 112329 | 15.02697 |
| 1.549 | C10 | 12278 | 697.86050 |
| 1.949 | C12 | 2658 | 710.26980 |
| 2.492 | C16 | 8186 | 10636.33000 |
| 2.921 | C21 | 6676 | 3897.94500 |
| 3.370 | Octacosane | 85660 | 15.89942 |

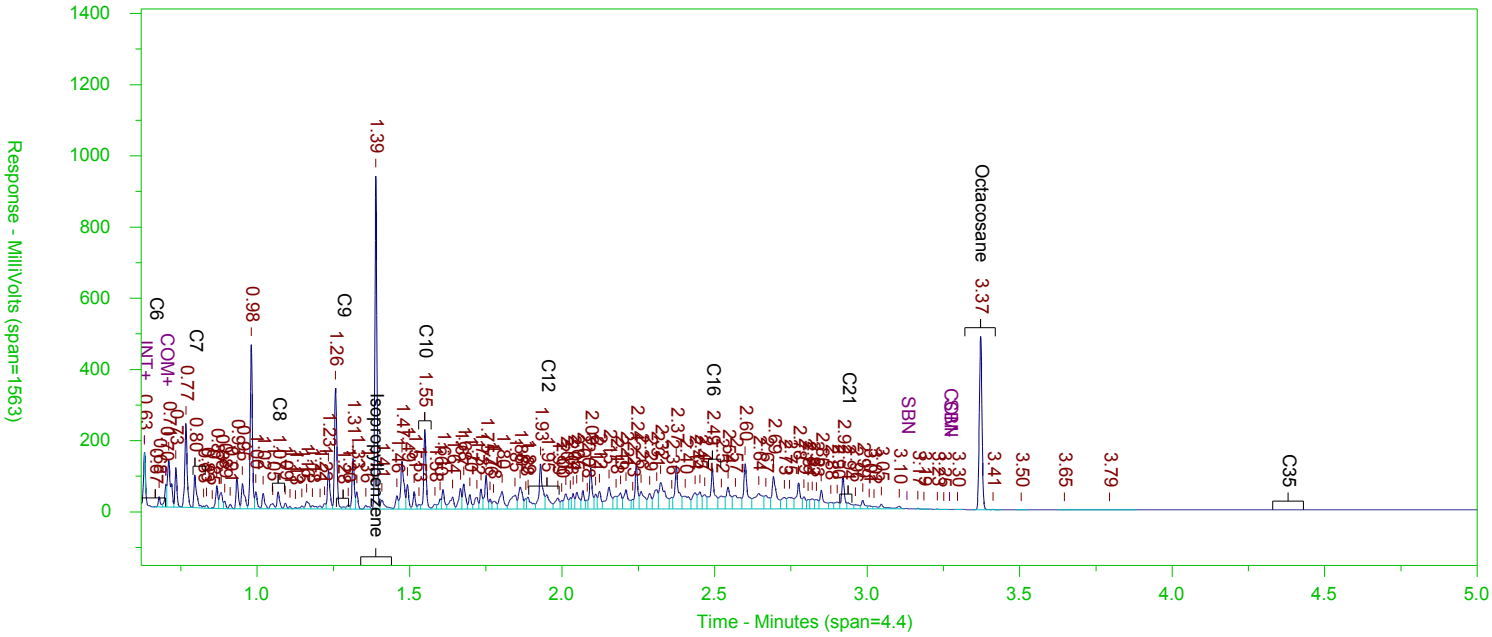
Total Area - Surr: 372705.5
C6-C12 Area: 208764 >C12-C28 Area: 163759 >C28-C35 Area: 181 C6-C35 Area: 372705.5
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 50.81287
R$:>C12-C28 39.85876
R$:>C28-C35 0.04408733
R$:C6-C35 90.71572
R$:Isopropbenz 15.02697
R$:Octacosane 15.89942




Sample Name: CAL 3 500 PPM
Date of Analyses: 9/18/2015 12:19:31 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.013.RAW
Calibration File: GC15_150323.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.631 | C6 | 2084 | -1.35709 |
| 0.824 | C7 | 1219 | 209.98430 |
| 1.068 | C8 | 13067 | 0.00000 |
| 1.282 | C9 | 2126 | 290.82740 |
| 1.389 | Isopropylbenzene | 264382 | 35.36791 |
| 1.550 | C10 | 61244 | 4538.19500 |
| 1.950 | C12 | 19241 | 5141.94600 |
| 2.493 | C16 | 57152 | 74261.40000 |
| 2.922 | C21 | 31438 | 18357.10000 |
| 3.372 | Octacosane | 200531 | 37.22068 |

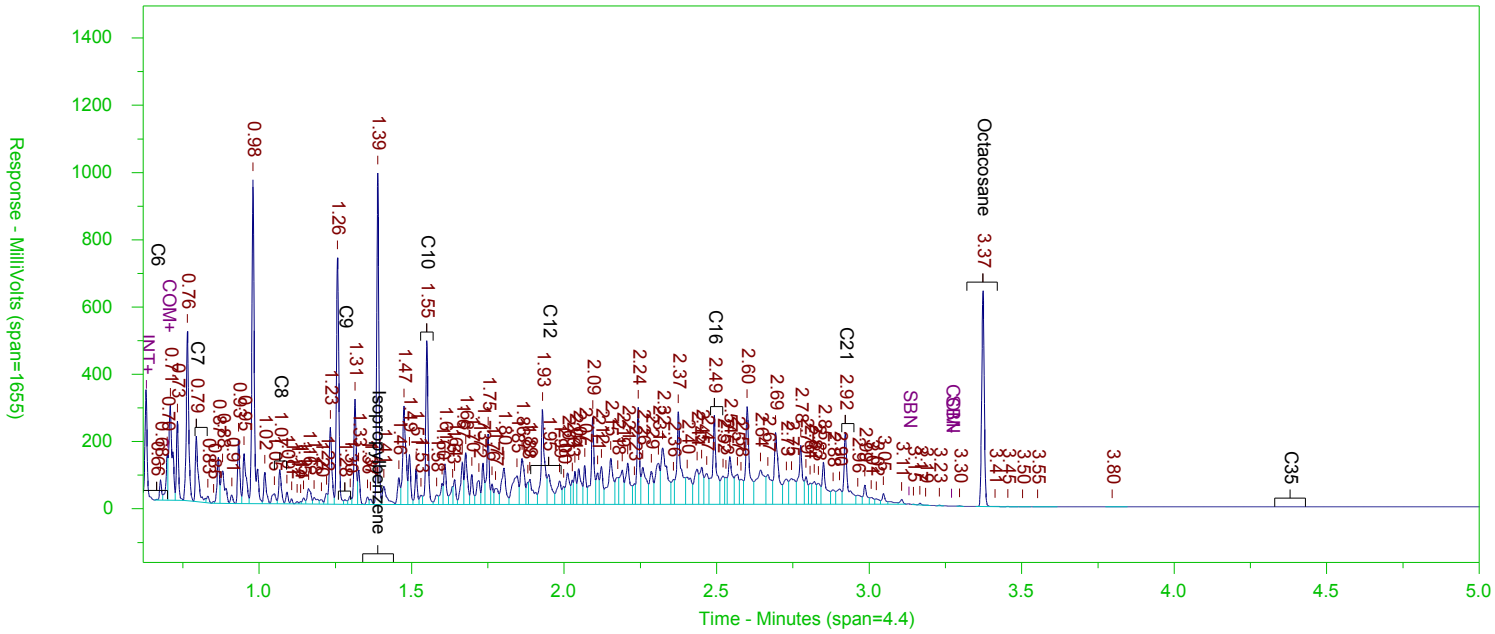
Total Area - Surr: 2271360
C6-C12 Area: 1165867 >C12-C28 Area: 1105163 >C28-C35 Area: 328 C6-C35 Area: 2271360
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 283.7697
R$:>C12-C28 268.9944
R$:>C28-C35 0.07987999
R$:C6-C35 552.8441
R$:Isopropbenz 35.36791
R$:Octacosane 37.22068




Sample Name: CAL 4 1000 PPM
Date of Analyses: 9/18/2015 12:28:29 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.014.RAW
Calibration File: GC15_150323.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.666 | C6 | 475 | -12.09015 |
| 0.796 | C7 | 57531 | 9910.76200 |
| 1.069 | C8 | 27651 | 0.00000 |
| 1.282 | C9 | 4555 | 622.97700 |
| 1.389 | Isopropylbenzene | 425892 | 56.97409 |
| 1.550 | C10 | 124807 | 9523.42100 |
| 1.950 | C12 | 41414 | 11067.11000 |
| 2.492 | C16 | 108289 | 140706.50000 |
| 2.938 | C21 | 18400 | 10744.15000 |
| 3.372 | Octacosane | 298964 | 55.49098 |

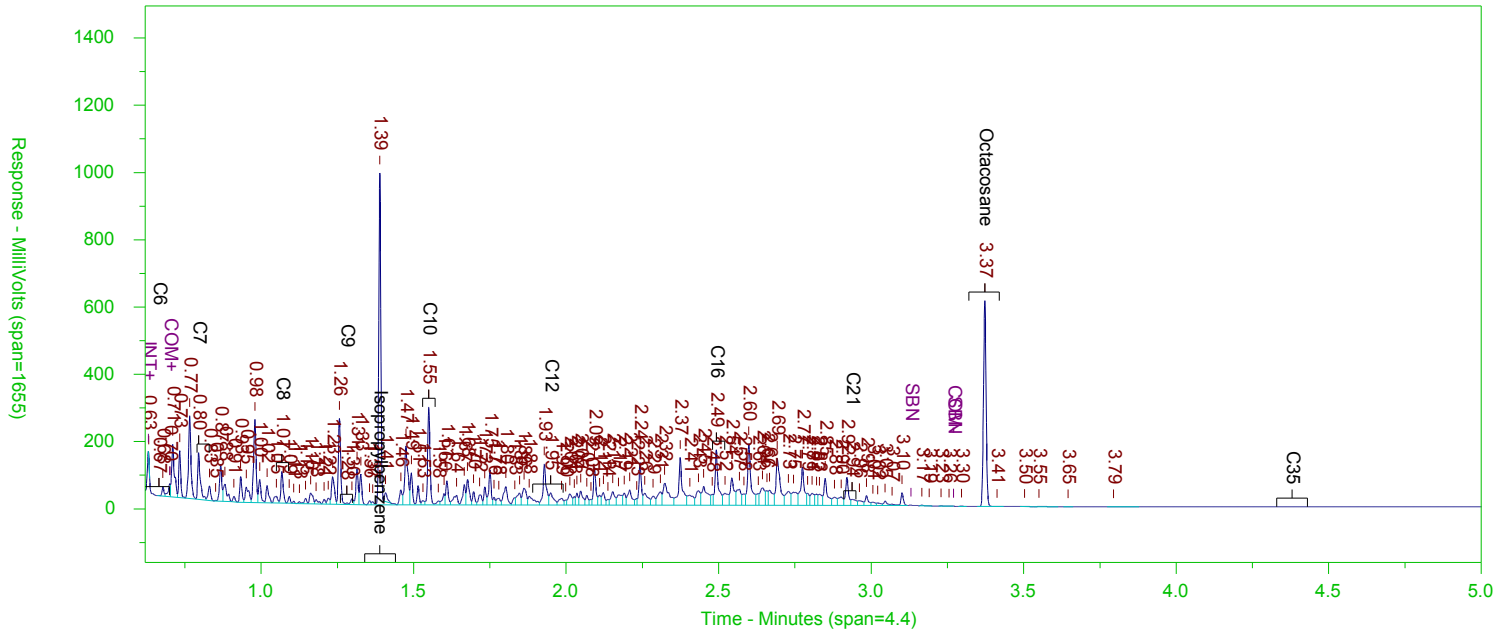
Total Area - Surr: 4594987
C6-C12 Area: 2397091 >C12-C28 Area: 2197068 >C28-C35 Area: 827 C6-C35 Area: 4594987
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 583.4468
R$:>C12-C28 534.7617
R$:>C28-C35 0.2014754
R$:C6-C35 1118.41
R$:Isopropbenz 56.97409
R$:Octacosane 55.49098




Sample Name: CAL 5 2500 PPM
Date of Analyses: 9/18/2015 12:37:26 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.015.RAW
Calibration File: GC15_150323.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.665 | C6 | 954 | -8.89678 |
| 0.794 | C7 | 129111 | 22241.86000 |
| 1.068 | C8 | 59656 | 0.00000 |
| 1.281 | C9 | 9284 | 1269.82500 |
| 1.389 | Isopropylbenzene | 474097 | 63.42285 |
| 1.550 | C10 | 272063 | 21072.65000 |
| 1.949 | C12 | 90488 | 24181.30000 |
| 2.492 | C16 | 250720 | 325775.10000 |
| 2.922 | C21 | 183228 | 106988.40000 |
| 3.373 | Octacosane | 375088 | 69.62035 |

Total Area - Surr: 1.031203E+07
C6-C12 Area: 5219674 >C12-C28 Area: 5091384 >C28-C35 Area: 972 C6-C35 Area: 1.031203E+07
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 1270.457
R$:>C12-C28 1239.232
R$:>C28-C35 0.2366337
R$:C6-C35 2509.926
R$:Isopropbenz 63.42285
R$:Octacosane 69.62035




Sample Name: ICV SSCV1000 PPM
Date of Analyses: 9/18/2015 1:48:02 PM
Analyst:
Instrument ID: GC#15
Raw Data File Name: GC15_150918.016.RAW
Calibration File: GC15_150918.CAL
Method File: GC15_TX1005.MET
Column : DB-5ms, 15m, 0.25mmID, 0.25um phase

| Ret Time(min) | Analyte Name | Peak Area | Amount (ppm) |
|---|---|---|---|
| 0.665 | C6 | 280 | -13.39176 |
| 0.795 | C7 | 83302 | 14350.39000 |
| 1.068 | C8 | 50765 | 0.00000 |
| 1.281 | C9 | 2348 | 321.21910 |
| 1.389 | Isopropylbenzene | 489397 | 46.91896 |
| 1.550 | C10 | 157132 | 12058.64000 |
| 1.950 | C12 | 35957 | 9608.98800 |
| 2.492 | C16 | 120772 | 156925.70000 |
| 2.938 | C21 | 20974 | 12246.91000 |
| 3.373 | Octacosane | 366490 | 46.14993 |

Total Area - Surr: 4636852
C6-C12 Area: 2373678 >C12-C28 Area: 2262165 >C28-C35 Area: 1009 C6-C35 Area: 4636852
C35/C28 ratio: 0 %
I.S. (DILN FACTOR) : 1
R$:C6-C12 595.056
R$:>C12-C28 567.1008 +/- 20%
R$:>C28-C35 0.2530422
R$:C6-C35 1162.41 **116%**
R$:Isopropbenz 46.91896
R$:Octacosane 46.14993

# GCMS5
# For

# DHL Work Order
# 1709100

# GCMS5_170914A
# For

# DHL Work Order
# 1709100

# Lab Data Review Check List
## EPA Method 8260 / 624 - Volatile Organic Compounds by GC/MS

| | |
|---|---|
| **Project Number(s): SEE RUN LOG** | **Run ID: GCMS5_170914A** |
| **Batch Number(s): SEE RUN LOG** | **SOP:** ORGANICS-Volatiles-01 |
| **Matrix:** | |

| Review Item | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|
| **Data Folder Contents**<br>1. Is the Prep Batch Report included? Check and record the following:<br>***Prep Start/End Dates, Sample Amounts, Bottle #s, pH ($H_2O$ samples)*** | X | | | x |
| 2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date?<br>***All standard/QC sample preparations shall be documented in LIMS*** | X | | | |
| 3. Is the Run Log and instrument sequence included?<br>***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time*** | X | | | |
| 4. Is the System Verification - Tune Report included?<br>***Date/Tme of Tune starts 12-hour analysis window*** | X | | | |
| 5. Is the Evaluate Continuing Calibration Report included? | X | | | |

## Daily Demonstration of Performance

**QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.**

| Review Item | Frequency | Limits | Pass | Fail (List Batch/Sample) **See Run Log** | 2nd Level Review |
|---|---|---|---|---|---|
| BFB Tune | Before ICAL<br>Every 12 hours | See Tune Eval Report | X | | x |
| Initial Calibration Curve (ICAL) (minimum: 5 Standards) | Prior to samples and when ICV fails | Avg. RF - %RSD ≤ 15%<br>Curve (COD) - $R^2$ ≥ 0.990 | X | | |
| SSCV - (Second Source) | After calibration (ICAL) | 70-130% non-DoD<br>80-120% DoD | X | | |
| ICV - (Daily Initial Cal Verification) | Every 12 hours | ISTDs Area% (50-200)<br>Surrogates %R (See LIMS)<br>8260 %R (80-120)<br>for >80% analytes reported<br>Analytes %R (70-130) TCEQ<br>Analytes %R (80-120) DoD | X | | |

| Review Item | Frequency | Limits | Pass | Fail | N/A | Review |
|---|---|---|---|---|---|---|
| Method Blank (MB)<br>System Blank (SYS Blank) | Every Batch (MB) Daily (SYS BL) | < MDL / <½ RL (DoD) or <1/10 the sample/reg limit | X | | | x |
| Lab Control Sample (LCS) | Every Batch/20 samples | See LIMS | X | | | |
| Lab Control Sample Dup (LCSD) | Insufficient sample Sample Matrix | See LIMS | X | | | |
| LCSD - RPD | Every LCS/LCSD | ≤ 20 (Aq) / ≤ 30 (Soil&DoD) | X | | | |
| Field Samples | Up to 20 per prep batch | ISTDs Area% (50-200%)<br>Surrogates %R (See LIMS)<br>RRT ± 0.06 RRT Standard<br>Q value > 70 - check for # | X | | | |
| Matrix Spike (MS) | Every Batch/20 samples | See LIMS | | | X | |
| Matrix Spike Duplicate (MSD) (MSD is N/A for Method 624) | Every Prep Batch except Method 624 | See LIMS | | | X | |
| MSD - RPD<br>(MSD is N/A for Method 624) | Every MS/MSD except Method 624 | ≤ 20 (Aq) / ≤ 30 (Soil&DoD) | | | X | |

# Lab Data Review Check List
## EPA Method 8260 / 624 - Volatile Organic Compounds by GC/MS

| Review Item | Criteria | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|---|
| **Sample Analysis** 1. Are all sample hold times met? ***14 days for <2 (Aq) except for Vinyl Chloride, Styrene, 2-CEVE.** ****No BTEX** | 3 days (Aq)-Acrolein | | | X | x |
| | 7 days (Aq)-pH>2-Full+BTEX | X | | | |
| | 14 days (Soil) | | | X | |
| | 14 days (Aq)-pH≤2* | X | | | |
| | 14 days (Aq)-pH>2** | | | X | |
| 2. Are all manual integrations signed (Before & After)? | Sign(Before & After)/LIMS Comment/MI Form(DoD) | | | X | |
| 3. Are all samples with concentrations > the highest ICAL STD diluted and reanalyzed? | | | | X | |
| **Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder** | | | | | |
| 4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL (<92 for Acetone)? | Q value <70 - All hits Q value <92 - Acetone | | | X | x |
| **5. Are ALL reported analytes > MDL (+ J flags) highlighted by the analyst?** | | X | **Return to analyst if NO** | | |

## VARIANCE REPORT

**QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.**

| | | | | | |
|---|---|---|---|---|---|
| **NON-CONFORMANCES / VARIANCE** 1. Are all non-conformances included and noted? | All deviations from the method and SOP that affect data quality | | | X | x |
| 2. Are all corrective actions included? | | | | X | |
| 3. Does the variance require approval by the Technical Director/General Manager/QA Manager? | | | | X | |

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

| VARIANCE ITEM | REASON | CORRECTIVE ACTION |
|---|---|---|
| ___ Hold Time exceeded (7D/14D/Meth 5035 ASAP) | ___ Sample Received out of HT | ___ Reanalyze QC to confirm |
| ___ ICV out of control (± 20% DoD/30%) | ___ Carryover from previous run | ___ Recalibrate |
| ___ LCS ___ LCSD out of control (See LIMS) | ___ Cross contamination | ___ Reprep/Reanalyze sample |
| ___ MB/SYS BL out of control (> MDL / >½ RL) | ___ Lab Artifact | ___ Reprep/Reanalyze Batch |
| ___ Internal Standard(s) out of control limits | ___ Prep Spike error (describe) | ___ Reanalyze Batch/Sample/QC |
| ___ 2 or more Surrogates out of control limits | ___ High Levels of target analytes | ___ Verify H2O/reagents are clean |
| ___ RPD out of control for LCS/LCSD (>20/30%) | ___ High Levels of non-targets | ___ Reanalyze sample to confirm |
| ___ MS ___ MSD out of control (See LIMS) | ___ Insufficient sample for QC | ___ Sample results ND w/ dilution |
| ___ RPD out of control for MS/MSD (>20/30%) | ___ Prep Error | ___ Client notified and approved |
| ___ No MS/MSD prepared - LCS/LCSD used instead | ___ Analytical Error | ___ Flag data / Case narrative |
| ___ Missing QC (other than MS/MSD) | ___ Client Request | ___ Instrument Maintenance |
| ___ QC sample(s) was mis-spiked | ___ Matrix Effect | ___ Accept data |
| ___ Headspace Present | ___ Other (describe below) | ___ Confirmed by reanalysis |
| ___ Other (describe below) | ___ Cannot reanalyze (HT out/Lack of Sample) | |

General Comments and Impact on Data:

Analyst: Don Winston Date of Completion: 09/15/17

Second-Level Review: Janice Whitt Date: 9/15/2017

REVIEWED BY
By Janice Whitt at 2:22:18 PM, 9/15/2017

**DHL Analytical, Inc.**

**Run ID:** GCMS5_170914A **Run No.:** 94155

**Analytical Run Date:** 9/14/2017 **InstrumentID:** GCMS5

**Analyst:** Don Winston **Column:** Rtx-VMS (30m x 0.25mm ID x 1.4µm df)

**Calibration ID:** 793 **Column ID:** 0.25mm

**Column Length:** 30m

**Cal Comments:** 170817X.M
SSCV out: Acetone low (73.82%) for DoD. IPA and TBA high in SSCV. All other compounds within 20%. No MI

| SampID | DF | TestCode | SampType | Batch ID | Analysis Date/Time | Q | Comments |
|---|---|---|---|---|---|---|---|
| ICV-170914 | 1 | 8260_W_AF2 | ICV | R94155 | 9/14/2017 9:40:00 AM | | |
| LCS-82366 | 1 | 8260_W_AF2 | LCS | 82366 | 9/14/2017 10:27:00 AM | | |
| LCSD-82366 | 1 | 8260_W_AF2 | LCSD | 82366 | 9/14/2017 10:50:00 AM | | Insufficient sample for MS/MSD. |
| MB-82366 | 1 | 8260_W_AF2 | MBLK | 82366 | 9/14/2017 11:38:00 AM | | |
| 1709097-02A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 12:01:00 PM | | |
| 1709099-03A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 12:25:00 PM | | |
| 1709100-02A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 12:49:00 PM | | |
| 1709107-03A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 1:12:00 PM | | |
| 1709108-03A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 1:36:00 PM | | |
| 1709097-01A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 1:59:00 PM | | |
| 1709099-01A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 2:23:00 PM | | |
| 1709100-01A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 2:46:00 PM | | |
| 1709107-02A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 3:10:00 PM | | |
| 1709108-02A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 3:34:00 PM | | |
| 1709091-01A | 1 | 8260_W_AF2 | SAMP | 82366 | 9/14/2017 4:21:00 PM | | |

| Std ID | Std Name | Type | Exp. Date |
|---|---|---|---|
| VAVP170913 | 5000 ppm ACROLEIN AND VINYL A | ICV | 10/13/2017 |
| VCDP170913 | 200 PPM CARBON DISULFIDE STA | ICV | 10/13/2017 |
| VCEP170913 | 200 PPM 2-CHLOROETHYLVINYLE | ICV | 10/13/2017 |
| VGP170913 | 200 PPM GAS STANDARD | ICV | 10/13/2017 |
| VIMP170913 | 200 PPM IODOMETHANE STANDA | ICV | 10/13/2017 |
| VKP170515B | 2000 PPM KETONE STANDARD | ICV | 02/16/2018 |
| VLP170913 | 8260 Liquid Std. + Adds (200, 400, | ICV | 10/13/2017 |
| VMTP170913 | 200 PPM MIXED STANDARD | ICV | 10/13/2017 |
| VPNP170913 | 5000 PPM ISOPROPYL ALCOHOL | ICV | 10/13/2017 |
| VSI170912-1 | 25 PPM ISTD/SURROGATE 8260 | ICV | 12/12/2017 |

Sequence Name: C:\msdchem\1\sequence\170914.s
Comment:
Operator:
Data Path: c:\msdchem\1\DATA\170914\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

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

| Method Sections To Run | Sequence Barcode Options |
|---|---|
| (X) Full Method | (X) On Mismatch, Inject Anyway |
| ( ) Reprocessing Only | ( ) On Mismatch, Don't Inject |
| | ( ) Barcode Disabled |

| Line | | Sample Name/Misc Info | | |
|---|---|---|---|---|
| 1) | Sample 1 | 17091401 | 170817X | ICV-170914 |
| 2) | Sample 2 | 17091402 | 170817X | LCS-82365 |
| 3) | Sample 3 | 17091403 | 170817X | LCS-82366 |
| 4) | Sample 4 | 17091404 | 170817X | LCSD-82366 |
| 5) | Sample 5 | 17091405 | 170817X | MB-82365 |
| 6) | Sample 6 | 17091406 | 170817X | MB-82366 |
| 7) | Sample 7 | 17091407 | 170817X | 1709097-02A |
| 8) | Sample 8 | 17091408 | 170817X | 1709099-03A |
| 9) | Sample 9 | 17091409 | 170817X | 1709100-02A |
| 10) | Sample 10 | 17091410 | 170817X | 1709107-03A |
| 11) | Sample 11 | 17091411 | 170817X | 1709108-03A |
| 12) | Sample 12 | 17091412 | 170817X | 1709097-01A |
| 13) | Sample 13 | 17091413 | 170817X | 1709099-01A |
| 14) | Sample 14 | 17091414 | 170817X | 1709100-01A |
| 15) | Sample 15 | 17091415 | 170817X | 1709107-02A |
| 16) | Sample 16 | 17091416 | 170817X | 1709108-02A |
| 17) | Sample 17 | 17091417 | 170817X | 1709103-01A |
| 18) | Sample 18 | 17091418 | 170817X | 1709091-01A |
| 19) | Sample 19 | 17091419 | 170817X | 1709116-01B |
| 20) | Sample 20 | 17091420 | 170817X | 1709116-02B |
| 21) | Sample 21 | 17091421 | 170817X | 1709116-04B |
| 22) | Sample 22 | 17091422 | 170817X | 1709118-01A |
| 23) | Sample 23 | 17091423 | 170817X | 1709119-01A |
| 24) | Sample 24 | 17091424 | 170817X | 1709116-01BMS |

# DHL Analytical, Inc.

# PREP BATCH REPORT



Prep Start Date: **9/14/2017 9:53:50 AM**
Digestion:
Prep End Date: **9/14/2017 4:21:00 PM**

Prep Batch **82366** Prep Code: **5030_W_MS** Technician: **Don Winston**

Prep Factor Units: **mL/mL**

**Equipment List**

Pipette # 27

| Sample ID | Matrix | pH | SampAmt | Fin Vol | Factor | Bottle # | Vessel | Cleanup |
|---|---|---|---|---|---|---|---|---|
| 1709091-01A | Aqueous | <2 | 5 | 5 | 1.000 | 1 of 2 | | |
| 1709097-01A | Aqueous | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| 1709097-02A | Aqueous | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| 1709099-01A | Aqueous | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| 1709099-03A | Field Blank | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| 1709100-01A | Aqueous | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| 1709100-02A | Field Blank | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| 1709107-02A | Aqueous | >3 | 5 | 5 | 1.000 | 2 of 3 | | |
| 1709107-03A | Field Blank | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| 1709108-02A | Aqueous | >3 | 5 | 5 | 1.000 | 2 of 3 | | |
| 1709108-03A | Field Blank | >3 | 5 | 5 | 1.000 | 1 of 3 | | |
| LCS-82366 | Aqueous | | 5 | 5 | 1.000 | of | | |
| LCSD-82366 | Aqueous | | 5 | 5 | 1.000 | of | | |
| MB-82366 | Aqueous | | 5 | 5 | 1.000 | of | | |

| Number | Reagent Name | Amt | Units | Exp. Da |
|---|---|---|---|---|
| 8086 | pH paper 0-3 | 1 | paper | 12/15/2025 |
| 11586 | VOA Vials | 1 | vial | 07/17/2027 |

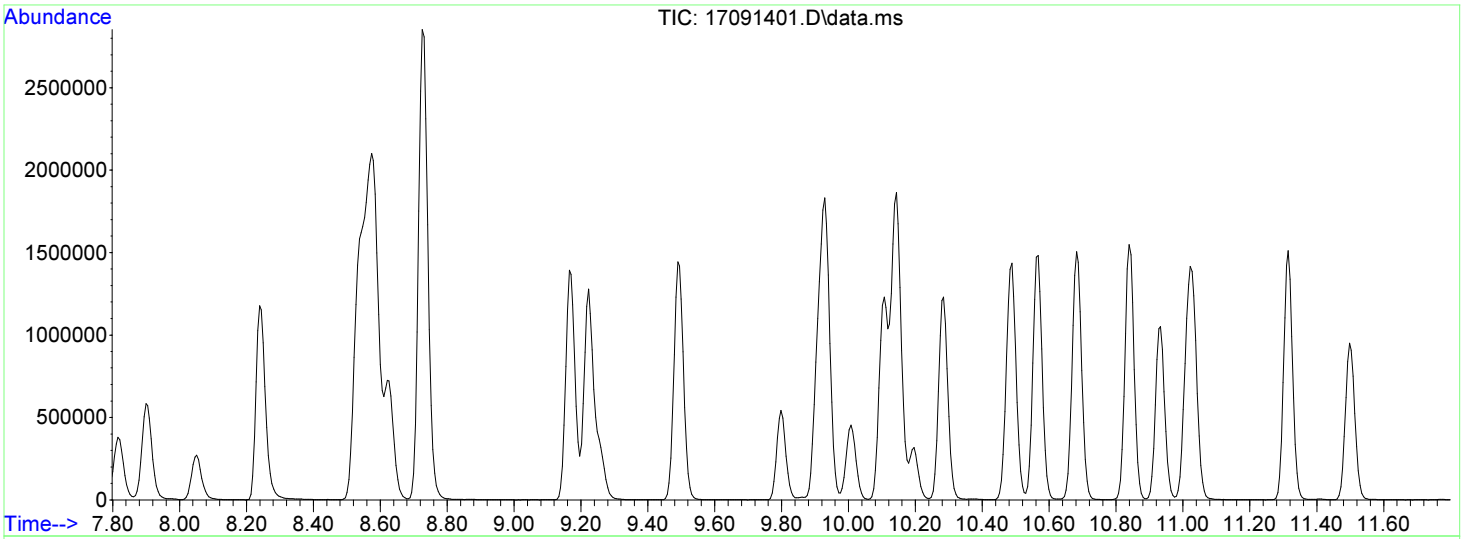
**REVIEWED BY**
*By Janice Whitt at 1:28:55 PM, 9/15/2017*

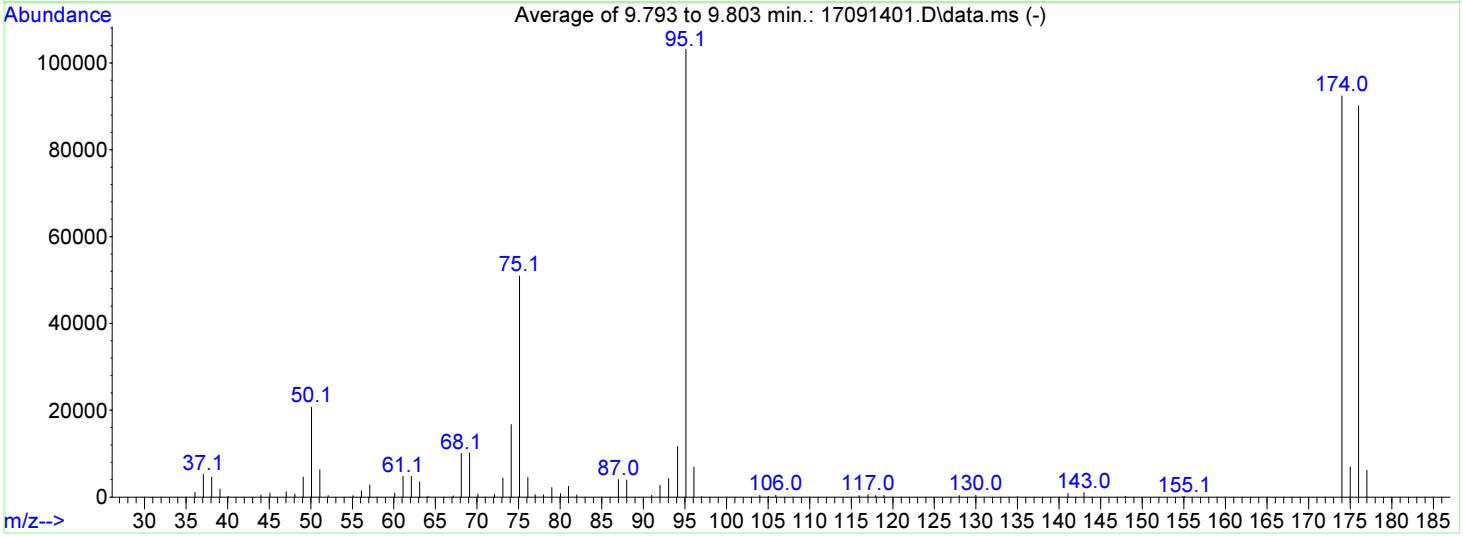
| Spk ID | Spike Name | SampType | Amt (mL or g) | Exp. Date |
|---|---|---|---|---|
| VAVP170913 | 5000 ppm ACROLEIN AND VINYL ACET | | 0.0005 | 10/13/2017 |
| VCDP170913 | 200 PPM CARBON DISULFIDE STANDA | | 0.005 | 10/13/2017 |
| VCEP170913 | 200 PPM 2-CHLOROETHYLVINYLETHE | | 0.005 | 10/13/2017 |
| VGP170913 | 200 PPM GAS STANDARD | | 0.005 | 10/13/2017 |
| VIMP170913 | 200 PPM IODOMETHANE STANDARD | | 0.005 | 10/13/2017 |
| VKP170515B | 2000 PPM KETONE STANDARD | | 0.0025 | 02/16/2018 |
| VLP170913 | 8260 Liquid Std. + Adds (200, 400, 1000, | | 0.005 | 10/13/2017 |
| VMTP170913 | 200 PPM MIXED STANDARD | | 0.005 | 10/13/2017 |

Data Path : C:\msdchem\1\data\170914\
Data File : 17091401.D
Acq On : 14 Sep 2017 9:40 am
Operator :
Sample : ICV-170914
Misc : ICV
ALS Vial : 1 Sample Multiplier: 1

Integration File: Rteint.p

Method : C:\msdchem\1\methods\170817X.M
Title : M-8260S
Last Update : Thu Aug 17 14:33:11 2017




AutoFind: Scans 1589, 1590, 1591; Background Corrected with Scan 1580

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 20.0 | 20661 | PASS |
| 75 | 95 | 30 | 60 | 49.3 | 50923 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 103200 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 6908 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 200 | 89.6 | 92435 | PASS |
| 175 | 174 | 5 | 9 | 7.5 | 6957 | PASS |
| 176 | 174 | 95 | 101 | 97.5 | 90088 | PASS |
| 177 | 176 | 5 | 9 | 6.8 | 6170 | PASS |

REVIEWED BY
By Janice Whitt at 1:28:57 PM, 9/15/2017

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\170914\
Data File : 17091401.D
Acq On : 14 Sep 2017 9:40 am
Operator :
Sample : ICV-170914
Misc : ICV
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 14 09:57:10 2017
Quant Method : C:\MSDCHEM\1\METHODS\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 20% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | i | Fluorobenzene | 1.000 | 1.000 | 0.0 | 80 | 0.00 |
| 2 | CP | Dichlorodifluoromethane | 2.541 | 2.467 | 2.9 | 81 | 0.00 |
| 3 | CP | Chloromethane | 2.660 | 2.730 | -2.6 | 83 | 0.00 |
| 4 | CP | Vinyl chloride | 2.332 | 2.293 | 1.7 | 81 | 0.00 |
| 5 | CP | Bromomethane | 0.787 | 0.690 | 12.3 | 80 | 0.00 |
| 6 | CP | Chloroethane | 0.998 | 1.018 | -2.0 | 89 | 0.00 |
| 7 | CP | Trichlorofluoromethane | 3.125 | 3.491 | -11.7 | 91 | 0.00 |
| 8 | CP | Trichlorotrifluoroethane | 2.026 | 2.021 | 0.2 | 80 | 0.00 |
| 9 | | Acrolein | 0.321 | 0.333 | -3.7 | 77 | 0.00 |
| 10 | | Isopropyl Alcohol | 0.025 | 0.017 | 32.0 | 43 | 0.02 |
| 11 | CP | Acetone | 0.499 | 0.422 | 15.4 | 67 | 0.00 |
| 12 | | Iodomethane | 1.266 | 1.129 | 10.8 | 60 | 0.00 |
| 13 | CP | 1,1-Dichloroethene | 1.710 | 1.717 | -0.4 | 81 | 0.00 |
| 14 | CP | Carbon disulfide | 5.777 | 5.802 | -0.4 | 82 | 0.00 |
| 15 | CP | Methylene chloride | 1.866 | 1.803 | 3.4 | 81 | 0.00 |
| 16 | CP | Methyl Acetate | 1.496 | 1.380 | 7.8 | 71 | 0.00 |
| 17 | CP | trans-1,2-Dichloroethene | 1.848 | 1.869 | -1.1 | 82 | 0.00 |
| 18 | | Acrylonitrile | 0.655 | 0.660 | -0.8 | 71 | 0.00 |
| 19 | CP | MTBE | 5.000 | 5.296 | -5.9 | 84 | 0.00 |
| 20 | | Tert-Butanol | 0.098 | 0.075 | 23.5 | 55 | 0.00 |
| 21 | | Isopropyl Ether | 6.674 | 6.634 | 0.6 | 79 | 0.00 |
| 22 | CP | 1,1-Dichloroethane | 3.376 | 3.468 | -2.7 | 83 | 0.00 |
| 23 | | Vinyl acetate | 4.006 | 4.461 | -11.4 | 86 | 0.00 |
| 24 | | Ethyl-Tert-butyl Ether | 5.602 | 5.878 | -4.9 | 84 | 0.00 |
| 25 | CP | cis-1,2-Dichloroethene | 2.025 | 2.017 | 0.4 | 81 | 0.00 |
| 26 | | 2,2-Dichloropropane | 2.484 | 2.899 | -16.7 | 95 | 0.00 |
| 27 | | Bromochloromethane | 0.860 | 0.886 | -3.0 | 85 | 0.00 |
| 28 | CP | Cyclohexane | 3.262 | 3.029 | 7.1 | 77 | 0.00 |
| 29 | CP | Chloroform | 3.383 | 3.549 | -4.9 | 85 | 0.00 |
| 30 | s | Dibromofluoromethane | 0.247 | 0.255 | -3.2 | 82 | 0.00 |
| 31 | | 1,1-Dichloropropene | 2.724 | 2.801 | -2.8 | 82 | 0.00 |
| 32 | s | 1,2-Dichloroethane-d4 | 0.311 | 0.337 | -8.4 | 88 | 0.00 |
| 33 | CP | 1,1,1-Trichloroethane | 2.865 | 3.205 | -11.9 | 88 | 0.00 |
| 34 | CP | 1,2-Dichloroethane | 2.422 | 2.641 | -9.0 | 90 | 0.00 |
| 35 | CP | Benzene | 7.687 | 7.686 | 0.0 | 81 | 0.00 |
| 36 | CP | 2-Butanone | 0.906 | 0.815 | 10.0 | 67 | 0.00 |
| 37 | CP | Carbon tetrachloride | 2.406 | 2.574 | -7.0 | 86 | 0.00 |
| 38 | | Tert-amyl Methyl Ether | 4.654 | 4.925 | -5.8 | 84 | 0.00 |
| 39 | CP | Trichloroethene | 2.047 | 2.104 | -2.8 | 83 | 0.00 |
| 40 | CP | Methyl Cyclohexane | 3.350 | 3.198 | 4.5 | 78 | 0.00 |
| 41 | T | Dibromomethane | 1.084 | 1.106 | -2.0 | 83 | 0.00 |
| 42 | CP | Bromodichloromethane | 2.219 | 2.469 | -11.3 | 87 | 0.00 |
| 43 | CP | 1,2-Dichloropropane | 1.922 | 1.938 | -0.8 | 80 | 0.00 |
| 44 | T | 2-Chloroethylvinylether | 1.365 | 1.382 | -1.2 | 80 | 0.00 |
| 45 | CP | cis-1,3-Dichloropropene | 2.746 | 2.941 | -7.1 | 84 | 0.00 |
| 46 | CP | trans-1,3-Dichloropropene | 2.184 | 2.445 | -12.0 | 86 | 0.00 |
| 47 | CP | 1,1,2-Trichloroethane | 1.498 | 1.544 | -3.1 | 82 | 0.00 |
| 48 | CP | Toluene | 4.803 | 4.787 | 0.3 | 80 | 0.00 |
| 49 | i | Chlorobenzene-d5 | 1.000 | 1.000 | 0.0 | 80 | 0.00 |
| 50 | CP | 4-Methyl-2-pentanone | 2.955 | 2.738 | 7.3 | 72 | 0.00 |
| 51 | s | Toluene-d8 | 1.330 | 1.318 | 0.9 | 80 | 0.00 |
| 52 | CP | 2-Hexanone | 2.080 | 1.902 | 8.6 | 70 | 0.00 |
| 53 | CP | Dibromochloromethane | 2.230 | 2.451 | -9.9 | 87 | 0.00 |

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\170914\
Data File : 17091401.D
Acq On : 14 Sep 2017 9:40 am
Operator :
Sample : ICV-170914
Misc : ICV
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 14 09:57:10 2017
Quant Method : C:\MSDCHEM\1\METHODS\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 20% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 54 | | 1,3-Dichloropropane | 3.826 | 3.846 | -0.5 | 82 | 0.00 |
| 55 | CP | Tetrachloroethene | 2.463 | 2.473 | -0.4 | 82 | 0.00 |
| 56 | CP | 1,2-Dibromoethane | 2.243 | 2.288 | -2.0 | 81 | 0.00 |
| 57 | CP | Chlorobenzene | 7.003 | 7.034 | -0.4 | 82 | 0.00 |
| 58 | | 1,1,1,2-Tetrachloroethane | 2.196 | 2.395 | -9.1 | 87 | 0.00 |
| 59 | CP | Ethylbenzene | 3.936 | 3.929 | 0.2 | 81 | 0.00 |
| 60 | CP | Bromoform | 1.435 | 1.594 | -11.1 | 85 | 0.00 |
| 61 | CP | Styrene | 6.836 | 7.138 | -4.4 | 82 | 0.00 |
| 62 | | 1-Chlorohexane | 3.173 | 3.099 | 2.3 | 82 | 0.00 |
| 63 | CP | m,p-Xylene | 4.747 | 4.803 | -1.2 | 81 | 0.00 |
| 64 | CP | o-Xylene | 4.522 | 4.593 | -1.6 | 81 | 0.00 |
| 65 | CP | Isopropylbenzene | 11.539 | 11.905 | -3.2 | 82 | 0.00 |
| 66 | I | 1,4-Dichlorobenzene-d4 | 1.000 | 1.000 | 0.0 | 82 | 0.00 |
| 67 | | Bromobenzene | 5.948 | 5.830 | 2.0 | 83 | 0.00 |
| 68 | CP | 1,1,2,2-Tetrachloroethane | 5.712 | 5.313 | 7.0 | 79 | 0.00 |
| 69 | T | 1,2,3-Trichloropropane | 1.744 | 1.708 | 2.1 | 81 | 0.00 |
| 70 | s | 4-Bromofluorobenzene | 0.991 | 0.981 | 1.0 | 82 | 0.00 |
| 71 | | 1,4-Dichloro-2-butene | 1.739 | 1.671 | 3.9 | 78 | 0.00 |
| 72 | T | n-Propylbenzene | 29.539 | 29.324 | 0.7 | 83 | 0.00 |
| 73 | | 2-Chlorotoluene | 18.515 | 18.525 | -0.1 | 84 | 0.00 |
| 74 | | 1,3,5-Trimethylbenzene | 19.670 | 19.986 | -1.6 | 84 | 0.00 |
| 75 | | 4-Chlorotoluene | 17.148 | 17.277 | -0.8 | 85 | 0.00 |
| 76 | | tert-Butylbenzene | 17.567 | 17.689 | -0.7 | 85 | 0.00 |
| 77 | | 1,2,4-Trimethylbenzene | 19.762 | 20.149 | -2.0 | 84 | 0.00 |
| 78 | | sec-Butylbenzene | 26.231 | 25.931 | 1.1 | 83 | 0.00 |
| 79 | CP | 1,3-Dichlorobenzene | 10.885 | 10.680 | 1.9 | 83 | 0.00 |
| 80 | | p-Isopropyltoluene | 21.507 | 22.061 | -2.6 | 84 | 0.00 |
| 81 | CP | 1,4-Dichlorobenzene | 11.205 | 10.910 | 2.6 | 84 | 0.00 |
| 82 | CP | 1,2-Dichlorobenzene | 9.827 | 9.691 | 1.4 | 83 | 0.00 |
| 83 | CP | 1,2-Dibromo-3-chloropr... | 0.901 | 0.923 | -2.4 | 78 | 0.00 |
| 84 | | n-Butylbenzene | 19.489 | 19.988 | -2.6 | 85 | 0.00 |
| 85 | CP | 1,2,4-Trichlorobenzene | 6.542 | 6.793 | -3.8 | 86 | 0.00 |
| 86 | | Hexachlorobutadiene | 3.506 | 3.690 | -5.2 | 91 | 0.00 |
| 87 | | Naphthalene | 15.754 | 15.152 | 3.8 | 78 | 0.00 |
| 88 | | 1,2,3-Trichlorobenzene | 5.769 | 5.838 | -1.2 | 84 | 0.00 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091401.D
Acq On : 14 Sep 2017 9:40 am
Operator :
Sample : ICV-170914
Misc : ICV
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 14 13:47:17 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 599582 | 200.00 | ug/L | 79 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 430405 | 200.00 | ug/L | 81 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 215469 | 200.00 | ug/L | 81 |
| System Monitoring Compounds | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 153072 | 206.42 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 103.21% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.410 | 65 | 202239 | 216.88 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 108.44% | | | |
| 51) Toluene-d8 | 7.057 | 98 | 567307 | 198.15 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.08% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 211446 | 198.10 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.05% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 343117 | 45.049 | ug/L | 99 |
| 3) Chloromethane | 1.770 | 50 | 379813 | 47.630 | ug/L | 99 |
| 4) Vinyl chloride | 1.848 | 62 | 318901 | 45.617 | ug/L | 100 |
| 5) Bromomethane | 2.162 | 94 | 95945 | 40.653 | ug/L | 97 |
| 6) Chloroethane | 2.287 | 64 | 141598 | 47.331 | ug/L | 100 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 485625 | 51.835 | ug/L | 99 |
| 8) Trichlorotrifluoroethane | 2.946 | 101 | 281176 | 46.301 | ug/L # | 98 |
| 9) Acrolein | 3.203 | 56 | 115895 | 112.593 | ug/L | 100 |
| 10) Isopropyl Alcohol | 3.386 | 45 | 5870 | 92.906 | ug/L # | 100 |
| 11) Acetone | 3.459 | 43 | 293634 | 199.915 | ug/L | 96 |
| 12) Iodomethane | 3.041 | 142 | 157063 | 35.451 | ug/L | 96 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 238874 | 46.599 | ug/L | 95 |
| 14) Carbon disulfide | 2.941 | 76 | 807129 | 46.605 | ug/L | 99 |
| 15) Methylene chloride | 3.428 | 84 | 250870 | 46.956 | ug/L | 99 |
| 16) Methyl Acetate | 3.574 | 43 | 191969 | 42.792 | ug/L | 97 |
| 17) trans-1,2-Dichloroethene | 3.574 | 96 | 259948 | 46.925 | ug/L | 99 |
| 18) Acrylonitrile | 4.139 | 53 | 183560 | 82.153 | ug/L | 99 |
| 19) MTBE | 3.658 | 73 | 736632 | 49.146 | ug/L | 98 |
| 20) Tert-Butanol | 3.731 | 59 | 52051 | 187.604 | ug/L # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 922769 | 46.117 | ug/L | 99 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 482448 | 47.664 | ug/L | 99 |
| 23) Vinyl acetate | 4.306 | 43 | 1551325 | 122.900 | ug/L | 99 |
| 24) Ethyl-Tert-butyl Ether | 4.296 | 59 | 817601 | 48.686 | ug/L | 99 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 280587 | 46.226 | ug/L | 98 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 403310 | 54.166 | ug/L | 98 |
| 27) Bromochloromethane | 4.740 | 128 | 123283 | 47.828 | ug/L | 99 |
| 28) Cyclohexane | 4.756 | 84 | 421386 | 43.087 | ug/L | 98 |
| 29) Chloroform | 4.798 | 83 | 493632 | 48.667 | ug/L | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 389628 | 47.714 | ug/L | 99 |
| 33) 1,1,1-Trichloroethane | 4.981 | 97 | 445854 | 51.905 | ug/L | 99 |
| 34) 1,2-Dichloroethane | 5.467 | 62 | 367314 | 50.597 | ug/L | 100 |
| 35) Benzene | 5.300 | 78 | 1069084 | 46.393 | ug/L | 99 |
| 36) 2-Butanone | 5.044 | 43 | 566562 | 208.676 | ug/L | 100 |
| 37) Carbon tetrachloride | 4.929 | 117 | 358006 | 47.869 | ug/L | 98 |
| 38) Tert-amyl Methyl Ether | 5.384 | 73 | 685122 | 49.099 | ug/L | 99 |
| 39) Trichloroethene | 5.807 | 130 | 292723 | 47.707 | ug/L | 97 |
| 40) Methyl Cyclohexane | 5.807 | 55 | 444840 | 44.299 | ug/L | 98 |
| 41) Dibromomethane | 6.179 | 93 | 153893 | 47.365 | ug/L | 99 |
| 42) Bromodichloromethane | 6.315 | 83 | 343399 | 51.627 | ug/L | 99 |
| 43) 1,2-Dichloropropane | 6.257 | 63 | 269556 | 46.790 | ug/L | 97 |
| 44) 2-Chloroethylvinylether | 6.812 | 63 | 192295 | 46.977 | ug/L | 99 |
| 45) cis-1,3-Dichloropropene | 6.880 | 75 | 409060 | 49.682 | ug/L | 98 |

Data Path : C:\msdchem\1\data\170914\
Data File : 17091401.D
Acq On : 14 Sep 2017 9:40 am
Operator :
Sample : ICV-170914
Misc : ICV
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 14 13:47:17 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

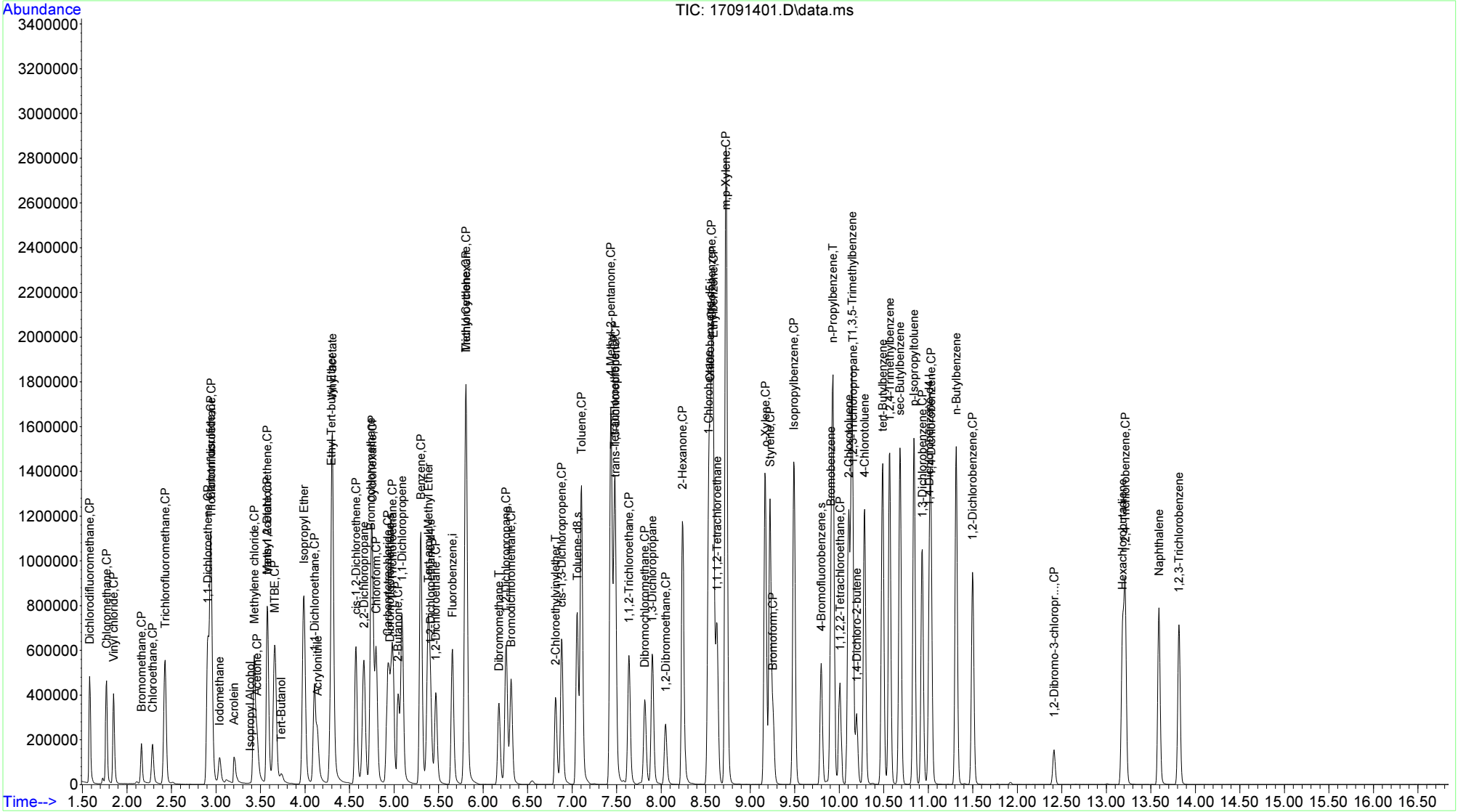
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 340141 | 51.955 | ug/L | 99 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 214720 | 47.798 | ug/L | 99 |
| 48) Toluene | 7.105 | 92 | 665880 | 46.248 | ug/L | 97 |
| 50) 4-Methyl-2-pentanone | 7.434 | 43 | 1367027 | 214.991 | ug/L | 99 |
| 52) 2-Hexanone | 8.239 | 43 | 949767 | 212.177 | ug/L | 98 |
| 53) Dibromochloromethane | 7.816 | 129 | 244757 | 49.656 | ug/L | 100 |
| 54) 1,3-Dichloropropane | 7.900 | 76 | 384007 | 46.633 | ug/L | 99 |
| 55) Tetrachloroethene | 7.476 | 164 | 246981 | 46.597 | ug/L | 99 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 228466 | 47.339 | ug/L | 100 |
| 57) Chlorobenzene | 8.564 | 112 | 702396 | 46.608 | ug/L | 99 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 239180 | 49.798 | ug/L | 98 |
| 59) Ethylbenzene | 8.585 | 106 | 392343 | 46.317 | ug/L | 96 |
| 60) Bromoform | 9.254 | 173 | 159151 | 49.285 | ug/L | 99 |
| 61) Styrene | 9.223 | 104 | 712712 | 48.446 | ug/L | 99 |
| 62) 1-Chlorohexane | 8.532 | 55 | 309462 | 45.315 | ug/L | 97 |
| 63) m,p-Xylene | 8.726 | 106 | 959108 | 93.891 | ug/L | 96 |
| 64) o-Xylene | 9.170 | 106 | 458678 | 47.129 | ug/L | 98 |
| 65) Isopropylbenzene | 9.490 | 105 | 1188720 | 47.871 | ug/L | 98 |
| 67) Bromobenzene | 9.908 | 156 | 291449 | 45.484 | ug/L | 98 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 265598 | 43.159 | ug/L | 99 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 85390 | 45.456 | ug/L | 98 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 83556 | 44.612 | ug/L | 95 |
| 72) n-Propylbenzene | 9.929 | 91 | 1465870 | 46.062 | ug/L | 98 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 926062 | 46.427 | ug/L | 98 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 999068 | 47.144 | ug/L | 99 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 863653 | 46.749 | ug/L | 100 |
| 76) tert-Butylbenzene | 10.488 | 119 | 884265 | 46.724 | ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 1007229 | 47.308 | ug/L | 98 |
| 78) sec-Butylbenzene | 10.682 | 105 | 1296254 | 45.869 | ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 533896 | 45.528 | ug/L | 99 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 1102824 | 47.596 | ug/L | 99 |
| 81) 1,4-Dichlorobenzene | 11.032 | 146 | 545381 | 45.177 | ug/L | 99 |
| 82) 1,2-Dichlorobenzene | 11.498 | 146 | 484418 | 45.756 | ug/L | 100 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 46139 | 45.423 | ug/L | 94 |
| 84) n-Butylbenzene | 11.315 | 91 | 999178 | 47.587 | ug/L | 100 |
| 85) 1,2,4-Trichlorobenzene | 13.213 | 180 | 339563 | 48.181 | ug/L | 99 |
| 86) Hexachlorobutadiene | 13.182 | 225 | 184446 | 48.834 | ug/L | 98 |
| 87) Naphthalene | 13.590 | 128 | 757417 | 44.626 | ug/L | 99 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 291843 | 46.960 | ug/L | 98 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091401.D
Acq On : 14 Sep 2017 9:40 am
Operator :
Sample : ICV-170914
Misc : ICV
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 14 13:47:17 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091403.D
Acq On : 14 Sep 2017 10:27 am
Operator :
Sample : LCS-82366
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 14 13:47:24 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 614137 | 200.00 | ug/L | | 81 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 447723 | 200.00 | ug/L | | 84 |
| 66) 1,4-Dichlorobenzene-d4 | 11.011 | 152 | 217482 | 200.00 | ug/L | | 82 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 156092 | 205.50 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 102.75% | | | | |
| 32) 1,2-Dichloroethane-d4 | 5.410 | 65 | 214652 | 224.74 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 112.37% | | | | |
| 51) Toluene-d8 | 7.057 | 98 | 584724 | 196.33 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.17% | | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 214201 | 198.83 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.42% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 167955 | 21.529 | ug/L | | 99 |
| 3) Chloromethane | 1.770 | 50 | 183009 | 22.406 | ug/L | | 100 |
| 4) Vinyl chloride | 1.848 | 62 | 159610 | 22.290 | ug/L | | 100 |
| 5) Bromomethane | 2.162 | 94 | 40860 | 16.902 | ug/L | | 97 |
| 6) Chloroethane | 2.282 | 64 | 68840 | 22.465 | ug/L | | 98 |
| 7) Trichlorofluoromethane | 2.423 | 101 | 238345 | 24.838 | ug/L | | 100 |
| 8) Trichlorotrifluoroethane | 2.946 | 101 | 162073 | 26.056 | ug/L | | 98 |
| 9) Acrolein | 3.208 | 56 | 51428 | 51.046 | ug/L | | 98 |
| 10) Isopropyl Alcohol | 3.386 | 45 | 6130 | 94.593 | ug/L | # | 100 |
| 11) Acetone | 3.464 | 43 | 176979 | 117.409 | ug/L | | 98 |
| 12) Iodomethane | 3.041 | 142 | 64400 | 17.182 | ug/L | | 98 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 132138 | 25.166 | ug/L | | 98 |
| 14) Carbon disulfide | 2.941 | 76 | 440263 | 24.819 | ug/L | | 99 |
| 15) Methylene chloride | 3.428 | 84 | 140406 | 25.432 | ug/L | | 100 |
| 16) Methyl Acetate | 3.579 | 43 | 115075 | 25.043 | ug/L | | 98 |
| 17) trans-1,2-Dichloroethene | 3.579 | 96 | 142062 | 25.037 | ug/L | | 99 |
| 18) Acrylonitrile | 4.144 | 53 | 104359 | 46.330 | ug/L | | 98 |
| 19) MTBE | 3.663 | 73 | 416245 | 27.113 | ug/L | | 98 |
| 20) Tert-Butanol | 3.741 | 59 | 41682 | 148.083 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 520459 | 25.394 | ug/L | | 99 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 265921 | 25.649 | ug/L | | 100 |
| 23) Vinyl acetate | 4.311 | 43 | 718746 | 56.194 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 461585 | 26.835 | ug/L | | 99 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 156173 | 25.119 | ug/L | | 98 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 214886 | 28.176 | ug/L | | 97 |
| 27) Bromochloromethane | 4.746 | 128 | 69649 | 26.380 | ug/L | | 96 |
| 28) Cyclohexane | 4.756 | 84 | 242544 | 24.212 | ug/L | | 100 |
| 29) Chloroform | 4.803 | 83 | 272695 | 26.247 | ug/L | | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 214382 | 25.631 | ug/L | | 99 |
| 33) 1,1,1-Trichloroethane | 4.981 | 97 | 240825 | 27.372 | ug/L | | 99 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 204623 | 27.518 | ug/L | | 99 |
| 35) Benzene | 5.300 | 78 | 594871 | 25.202 | ug/L | | 100 |
| 36) 2-Butanone | 5.049 | 43 | 340079 | 122.289 | ug/L | | 99 |
| 37) Carbon tetrachloride | 4.934 | 117 | 188602 | 24.879 | ug/L | | 99 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 380724 | 26.638 | ug/L | | 99 |
| 39) Trichloroethene | 5.813 | 130 | 161655 | 25.722 | ug/L | | 94 |
| 40) Methyl Cyclohexane | 5.807 | 55 | 256700 | 24.957 | ug/L | | 98 |
| 41) Dibromomethane | 6.179 | 93 | 86986 | 26.138 | ug/L | | 98 |
| 42) Bromodichloromethane | 6.320 | 83 | 185116 | 27.171 | ug/L | | 99 |
| 43) 1,2-Dichloropropane | 6.262 | 63 | 150798 | 25.555 | ug/L | | 98 |
| 44) 2-Chloroethylvinylether | 6.817 | 63 | 113659 | 27.108 | ug/L | | 97 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 223213 | 26.468 | ug/L | | 98 |

Data Path : C:\msdchem\1\data\170914\
Data File : 17091403.D
Acq On : 14 Sep 2017 10:27 am
Operator :
Sample : LCS-82366
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 14 13:47:24 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

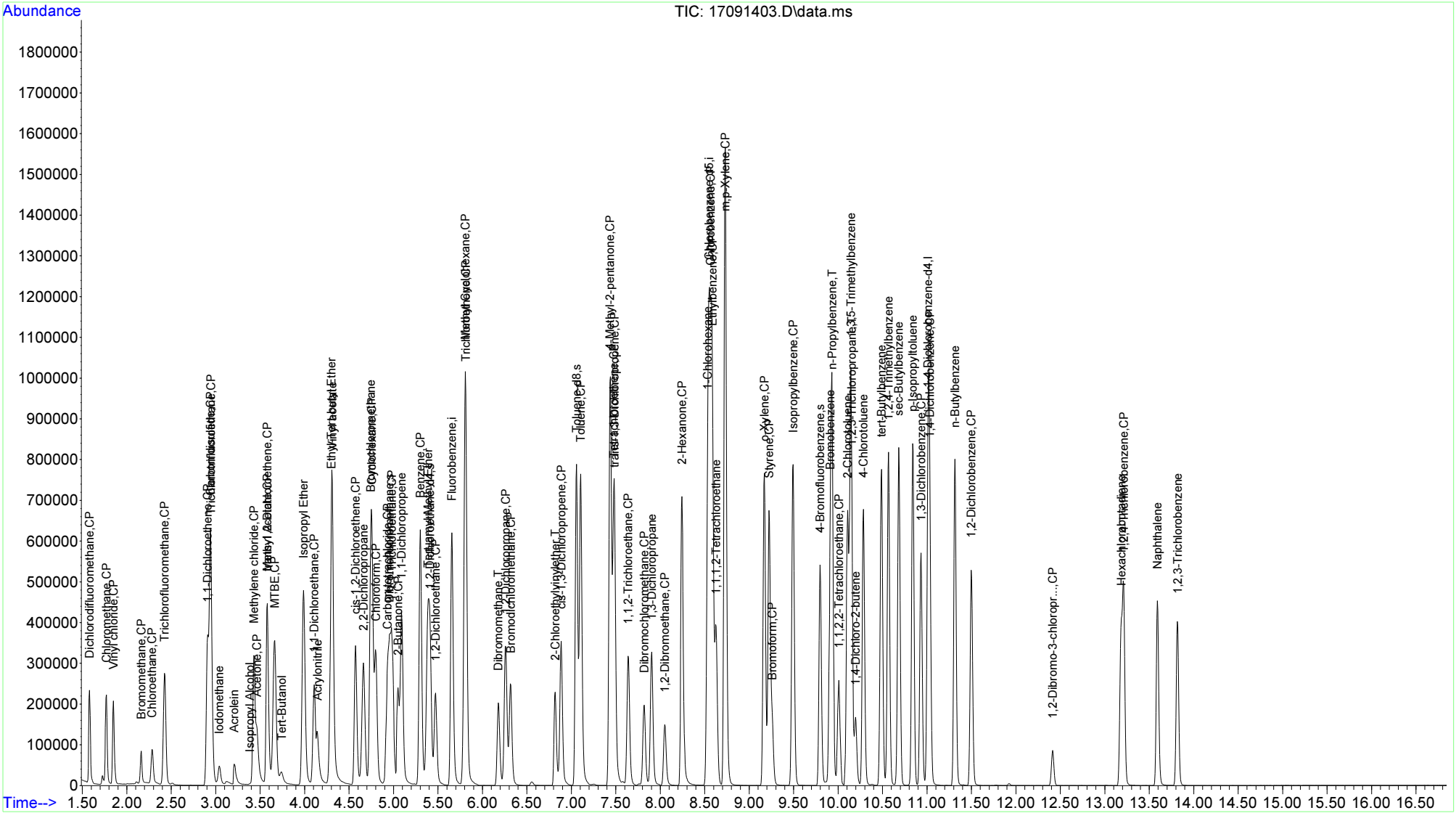
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 184121 | 27.457 | ug/L | 99 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 122179 | 26.553 | ug/L | 97 |
| 48) Toluene | 7.104 | 92 | 373162 | 25.303 | ug/L | 98 |
| 50) 4-Methyl-2-pentanone | 7.434 | 43 | 822885 | 124.409 | ug/L | 98 |
| 52) 2-Hexanone | 8.245 | 43 | 574309 | 123.338 | ug/L | 99 |
| 53) Dibromochloromethane | 7.821 | 129 | 131095 | 26.141 | ug/L | 100 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 218253 | 25.479 | ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 135633 | 24.599 | ug/L | 97 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 129478 | 25.790 | ug/L | 99 |
| 57) Chlorobenzene | 8.564 | 112 | 389261 | 24.830 | ug/L | 98 |
| 58) 1,1,1,2-Tetrachloroethane | 8.626 | 131 | 126691 | 25.810 | ug/L | 99 |
| 59) Ethylbenzene | 8.585 | 106 | 217937 | 24.733 | ug/L | 98 |
| 60) Bromoform | 9.259 | 173 | 83622 | 25.714 | ug/L | 100 |
| 61) Styrene | 9.223 | 104 | 392012 | 25.616 | ug/L | 98 |
| 62) 1-Chlorohexane | 8.532 | 55 | 170008 | 23.932 | ug/L | 95 |
| 63) m,p-Xylene | 8.731 | 106 | 528467 | 49.733 | ug/L | 97 |
| 64) o-Xylene | 9.170 | 106 | 254818 | 25.170 | ug/L | 98 |
| 65) Isopropylbenzene | 9.495 | 105 | 656513 | 25.416 | ug/L | 99 |
| 67) Bromobenzene | 9.913 | 156 | 163103 | 25.218 | ug/L | 99 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 150597 | 24.245 | ug/L | 97 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 48602 | 25.633 | ug/L | 96 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 45084 | 23.848 | ug/L | 92 |
| 72) n-Propylbenzene | 9.934 | 91 | 800639 | 24.926 | ug/L | 99 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 505596 | 25.113 | ug/L | 98 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 544042 | 25.435 | ug/L | 99 |
| 75) 4-Chlorotoluene | 10.284 | 91 | 470761 | 25.246 | ug/L | 99 |
| 76) tert-Butylbenzene | 10.488 | 119 | 477889 | 25.018 | ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 543801 | 25.305 | ug/L | 98 |
| 78) sec-Butylbenzene | 10.682 | 105 | 705178 | 24.722 | ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 292769 | 24.735 | ug/L | 98 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 599202 | 25.621 | ug/L | 100 |
| 81) 1,4-Dichlorobenzene | 11.032 | 146 | 303564 | 24.913 | ug/L | 99 |
| 82) 1,2-Dichlorobenzene | 11.498 | 146 | 271249 | 25.384 | ug/L | 99 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 26341 | 26.367 | ug/L | 87 |
| 84) n-Butylbenzene | 11.315 | 91 | 537863 | 25.379 | ug/L | 100 |
| 85) 1,2,4-Trichlorobenzene | 13.213 | 180 | 188172 | 26.453 | ug/L | 99 |
| 86) Hexachlorobutadiene | 13.187 | 225 | 99683 | 26.148 | ug/L | 99 |
| 87) Naphthalene | 13.590 | 128 | 439571 | 25.659 | ug/L | 99 |
| 88) 1,2,3-Trichlorobenzene | 13.820 | 180 | 164841 | 26.279 | ug/L | 99 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091403.D
Acq On : 14 Sep 2017 10:27 am
Operator :
Sample : LCS-82366
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 14 13:47:24 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091404.D
Acq On : 14 Sep 2017 10:50 am
Operator :
Sample : LCSD-82366
Misc : LCSD
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 14 13:47:27 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 623770 | 200.00 | ug/L | | 82 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 449990 | 200.00 | ug/L | | 84 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 220713 | 200.00 | ug/L | | 83 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 157784 | 204.52 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 102.26% | | | | |
| 32) 1,2-Dichloroethane-d4 | 5.410 | 65 | 217169 | 223.86 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 111.93% | | | | |
| 51) Toluene-d8 | 7.058 | 98 | 593372 | 198.23 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.11% | | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 218218 | 199.59 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.80% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 164682 | 20.783 | ug/L | | 100 |
| 3) Chloromethane | 1.770 | 50 | 170924 | 20.603 | ug/L | | 99 |
| 4) Vinyl chloride | 1.848 | 62 | 155785 | 21.420 | ug/L | | 100 |
| 5) Bromomethane | 2.162 | 94 | 38439 | 15.655 | ug/L | | 99 |
| 6) Chloroethane | 2.282 | 64 | 67182 | 21.586 | ug/L | | 100 |
| 7) Trichlorofluoromethane | 2.424 | 101 | 232381 | 23.842 | ug/L | | 99 |
| 8) Trichlorotrifluoroethane | 2.947 | 101 | 152274 | 24.102 | ug/L | # | 99 |
| 9) Acrolein | 3.208 | 56 | 60671 | 58.672 | ug/L | | 99 |
| 10) Isopropyl Alcohol | 3.391 | 45 | 5585 | 85.284 | ug/L | # | 100 |
| 11) Acetone | 3.464 | 43 | 163928 | 106.971 | ug/L | | 98 |
| 12) Iodomethane | 3.041 | 142 | 61959 | 16.521 | ug/L | | 97 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 124923 | 23.425 | ug/L | | 97 |
| 14) Carbon disulfide | 2.941 | 76 | 415795 | 23.078 | ug/L | | 99 |
| 15) Methylene chloride | 3.428 | 84 | 133408 | 23.766 | ug/L | | 99 |
| 16) Methyl Acetate | 3.579 | 43 | 110547 | 23.686 | ug/L | | 97 |
| 17) trans-1,2-Dichloroethene | 3.579 | 96 | 135713 | 23.548 | ug/L | | 97 |
| 18) Acrylonitrile | 4.144 | 53 | 103347 | 45.211 | ug/L | | 100 |
| 19) MTBE | 3.663 | 73 | 392981 | 25.202 | ug/L | | 98 |
| 20) Tert-Butanol | 3.736 | 59 | 40689 | 142.442 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 495228 | 23.790 | ug/L | | 99 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 254995 | 24.215 | ug/L | | 98 |
| 23) Vinyl acetate | 4.312 | 43 | 802265 | 61.578 | ug/L | | 99 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 437232 | 25.026 | ug/L | | 99 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 152922 | 24.217 | ug/L | | 97 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 201604 | 26.026 | ug/L | | 97 |
| 27) Bromochloromethane | 4.746 | 128 | 66046 | 24.629 | ug/L | | 96 |
| 28) Cyclohexane | 4.756 | 84 | 231890 | 22.791 | ug/L | | 100 |
| 29) Chloroform | 4.803 | 83 | 260235 | 24.661 | ug/L | | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 203755 | 23.984 | ug/L | | 100 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 227136 | 25.417 | ug/L | | 100 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 193673 | 25.644 | ug/L | | 99 |
| 35) Benzene | 5.300 | 78 | 567435 | 23.669 | ug/L | | 99 |
| 36) 2-Butanone | 5.049 | 43 | 329620 | 116.698 | ug/L | | 99 |
| 37) Carbon tetrachloride | 4.934 | 117 | 198947 | 25.824 | ug/L | | 99 |
| 38) Tert-amyl Methyl Ether | 5.384 | 73 | 364749 | 25.126 | ug/L | | 100 |
| 39) Trichloroethene | 5.813 | 130 | 153410 | 24.033 | ug/L | | 96 |
| 40) Methyl Cyclohexane | 5.808 | 55 | 240935 | 23.063 | ug/L | | 96 |
| 41) Dibromomethane | 6.179 | 93 | 81958 | 24.247 | ug/L | | 99 |
| 42) Bromodichloromethane | 6.315 | 83 | 174198 | 25.174 | ug/L | | 100 |
| 43) 1,2-Dichloropropane | 6.263 | 63 | 143104 | 23.877 | ug/L | | 98 |
| 44) 2-Chloroethylvinylether | 6.817 | 63 | 98097 | 23.035 | ug/L | | 98 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 211589 | 24.702 | ug/L | | 99 |

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091404.D
Acq On : 14 Sep 2017 10:50 am
Operator :
Sample : LCSD-82366
Misc : LCSD
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 14 13:47:27 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

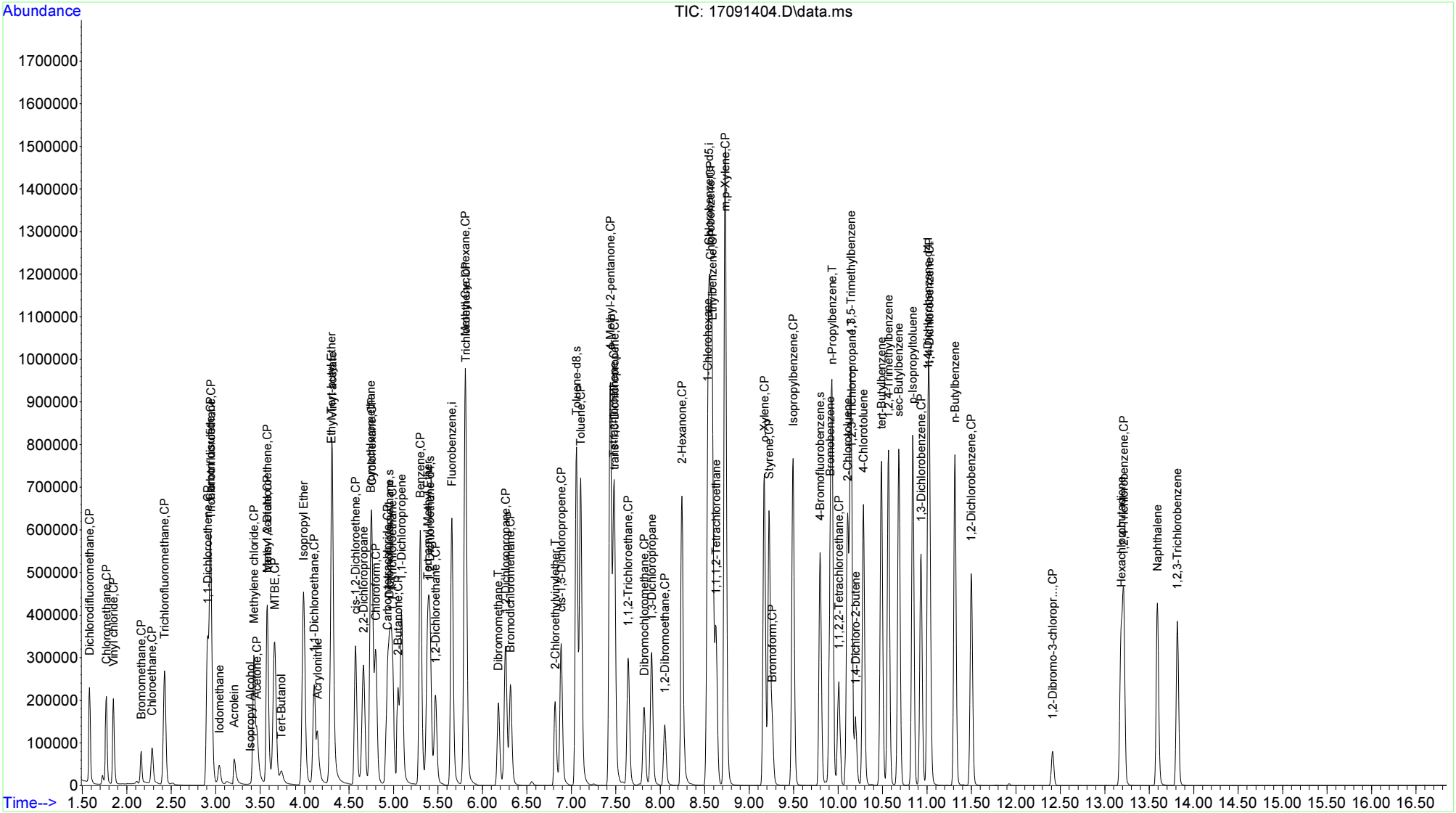
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 172102 | 25.268 | ug/L | 97 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 114414 | 24.482 | ug/L | 99 |
| 48) Toluene | 7.105 | 92 | 355600 | 23.740 | ug/L | 97 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 773942 | 116.420 | ug/L | 99 |
| 52) 2-Hexanone | 8.245 | 43 | 547014 | 116.884 | ug/L | 99 |
| 53) Dibromochloromethane | 7.821 | 129 | 121943 | 24.243 | ug/L | 100 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 205999 | 23.927 | ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 131028 | 23.644 | ug/L | 99 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 121989 | 24.176 | ug/L | 97 |
| 57) Chlorobenzene | 8.564 | 112 | 371822 | 23.599 | ug/L | 98 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 119102 | 24.174 | ug/L | 99 |
| 59) Ethylbenzene | 8.585 | 106 | 208185 | 23.507 | ug/L | 93 |
| 60) Bromoform | 9.259 | 173 | 77548 | 23.800 | ug/L | 99 |
| 61) Styrene | 9.223 | 104 | 373098 | 24.257 | ug/L | 99 |
| 62) 1-Chlorohexane | 8.532 | 55 | 162039 | 22.695 | ug/L | 96 |
| 63) m,p-Xylene | 8.731 | 106 | 508046 | 47.570 | ug/L | 99 |
| 64) o-Xylene | 9.171 | 106 | 242594 | 23.841 | ug/L | 98 |
| 65) Isopropylbenzene | 9.495 | 105 | 624658 | 24.061 | ug/L | 99 |
| 67) Bromobenzene | 9.913 | 156 | 154283 | 23.505 | ug/L | 99 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 143342 | 22.739 | ug/L | 100 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 46333 | 24.079 | ug/L | 98 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 41702 | 21.736 | ug/L | 87 |
| 72) n-Propylbenzene | 9.934 | 91 | 763718 | 23.428 | ug/L | 98 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 482454 | 23.613 | ug/L | 99 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 520675 | 23.986 | ug/L | 98 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 449568 | 23.757 | ug/L | 98 |
| 76) tert-Butylbenzene | 10.489 | 119 | 460534 | 23.756 | ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 525677 | 24.104 | ug/L | 98 |
| 78) sec-Butylbenzene | 10.682 | 105 | 681726 | 23.550 | ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 280050 | 23.314 | ug/L | 99 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 570721 | 24.046 | ug/L | 99 |
| 81) 1,4-Dichlorobenzene | 11.027 | 146 | 287455 | 23.246 | ug/L | 98 |
| 82) 1,2-Dichlorobenzene | 11.498 | 146 | 255816 | 23.589 | ug/L | 100 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 24874 | 24.603 | ug/L | 91 |
| 84) n-Butylbenzene | 11.315 | 91 | 520924 | 24.220 | ug/L | 99 |
| 85) 1,2,4-Trichlorobenzene | 13.214 | 180 | 177805 | 24.629 | ug/L | 99 |
| 86) Hexachlorobutadiene | 13.187 | 225 | 93548 | 24.180 | ug/L | 98 |
| 87) Naphthalene | 13.590 | 128 | 418672 | 24.082 | ug/L | 99 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 155692 | 24.457 | ug/L | 99 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091404.D
Acq On : 14 Sep 2017 10:50 am
Operator :
Sample : LCSD-82366
Misc : LCSD
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 14 13:47:27 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091406.D
Acq On : 14 Sep 2017 11:38 am
Operator :
Sample : MB-82366
Misc : MBLK
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 14 13:47:33 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

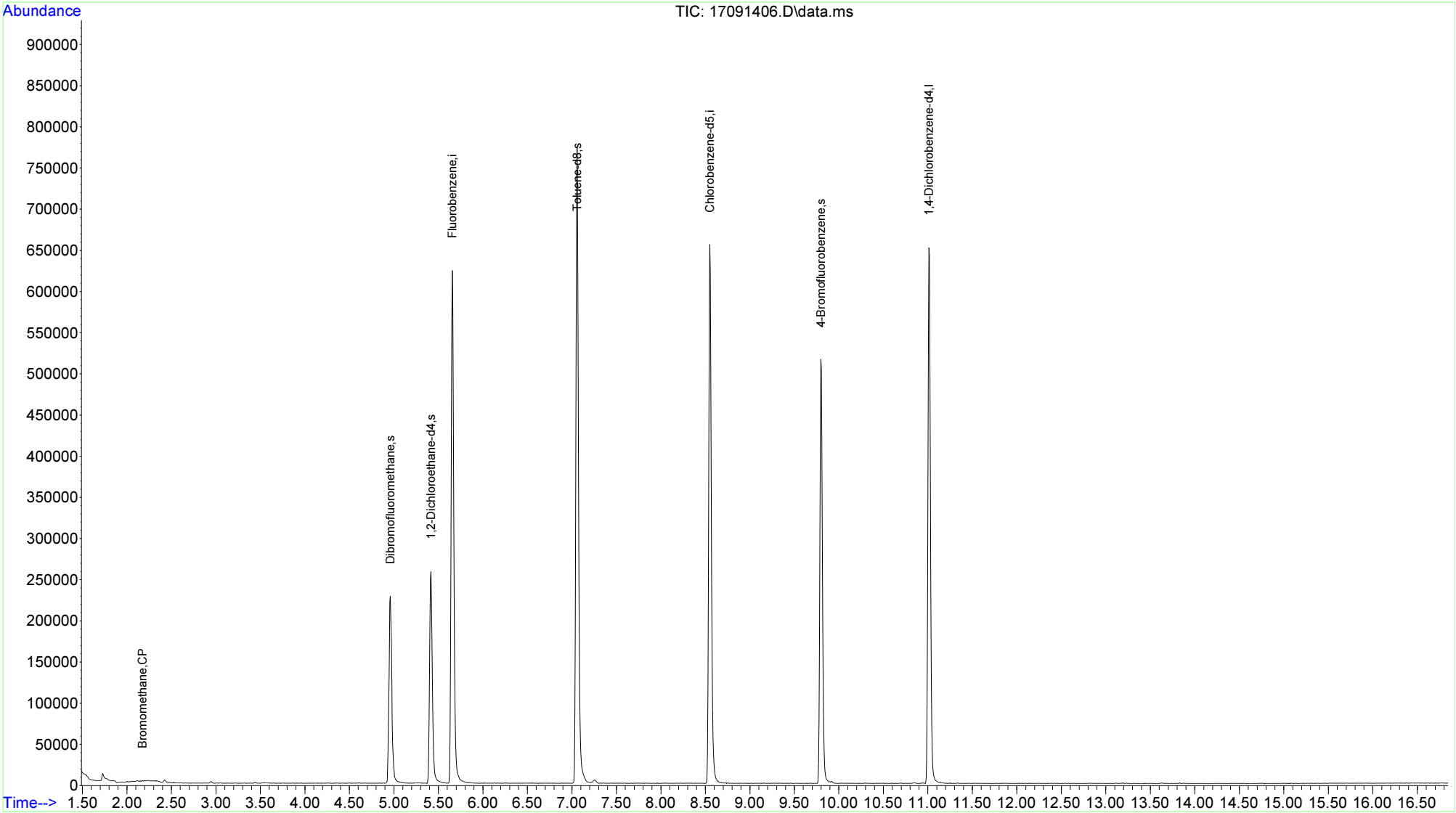
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 617991 | 200.00 | ug/L | 81 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 453348 | 200.00 | ug/L | 85 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 214745 | 200.00 | ug/L | 81 |
| System Monitoring Compounds | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.960 | 113 | 157272 | 205.76 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 102.88% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 208641 | 217.08 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 108.54% | | | |
| 51) Toluene-d8 | 7.058 | 98 | 588529 | 195.16 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 97.58% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 212248 | 199.52 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.76% | | | |
| Target Compounds | | | | | | Qvalue |
| 5) Bromomethane | 2.173 | 94 | 1097 | 0.451 | ug/L # | 11 |
| 11) Acetone | 3.522 | 43 | 564 | Below Cal | # | 44 |
| 15) Methylene chloride | 3.433 | 84 | 575 | Below Cal | # | 63 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091406.D
Acq On : 14 Sep 2017 11:38 am
Operator :
Sample : MB-82366
Misc : MBLK
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 14 13:47:33 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091409.D
Acq On : 14 Sep 2017 12:49 pm
Operator :
Sample : 1709100-02A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 14 13:48:05 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

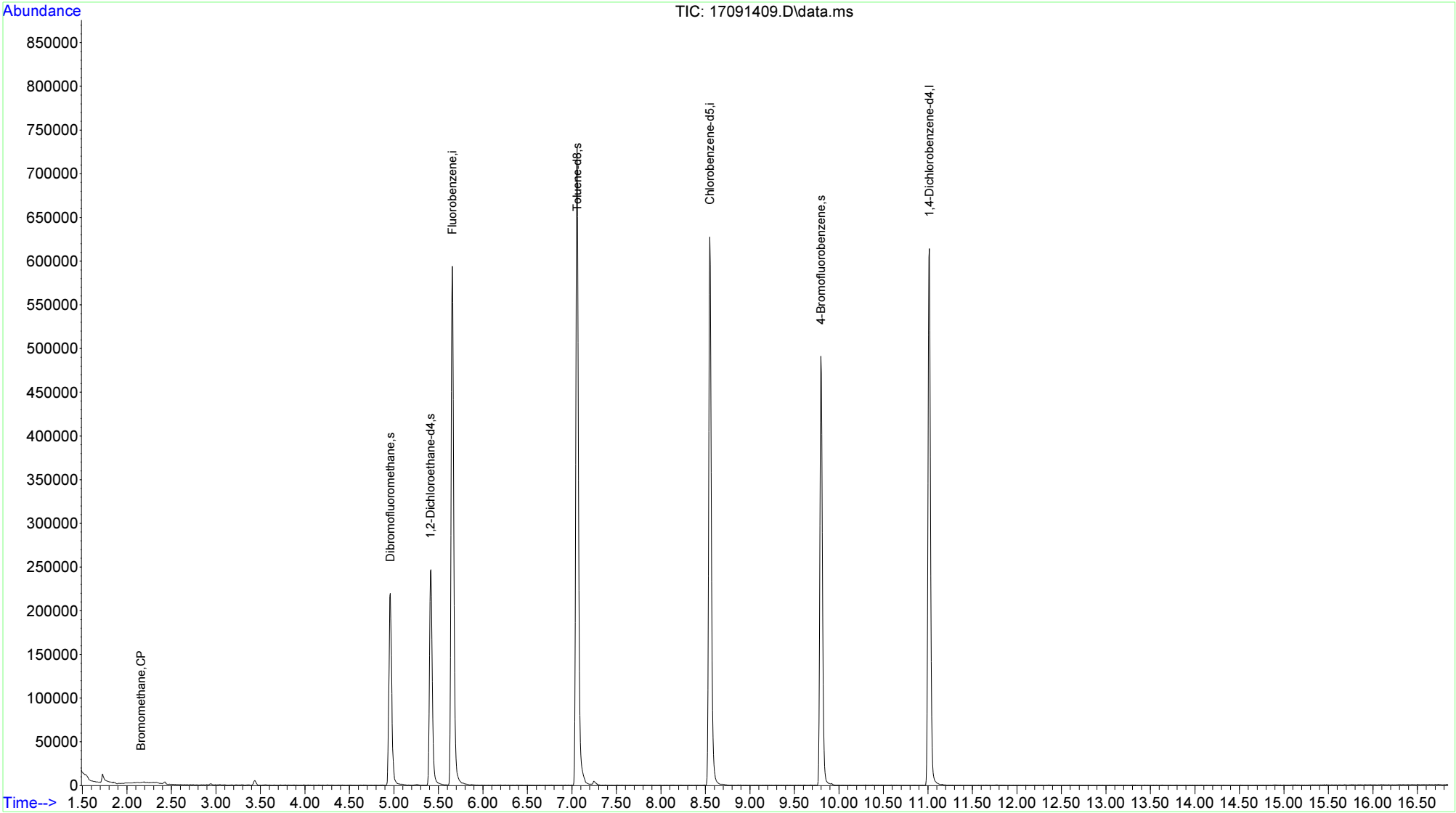
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 598753 | 200.00 | ug/L | 79 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 429450 | 200.00 | ug/L | 81 |
| 66) 1,4-Dichlorobenzene-d4 | 11.017 | 152 | 204853 | 200.00 | ug/L | 77 |
| System Monitoring Compounds | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.960 | 113 | 150951 | 203.84 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 101.92% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.410 | 65 | 202984 | 217.98 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 108.99% | | | |
| 51) Toluene-d8 | 7.057 | 98 | 560900 | 196.35 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.17% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 202271 | 199.33 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.67% | | | |
| Target Compounds | | | | | | Qvalue |
| 5) Bromomethane | 2.157 | 94 | 829 | 0.352 | ug/L # | 11 |

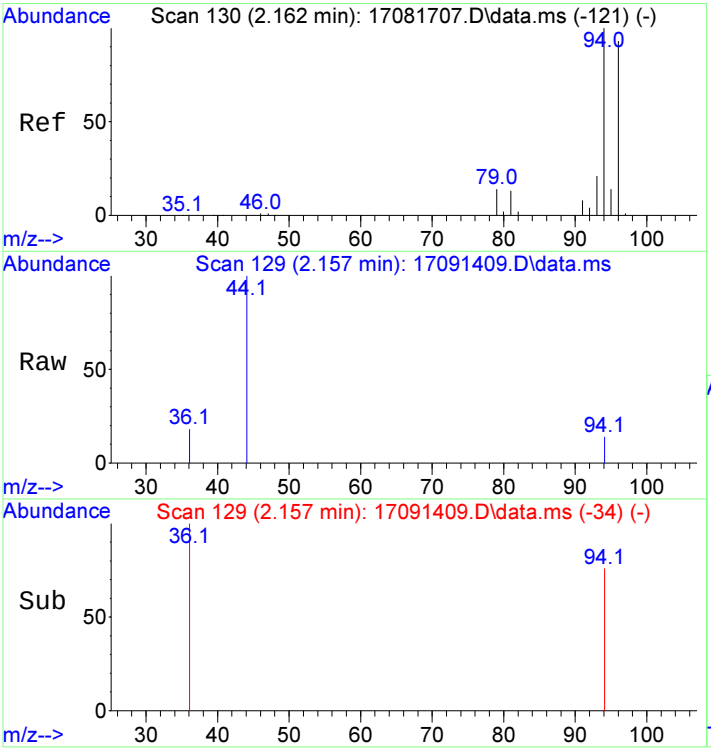
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091409.D
Acq On : 14 Sep 2017 12:49 pm
Operator :
Sample : 1709100-02A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 1

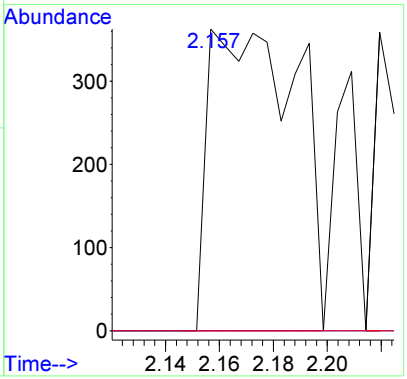
Quant Time: Sep 14 13:48:05 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration






#5
Bromomethane
Concen: 0.352 ug/L
RT: 2.157 min Scan# 129
Delta R.T. -0.005 min
Lab File: 17091409.D
Acq: 14 Sep 2017 12:49 pm
QValue: 11
Tgt Ion: 94 Resp: 829

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 94 | 100 | | |
| 96 | 0.0 | 73.0 | 113.0# |
| 79 | 0.0 | 0.0 | 34.1 |



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091414.D
Acq On : 14 Sep 2017 2:46 pm
Operator :
Sample : 1709100-01A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 14 15:30:23 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

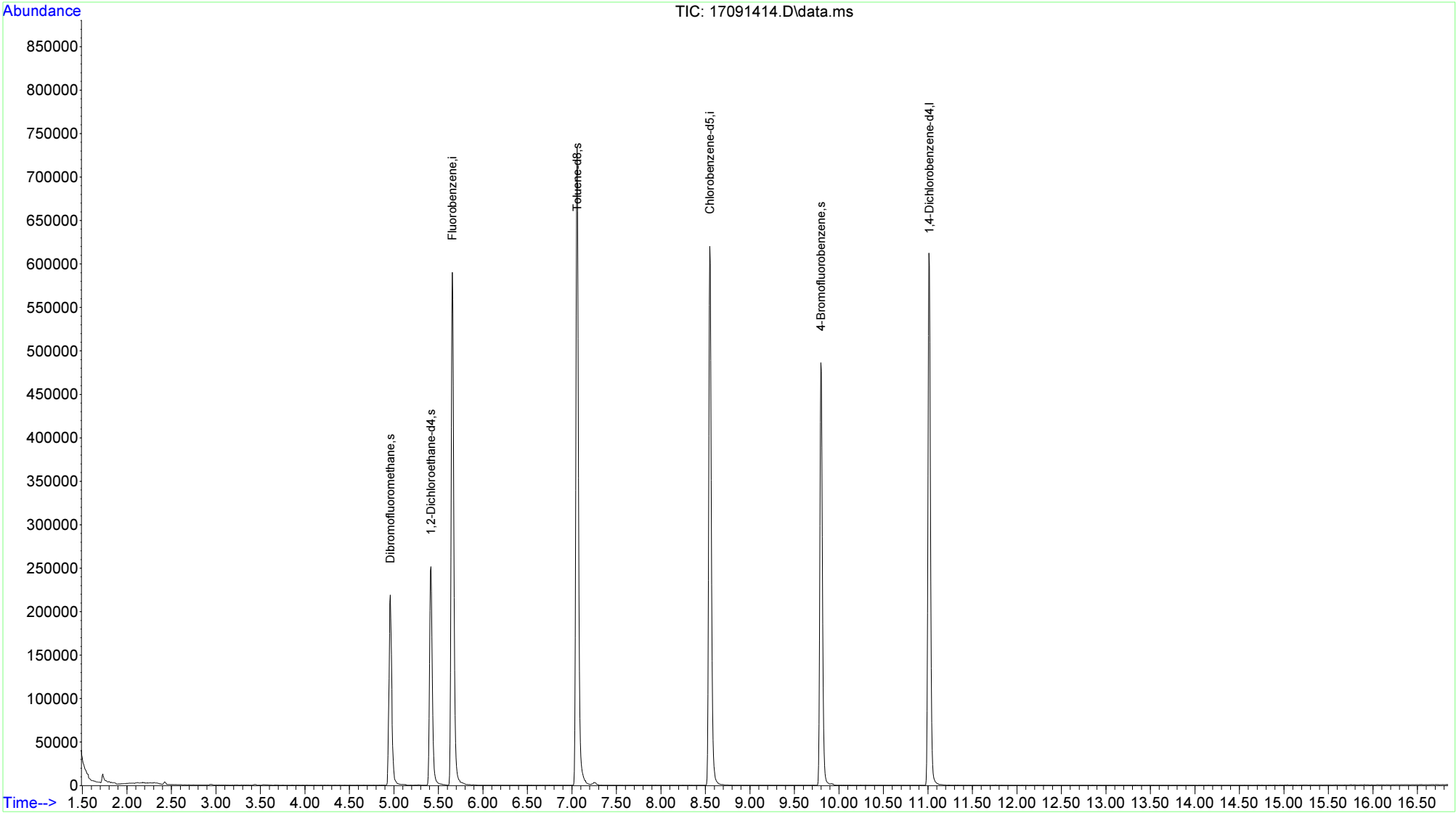
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 588130 | 200.00 | ug/L | 77 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 426306 | 200.00 | ug/L | 80 |
| 66) 1,4-Dichlorobenzene-d4 | 11.017 | 152 | 205028 | 200.00 | ug/L | 77 |
| System Monitoring Compounds | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.960 | 113 | 146328 | 201.16 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 100.58% | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 204751 | 223.85 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 111.93% | | |
| 51) Toluene-d8 | 7.058 | 98 | 550889 | 194.26 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 97.13% | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 200363 | 197.28 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 98.64% | | |
| Target Compounds | | | | | | Qvalue |
| 11) Acetone | 3.532 | 43 | 1025 | Below Cal | # | 44 |
| 15) Methylene chloride | 3.433 | 84 | 571 | Below Cal | # | 54 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170914\
Data File : 17091414.D
Acq On : 14 Sep 2017 2:46 pm
Operator :
Sample : 1709100-01A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 14 15:30:23 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



# GCMS5
# Calibration Curve
# For

# DHL Work Order
# 1709100

CAL ID: 793

# Method 8260C Calibration Curve Sheet

**Instrument ID: GCMS #5** **Calibration File Name: GCMS5_170817X.CAL**

| Review Item | Acceptance Criteria | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|---|
| 1. Are all standards within expiration dates? | Primary Stocks = 1 year<br>Intermediate Standards = 6 months | X | | | X |
| 2. Are all manual integrations listed on MI tracking form? **(DoD Projects only)** | Manual Integration Tracking Form | | | X | X |
| 3. Has the BFB tune been performed prior to ICAL? | BFB Tune Eval Report<br>MUST PASS – No Variance allowed | X | | | X |
| 4. Does the ICAL curve meet criteria? Use average RF only if %RSD < 15% | Response Factor Report<br>Minimum RFs - Table 4<br>%RSD ≤ 15%<br>COD $R^2$ ≥ 0.990 | X | | | X |
| 5. Does the low calibration point have all analytes printed out? Cross-check RF report - some analytes have elevated MDLS (ketones, Iodomethane, alcohols, late eluters) | All analytes that are used in the low point must be printed out | X | | | X |
| 6. Has the low point been reprocessed under the new ICAL curve and meets criteria? | 70-130% recovery<br>0.928 ppb (0.6496-1.2064)<br>4.64 ppb (3.248-6.032) | X | | | X |
| 7. Has the SSCV been analyzed and meets criteria? | 80-120% recovery - DOD<br>46.4 ppb (37.12-55.68)<br>116 ppb (92.8-139.2)<br><br>70-130% - TCEQ QAPP<br>46.4 ppb (32.48-60.32)<br>116 ppb (81.2-150.8) | | X | | X |

Second-Level Review: Date: **08/23/2017**

**Table 4 - Minimum RF for ICAL and ICV**

| Volatile Compounds | Min RF | Volatile Compounds | Min RF |
|---|---|---|---|
| Dichlorodifluoromethane | 0.100 | 1,2-Dichloropropane | 0.100 |
| Chloromethane | 0.100 | Bromodichloromethane | 0.200 |
| Vinyl chloride | 0.100 | cis-1,3-Dichloropropene | 0.200 |
| Bromomethane | 0.100 | Trans-1,3-Dichloropropene | 0.100 |
| Chloroethane | 0.100 | 4-Methyl-2-pentanone | 0.100 |
| Trichlorofluoromethane | 0.100 | Toluene | 0.400 |
| 1,1-Dichloroethene | 0.100 | 1,1,2-Trichloroethane | 0.100 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.100 | Tetrachloroethene | 0.200 |
| Acetone | 0.100 | 2-Hexanone | 0.100 |
| Carbon disulfide | 0.100 | Dibromochloromethane | 0.100 |
| Methyl Acetate | 0.100 | 1,2-Dibromoethane | 0.100 |
| Methylene chloride | 0.100 | Chlorobenzene | 0.500 |
| trans-1,2-Dichloroethene | 0.100 | Ethylbenzene | 0.100 |
| cis-1,2-Dichloroethene | 0.100 | meta-/para-Xylene | 0.100 |
| Methyl tert-Butyl Ether | 0.100 | ortho-Xylene | 0.300 |
| 1,1-Dichloroethane | 0.200 | Styrene | 0.300 |
| 2-Butanone | 0.100 | Bromoform | 0.100 |
| Chloroform | 0.200 | Isopropylbenzene | 0.100 |
| 1,1,1-Trichloroethane | 0.100 | 1,1,2,2-Tetrachloroethane | 0.300 |
| Cyclohexane | 0.100 | 1,3-Dichlorobenzene | 0.600 |
| Carbon tetrachloride | 0.100 | 1,4-Dichlorobenzene | 0.500 |
| Benzene | 0.500 | 1,2-Dichlorobenzene | 0.400 |
| 1,2-Dichloroethane | 0.100 | 1,2-Dibromo-3-chloropropane | 0.050 |
| Trichloroethene | 0.200 | 1,2,4-Trichlorobenzene | 0.200 |
| Methylcyclohexane | 0.100 | | |

ICAL Comments: **SSCV out: Acetone low for DOD in SSCV (73.82%). IPA and TBA high in SSCV. All other compounds within 20%. No Manual Integrations.**

# GCMS5_170817X
# CALIBRATION CURVE

| Standards | Conc. | Standard DHL ID | Level 1<br>0.928 ppb | Spike<br>4.64 ppb | Level 2<br>4.64 ppb | Level 3<br>9.28 ppb | Level 4<br>18.6 ppb | Level 5<br>27.8 ppb | Level 6<br>46.4 ppb |
|---|---|---|---|---|---|---|---|---|---|
| Liquids + Added Stds | 200 ppm* | VLP170816 | 5x of 4.64 ppb | 1 µL | 1 µL | 2 µL | 4 µL | 6 µL | 10 µL |
| Gas | 200 ppm | VGP170816 | 5x of 4.64 ppb | 1 µL | 1 µL | 2 µL | 4 µL | 6 µL | 10 µL |
| Carbon Disulfide | 200 ppm | VCDP170816 | 5x of 4.64 ppb | 1 µL | 1 µL | 2 µL | 4 µL | 6 µL | 10 µL |
| Ketone | 200 ppm | VKP170816-1 | 5x of 23.2 ppb* | 5 µL* | 5 µL** | 10 µL** | ***2 µl* | ***3 µl* | ***5 µL* |
| 2-CEVE | 200 ppm | VCEP170816 | 5x of 4.64 ppb | 1 µL | 1 µL | 2 µL | 4 µL | 6 µL | 10 µL |
| Iodomethane | 200 ppm | VIMP170816 | 5x of 4.64 ppb | 1 µL | 1 µL | 2 µL | 4 µL | 6 µL | 10 µL |
| IPA | 500 ppm | VPNP170816-1 | 5x of 46.4 ppb** | 4 µL** | 2 µL** | 4 µL** | 6 µL** | 8 µL** | 10 µL** |
| Acrolein/ Vinyl Acetate | 500 ppm | VAVP170816-1 | 5x of 46.4 ppb** | 4 µL** | 2 µL** | 4 µL** | 6 µL** | 8 µL** | 10 µL** |
| MCyclo/Acet/Freon/Cyhex | 200 ppm | VMTP170816 | 5x of 4.64 ppb | 1 µL | 1 µL | 2 µL | 4 µL | 6 µL | 10 µL |
| *In liquid std: Acrylonitrile = 400 ppm & Tert-Butanol = 1000 pp | | | **9.28 ppb<br>*4.64 ppb | **46.4ppb<br>*23.2 ppb | **23.2ppb | **46.4ppb | **69.6ppb<br>*92.8 ppb | ** 92.8ppb<br>*139 ppb<br>***2000 ppb ketones VKP170515B | **116ppb<br>*232 ppb |

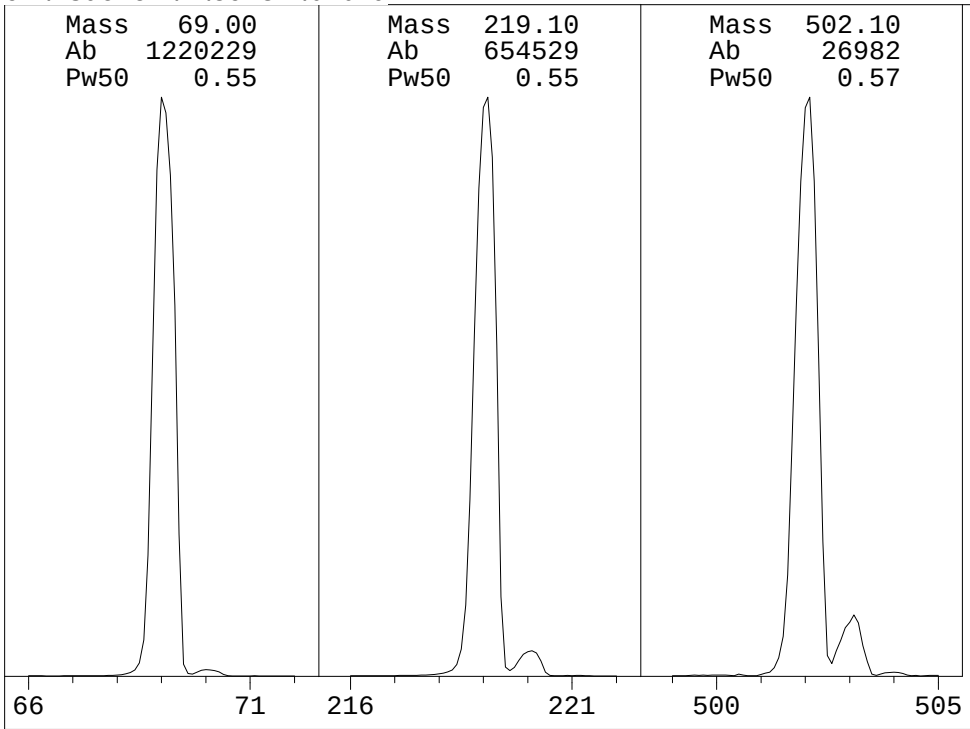
| Standards | Conc. | Standard DHL ID | Level 7<br>92.8 ppb | Level 8<br>186 ppb |
|---|---|---|---|---|
| Liquids | 2,000ppm | VLP170815A | 2 µL | 4 µL |
| Gas | 2,000ppm | VGP170515C | 2 µL | 4 µL |
| Carbon Disulfide | 2,000ppm | VCDP160823-01B | 2 µL | 4 µL |
| Ketone | 2,000ppm | VKP170515B | 10 µL*** | 20 µL*** |
| 2-CEVE | 2,000ppm | VCEP170202A | 2 µL | 4 µL |
| Iodomethane | 2,000ppm | VIMP170515A | 2 µL | 4 µL |
| IPA | 5,000ppm | VPNP170816 | 2 µL** | 4 µL** |
| Acrolein/ Vinyl Acetate | 5,000ppm | VAVP170816 | 2 µL** | 4 µL** |
| Acrylonitrile | 4,000ppm | VANP170815 | 2 µL | 4 µL |
| Oxygenated Gasoline | 2,000ppm | VOGAP160823-01B | 2 µL | 4 µL |
| 1,4-dichloro-2-butene | 2,000ppm | VDBP160823-01B | 2 µL | 4 µL |
| 1-Chlorohexane | 2,000ppm | VCHP160823-01B | 2 µL | 4 µL |
| Methyl Acetate | 2,000ppm | VMAP170815 | 2 µL | 4 µL |
| Methyl Cyclohexane | 1,000ppm | VMCP170515A | 4 µL | 8 µL |
| Cyclohexane | 2,000ppm | VCP160823-01A | 2 µL | 4 µL |
| Freon 113 | 2,000ppm | VTTP160823-01B | 2 µL | 4 µL |
| | | | **232 ppb<br>***464 ppb | **464 ppb<br>***928 ppb |

| SSCV | | | Amount |
|---|---|---|---|
| Standards | Conc. | DHL ID# | 46.4 ppb |
| Liquids | 2000ppm | VLS170515A | 1 µL |
| Gas | 200ppm | VGS151013-01N | 1 µL |
| Carbon Disulfide | 5,000ppm | VCDS160114-01A | 1 µL ** |
| Ketone | 5,000ppm | VKS160114-01A | 1 µL ** |
| 2-CEVE | 2,000ppm | VCES140730-01D | 1 µL |
| Iodomethane | 5,000ppm | VIMS160114-01A | 1 µL |
| IPA | 2,000ppm | VPNS170816 | 1 µL ** |
| Acrolein/ Vinyl Acetate | 5,000ppm | VAVS170816 | 1 µL** |
| Acrylonitrile | 4,000ppm | VANS170815 | 1 µL* |
| Oxygenated Gasoline | 2,000ppm | VOGAS160114-01A | 1 µL |
| 1,4-dichloro-2-butene | 2,000ppm | VDBS160823-01A | 1 µL |
| 1-Chlorohexane | 1,000ppm | VCHS160114-01A | 2 µL |
| Methyl Acetate | 1,000ppm | VMAS160824-01A | 2 µL |
| Methyl Cyclohexane | 1,000ppm | VMCS160824-01B | 2 µL |
| Cyclohexane | 1,000ppm | VCS150508-01B | 2 µL |
| Freon 113 | 1,000ppm | VTTS160824-01B | 2 µL |
| | | *92.8 ppb | **116 ppb |

Don Winston — 8-21-2017 — 08/23/2017

Analyst — Date — 2nd Level Review

Thu Aug 17 11:04:40 2017 Instrument: GCMS #5
C:\msdchem\1\5973N\bfb.u US90440011

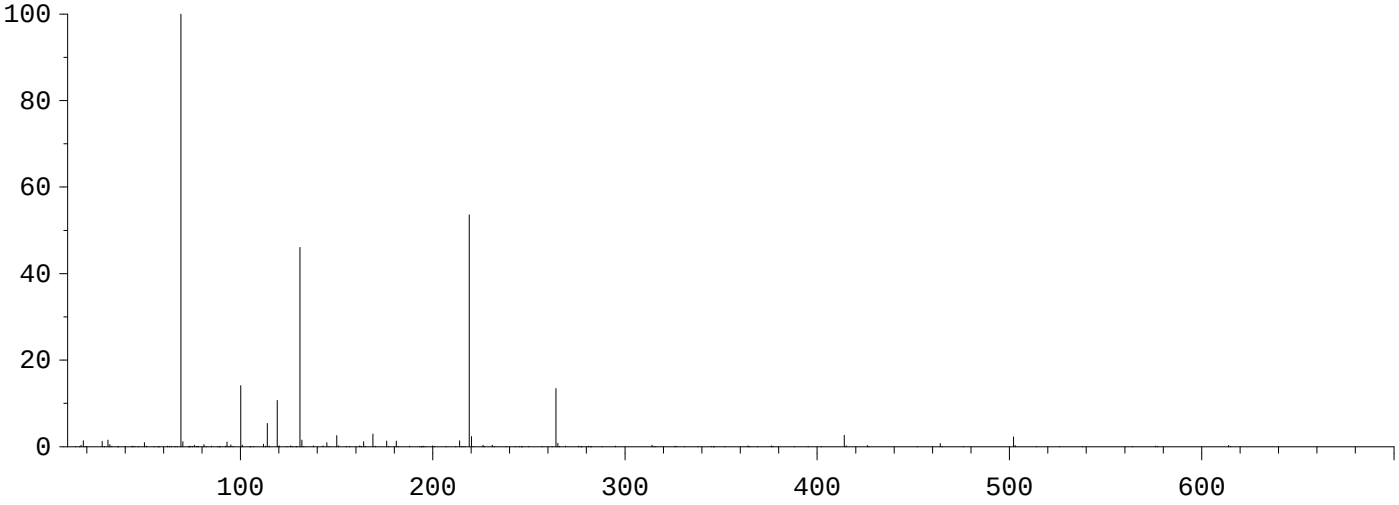



| | | | |
|---|---|---|---|
| Ion Pol | Pos | MassGain | 126 |
| | | MassOffs | -10 |
| Emission | 34.6 | AmuGain | 2220 |
| EIEnrgy | 69.9 | AmuOffs | 130 |
| Filament | 2 | Wid219 | -0.035 |
| | | DC Pol | Pos |
| Repeller | 31.63 | | |
| IonFcus | 97.7 | HEDEnab | On |
| EntLens | 0.0 | EMVolts | 1541 |
| EntOffs | Var | | |
| | | Samples | 8 |
| PFTBA | Open | Averages | 3 |
| | | Stepsize | 0.10 |

Temperatures and Pressures:

| | | | |
|---|---|---|---|
| MS Source | 230 | Foreline | 50 |
| MS Quad | 150 | | |

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
154 peaks Base: 69.10 Abundance: 1073152




| Mass | Abund | Rel Abund | Iso Mass | Iso Abund | Iso Ratio |
|---|---|---|---|---|---|
| 69.10 | 1073152 | 100.00 | 70.10 | 12385 | 1.15 |
| 219.10 | 575360 | 53.61 | 220.10 | 25416 | 4.42 |
| 502.10 | 24200 | 2.26 | 503.10 | 2604 | 10.76 |

Air/Water Check: H20~1.41% N2~1.24% O2~0.49% CO2~0.15% N2/H2O~87.64%

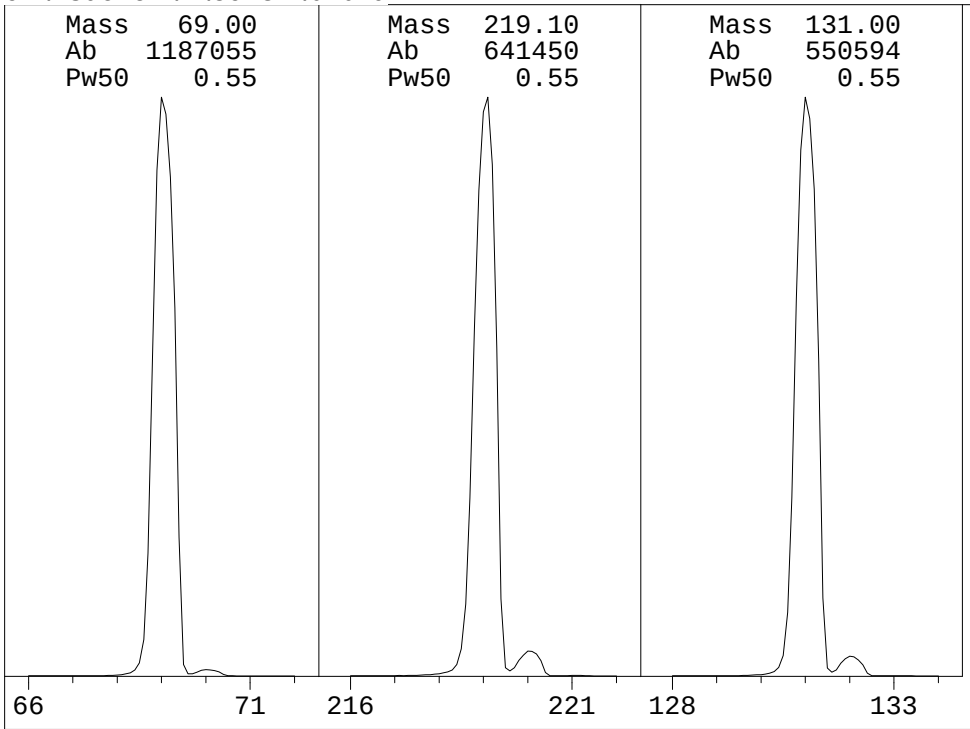
Column(1) Flow: 0.8 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 128 volts using ion 69; EM Gain 93572
Repeller Maximum 40 volts using ion 69; Gain Factor 0.94

MassGain Values(Samples): 130(3) 124(2) 128(1) 127(0) 126(FS)

| TARGET MASS: | 50 | 69 | 131 | 219 | 414 | 502 | 800 |
|---|---|---|---|---|---|---|---|
| Amu Offset: | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 |
| Entrance Lens Offset: | 17.8 | 16.6 | 16.3 | 17.1 | 16.8 | 17.3 | 17.3 |
| Target Abund(%): | 1.0 | 100.0 | 45.0 | 55.0 | 2.4 | 2.0 | |
| Actual Tune Abund(%): | 1.0 | 100.0 | 46.1 | 58.6 | 2.6 | 2.3 | |

Thu Aug 17 11:06:11 2017 Instrument: GCMS #5
C:\msdchem\1\5973N\bfb.u US90440011

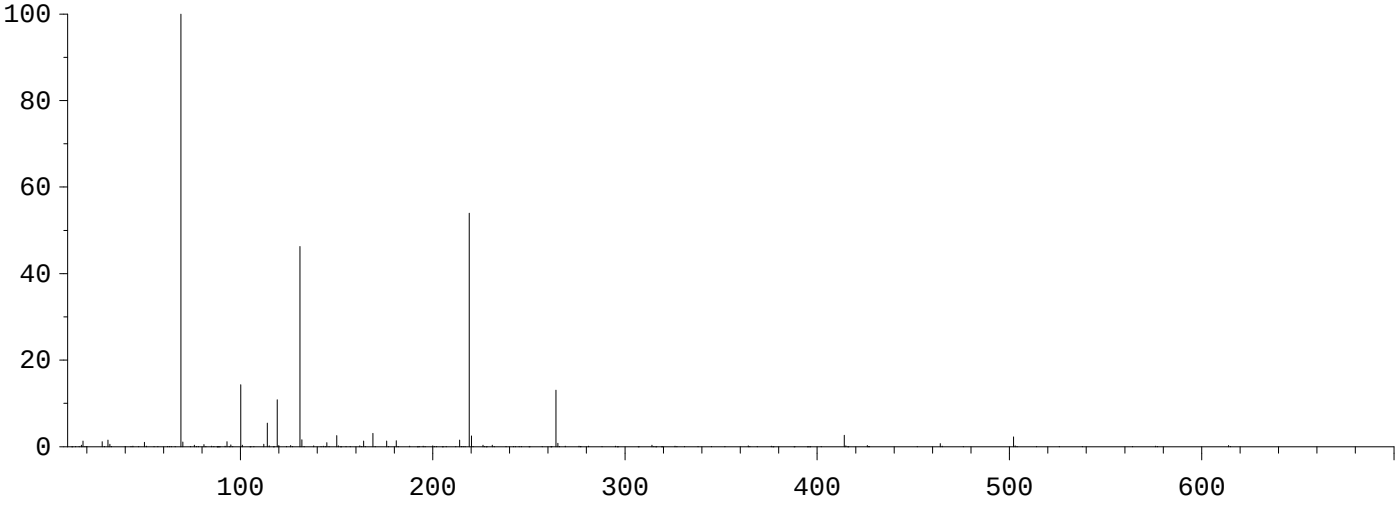



| | | | |
|---|---|---|---|
| Ion Pol | Pos | MassGain | 126 |
| | | MassOffs | -10 |
| Emission | 34.6 | AmuGain | 2220 |
| EIEnrgy | 69.9 | AmuOffs | 130 |
| Filament | 2 | Wid219 | -0.035 |
| | | DC Pol | Pos |
| Repeller | 31.63 | | |
| IonFcus | 97.7 | HEDEnab | On |
| EntLens | 0.0 | EMVolts | 1541 |
| EntOffs | Var | | |
| | | Samples | 8 |
| PFTBA | Open | Averages | 3 |
| | | Stepsize | 0.10 |

Temperatures and Pressures:

| | | | |
|---|---|---|---|
| MS Source | 230 | Foreline | 50 |
| MS Quad | 150 | | |

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
163 peaks Base: 69.10 Abundance: 1050624




| Mass | Abund | Rel Abund | Iso Mass | Iso Abund | Iso Ratio |
|---|---|---|---|---|---|
| 69.10 | 1050624 | 100.00 | 70.10 | 11057 | 1.05 |
| 219.10 | 567360 | 54.00 | 220.10 | 26064 | 4.59 |
| 131.00 | 486080 | 46.27 | 132.00 | 16576 | 3.41 |

Air/Water Check: H20~1.34% N2~1.14% O2~0.55% CO2~0.15% N2/H2O~85.33%

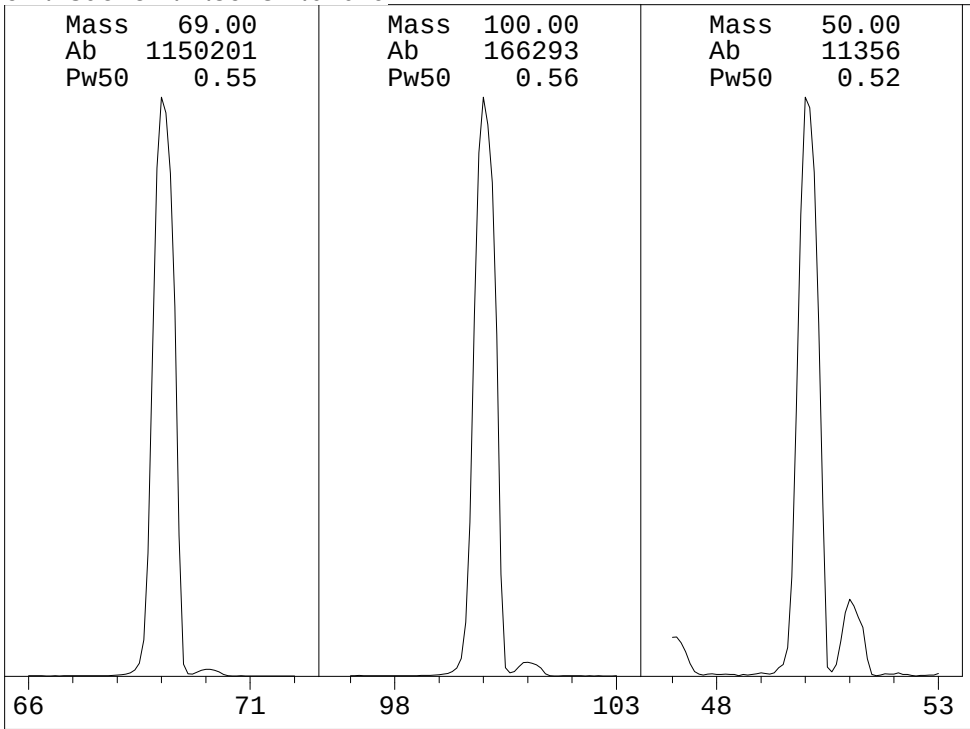
Column(1) Flow: 0.8 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 128 volts using ion 69; EM Gain 99771
Repeller Maximum 40 volts using ion 69; Gain Factor 1.00

MassGain Values(Samples): 130(3) 124(2) 128(1) 127(0) 126(FS)

| TARGET MASS: | 50 | 69 | 131 | 219 | 414 | 502 | 800 |
|---|---|---|---|---|---|---|---|
| Amu Offset: | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 |
| Entrance Lens Offset: | 17.8 | 16.6 | 16.3 | 17.1 | 16.8 | 17.3 | 17.3 |
| Target Abund(%): | 1.0 | 100.0 | 45.0 | 55.0 | 2.4 | 2.0 | |
| Actual Tune Abund(%): | 1.0 | 100.0 | 46.3 | 54.0 | 2.6 | 2.3 | |

Thu Aug 17 11:07:34 2017 Instrument: GCMS #5
C:\msdchem\1\5973N\bfb.u US90440011

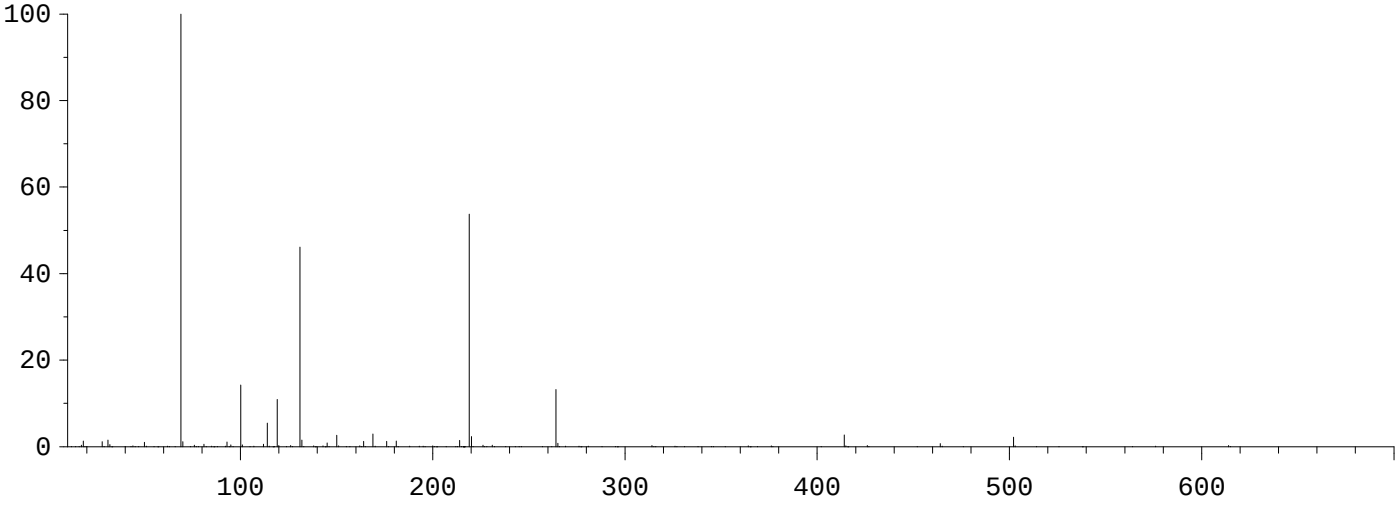



| | | | |
|---|---|---|---|
| Ion Pol | Pos | MassGain | 126 |
| | | MassOffs | -10 |
| Emission | 34.6 | AmuGain | 2220 |
| EIEnrgy | 69.9 | AmuOffs | 130 |
| Filament | 2 | Wid219 | -0.035 |
| | | DC Pol | Pos |
| Repeller | 31.63 | | |
| IonFcus | 97.7 | HEDEnab | On |
| EntLens | 0.0 | EMVolts | 1541 |
| EntOffs | Var | | |
| | | Samples | 8 |
| PFTBA | Open | Averages | 3 |
| | | Stepsize | 0.10 |

Temperatures and Pressures:

| | | | |
|---|---|---|---|
| MS Source | 230 | Foreline | 50 |
| MS Quad | 150 | | |

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
152 peaks Base: 69.10 Abundance: 1018048




| Mass | Abund | Rel Abund | Iso Mass | Iso Abund | Iso Ratio |
|---|---|---|---|---|---|
| 69.10 | 1018048 | 100.00 | 70.10 | 11762 | 1.16 |
| 100.10 | 145088 | 14.25 | 101.10 | 3864 | 2.66 |
| 50.10 | 10281 | 1.01 | 51.10 | 1266 | 12.31 |

Air/Water Check: H20~1.27% N2~1.16% O2~0.49% CO2~0.16% N2/H2O~91.10%

Column(1) Flow: 0.8 Column(2): 0 ml/min. Interface Temp: 230

Ramp Criteria:
Ion Focus Maximum 128 volts using ion 69; EM Gain 89069
Repeller Maximum 40 volts using ion 69; Gain Factor 0.89

MassGain Values(Samples): 130(3) 124(2) 128(1) 127(0) 126(FS)

| TARGET MASS: | 50 | 69 | 131 | 219 | 414 | 502 | 800 |
|---|---|---|---|---|---|---|---|
| Amu Offset: | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 | 130.0 |
| Entrance Lens Offset: | 17.8 | 16.6 | 16.3 | 17.1 | 16.8 | 17.3 | 17.3 |
| Target Abund(%): | 1.0 | 100.0 | 45.0 | 55.0 | 2.4 | 2.0 | |
| Actual Tune Abund(%): | 1.0 | 100.0 | 46.1 | 58.8 | 2.7 | 2.2 | |

Response Factor Report GCMS #5

Method Path : C:\msdchem\1\methods\
Method File : 170817X.M
Title : M-8260S
Last Update : Thu Aug 17 14:33:11 2017
Response Via : Initial Calibration

Calibration Files
.928=17081701.D 4.64=17081702.D 9.28=17081703.D 18.6=17081704.D 27.8=17081705.D 46.4=17081706.D 92.8=17081707.D
186 =17081708.D

| | | Compound | .928 | 4.64 | 9.28 | 18.6 | 27.8 | 46.4 | 92.8 | 186 | Avg | %RSD | Fit | RSD/CF | Constant | Linear | Quad |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) | i | Fluorobenzene | ----------ISTD---------- | | | | | | | | | | | | | | |
| 2) | CP | Dichlorodifluo... | 2.580 | 2.585 | 2.515 | 2.503 | 2.502 | 2.424 | 2.700 | 2.517 | 2.541 | 3.22 | A | 0.032 | 0.0000 | 2.5406 | 0.0000 |
| 3) | CP | Chloromethane | 3.057 | 2.579 | 2.725 | 2.585 | 2.641 | 2.609 | 2.685 | 2.398 | 2.660 | 7.05 | A | 0.070 | 0.0000 | 2.6599 | 0.0000 |
| 4) | CP | Vinyl chloride | 2.445 | 2.373 | 2.287 | 2.330 | 2.352 | 2.248 | 2.398 | 2.222 | 2.332 | 3.26 | A | 0.033 | 0.0000 | 2.3319 | 0.0000 |
| 5) | CP | Bromomethane | 0.968 | 0.753 | 0.697 | 0.731 | 0.771 | 0.687 | 0.837 | 0.854 | 0.787 | 11.97 | A | 0.120 | 0.0000 | 0.7873 | 0.0000 |
| 6) | CP | Chloroethane | 1.146 | 0.989 | 1.052 | 0.977 | 1.004 | 0.912 | 0.997 | 0.908 | 0.998 | 7.65 | A | 0.076 | 0.0000 | 0.9979 | 0.0000 |
| 7) | CP | Trichlorofluor... | 3.158 | 3.215 | 3.134 | 3.135 | 3.164 | 3.053 | 3.194 | 2.948 | 3.125 | 2.77 | A | 0.028 | 0.0000 | 3.1251 | 0.0000 |
| 8) | CP | Trichlorotrifl... | 1.936 | 2.105 | 2.066 | 2.160 | 2.071 | 2.009 | 1.988 | 1.871 | 2.026 | 4.64 | A | 0.046 | 0.0000 | 2.0257 | 0.0000 |
| 9) | | Acrolein | 0.204 | 0.307 | 0.348 | 0.318 | 0.329 | 0.346 | 0.357 | 0.360 | 0.321 | 15.85 | *Q | 0.999 | -0.0064 | 0.3520 | 0.0049 |
| 10) | | Isopropyl Alcohol | | 0.011 | 0.017 | 0.025 | 0.024 | 0.031 | 0.025 | 0.046 | 0.025 | 44.07 | *Q | 0.993 | 0.0027 | 0.0078 | 0.0159 |
| 11) | CP | Acetone | | 0.498 | 0.522 | 0.486 | 0.491 | 0.505 | 0.483 | 0.508 | 0.499 | 2.70 | *Q | 1.000 | 0.0045 | 0.4802 | 0.0053 |
| 12) | | Iodomethane | | 0.467 | 0.673 | 1.035 | 1.343 | 1.488 | 1.890 | 1.966 | 1.266 | 45.36 | *Q | 0.996 | -0.0357 | 1.5952 | 0.4730 |
| 13) | CP | 1,1-Dichloroet... | 1.718 | 1.739 | 1.725 | 1.688 | 1.725 | 1.687 | 1.708 | 1.690 | 1.710 | 1.16 | A | 0.012 | 0.0000 | 1.7099 | 0.0000 |
| 14) | CP | Carbon disulfide | | 5.834 | 5.902 | 5.784 | 5.838 | 5.611 | 5.861 | 5.608 | 5.777 | 2.07 | A | 0.021 | 0.0000 | 5.7768 | 0.0000 |
| 15) | CP | Methylene chlo... | 2.341 | 1.875 | 1.859 | 1.775 | 1.798 | 1.775 | 1.776 | 1.727 | 1.866 | 10.63 | *Q | 1.000 | 0.0025 | 1.7867 | -0.0643 |
| 16) | CP | Methyl Acetate | | 1.165 | 1.419 | 1.539 | 1.499 | 1.544 | 1.652 | 1.656 | 1.496 | 11.25 | A | 0.113 | 0.0000 | 1.4964 | 0.0000 |
| 17) | CP | trans-1,2-Dich... | 1.899 | 1.928 | 1.850 | 1.811 | 1.838 | 1.821 | 1.834 | 1.802 | 1.848 | 2.38 | A | 0.024 | 0.0000 | 1.8479 | 0.0000 |
| 18) | | Acrylonitrile | 0.137 | 0.666 | 0.740 | 0.704 | 0.717 | 0.736 | 0.775 | 0.764 | 0.655 | 32.37 | *Q | 1.000 | -0.0055 | 0.7553 | 0.0081 |
| 19) | CP | MTBE | 4.741 | 4.961 | 4.973 | 4.943 | 4.966 | 5.014 | 5.344 | 5.055 | 5.000 | 3.34 | A | 0.033 | 0.0000 | 4.9997 | 0.0000 |
| 20) | | Tert-Butanol | 0.080 | 0.093 | 0.096 | 0.091 | 0.091 | 0.109 | 0.099 | 0.127 | 0.098 | 14.23 | *Q | 0.998 | 0.0038 | 0.0791 | 0.0100 |
| 21) | | Isopropyl Ether | 6.317 | 6.759 | 6.722 | 6.679 | 6.770 | 6.699 | 7.001 | 6.448 | 6.674 | 3.13 | A | 0.031 | 0.0000 | 6.6744 | 0.0000 |
| 22) | CP | 1,1-Dichloroet... | 3.376 | 3.470 | 3.432 | 3.338 | 3.377 | 3.326 | 3.367 | 3.325 | 3.376 | 1.53 | A | 0.015 | 0.0000 | 3.3763 | 0.0000 |
| 23) | | Vinyl acetate | 3.271 | 4.067 | 4.136 | 4.051 | 4.147 | 4.124 | 4.303 | 3.952 | 4.006 | 7.83 | *Q | 0.999 | -0.0533 | 4.4039 | -0.1736 |
| 24) | | Ethyl-Tert-but... | 5.501 | 5.698 | 5.596 | 5.542 | 5.636 | 5.592 | 5.864 | 5.384 | 5.602 | 2.53 | A | 0.025 | 0.0000 | 5.6017 | 0.0000 |
| 25) | CP | cis-1,2-Dichlo... | 2.103 | 2.112 | 2.035 | 2.021 | 2.015 | 1.980 | 1.975 | 1.955 | 2.025 | 2.85 | A | 0.028 | 0.0000 | 2.0247 | 0.0000 |
| 26) | | 2,2-Dichloropr... | 2.412 | 2.478 | 2.410 | 2.349 | 2.410 | 2.418 | 2.661 | 2.730 | 2.484 | 5.50 | A | 0.055 | 0.0000 | 2.4836 | 0.0000 |
| 27) | | Bromochloromet... | 0.945 | 0.885 | 0.886 | 0.880 | 0.872 | 0.827 | 0.817 | 0.767 | 0.860 | 6.34 | A | 0.063 | 0.0000 | 0.8598 | 0.0000 |
| 28) | CP | Cyclohexane | | | 3.243 | 3.402 | 3.259 | 3.150 | 3.352 | 3.167 | 3.262 | 3.06 | A | 0.031 | 0.0000 | 3.2623 | 0.0000 |
| 29) | CP | Chloroform | 3.439 | 3.489 | 3.450 | 3.334 | 3.370 | 3.337 | 3.368 | 3.280 | 3.383 | 2.07 | A | 0.021 | 0.0000 | 3.3834 | 0.0000 |
| 30) | s | Dibromofluorom... | 0.246 | 0.247 | 0.250 | 0.249 | 0.247 | 0.247 | 0.248 | 0.245 | 0.247 | 0.62 | A | 0.006 | 0.0000 | 0.2474 | 0.0000 |
| 31) | | 1,1-Dichloropr... | 2.665 | 2.776 | 2.771 | 2.680 | 2.747 | 2.709 | 2.740 | 2.702 | 2.724 | 1.51 | A | 0.015 | 0.0000 | 2.7238 | 0.0000 |
| 32) | s | 1,2-Dichloroet... | 0.309 | 0.314 | 0.318 | 0.321 | 0.307 | 0.306 | 0.306 | 0.307 | 0.311 | 1.93 | A | 0.019 | 0.0000 | 0.3110 | 0.0000 |
| 33) | CP | 1,1,1-Trichlor... | 2.662 | 2.906 | 2.865 | 2.795 | 2.899 | 2.903 | 2.943 | 2.949 | 2.865 | 3.32 | A | 0.033 | 0.0000 | 2.8652 | 0.0000 |
| 34) | CP | 1,2-Dichloroet... | 2.626 | 2.518 | 2.416 | 2.370 | 2.388 | 2.346 | 2.379 | 2.330 | 2.422 | 4.15 | A | 0.042 | 0.0000 | 2.4216 | 0.0000 |
| 35) | CP | Benzene | 7.882 | 7.954 | 7.891 | 7.634 | 7.674 | 7.585 | 7.538 | 7.335 | 7.687 | 2.74 | A | 0.027 | 0.0000 | 7.6868 | 0.0000 |
| 36) | CP | 2-Butanone | 0.643 | 0.880 | 0.976 | 0.932 | 0.935 | 0.975 | 0.933 | 0.971 | 0.906 | 12.23 | A | 0.122 | 0.0000 | 0.9056 | 0.0000 |
| 37) | CP | Carbon tetrach... | 2.378 | 2.326 | 2.234 | 2.280 | 2.310 | 2.372 | 2.798 | 2.545 | 2.406 | 7.63 | *Q | 0.996 | -0.0026 | 2.4728 | 0.1375 |
| 38) | | Tert-amyl Meth... | 4.296 | 4.653 | 4.607 | 4.503 | 4.662 | 4.678 | 5.062 | 4.776 | 4.654 | 4.70 | A | 0.047 | 0.0000 | 4.6545 | 0.0000 |
| 39) | CP | Trichloroethene | 2.054 | 2.112 | 2.114 | 2.021 | 2.086 | 2.025 | 2.018 | 1.944 | 2.047 | 2.79 | A | 0.028 | 0.0000 | 2.0467 | 0.0000 |
| 40) | CP | Methyl Cyclohe... | | | 3.357 | 3.436 | 3.367 | 3.266 | 3.538 | 3.133 | 3.350 | 4.16 | A | 0.042 | 0.0000 | 3.3496 | 0.0000 |
| 41) | T | Dibromomethane | 1.142 | 1.096 | 1.086 | 1.065 | 1.078 | 1.056 | 1.077 | 1.070 | 1.084 | 2.46 | A | 0.025 | 0.0000 | 1.0838 | 0.0000 |
| 42) | CP | Bromodichlorom... | 2.011 | 2.188 | 2.190 | 2.196 | 2.249 | 2.251 | 2.340 | 2.325 | 2.219 | 4.62 | A | 0.046 | 0.0000 | 2.2187 | 0.0000 |
| 43) | CP | 1,2-Dichloropr... | 1.866 | 1.950 | 1.929 | 1.916 | 1.949 | 1.924 | 1.940 | 1.900 | 1.922 | 1.47 | A | 0.015 | 0.0000 | 1.9217 | 0.0000 |

Method Path : C:\msdchem\1\methods\
Method File : 170817X.M
Title : M-8260S

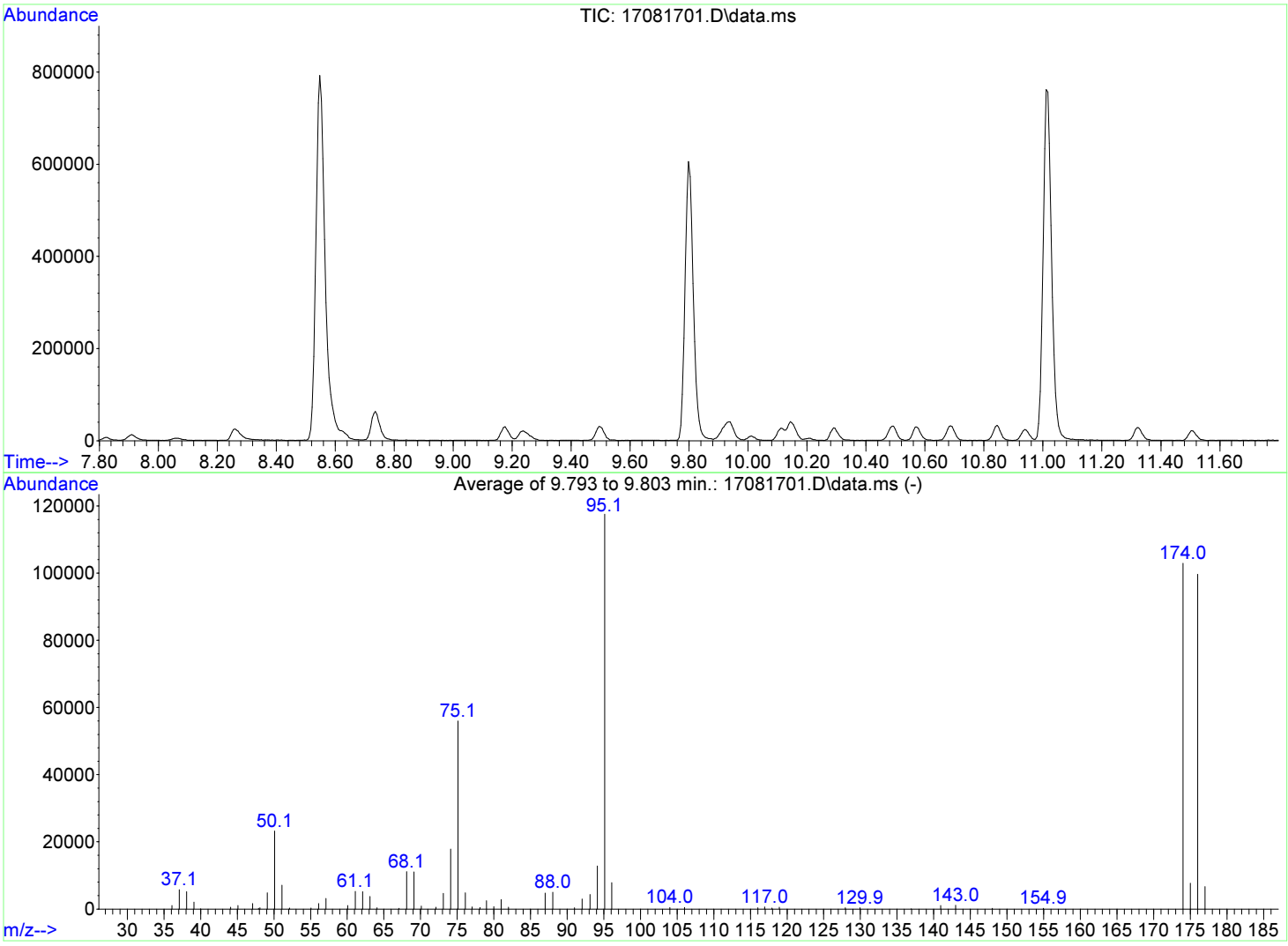
| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44) | T | 2-Chloroethylv... | | 1.308 | 1.370 | 1.362 | 1.379 | 1.412 | 1.361 | 1.365 | 2.46 | A | 0.025 | 0.0000 | 1.3654 | 0.0000 |
| 45) | CP | cis-1,3-Dichlo... | 2.621 | 2.631 | 2.638 | 2.704 | 2.781 | 2.797 | 2.909 | 2.889 | 2.746 | 4.20 | A | 0.042 | 0.0000 | 2.7464 | 0.0000 |
| 46) | CP | trans-1,3-Dich... | 2.074 | 2.057 | 2.092 | 2.105 | 2.189 | 2.254 | 2.355 | 2.343 | 2.184 | 5.54 | A | 0.055 | 0.0000 | 2.1838 | 0.0000 |
| 47) | CP | 1,1,2-Trichlor... | 1.396 | 1.540 | 1.540 | 1.499 | 1.510 | 1.494 | 1.519 | 1.490 | 1.498 | 3.06 | A | 0.031 | 0.0000 | 1.4985 | 0.0000 |
| 48) | CP | Toluene | 4.891 | 5.028 | 4.883 | 4.751 | 4.816 | 4.746 | 4.732 | 4.574 | 4.803 | 2.82 | A | 0.028 | 0.0000 | 4.8027 | 0.0000 |
| 49) | i | Chlorobenzene-d5 | ----------ISTD---------- | | | | | | | | | | | | | | |
| 50) | CP | 4-Methyl-2-pen... | 2.450 | 3.062 | 3.105 | 3.104 | 3.062 | 3.026 | 2.942 | 2.886 | 2.955 | 7.37 | A | 0.074 | 0.0000 | 2.9547 | 0.0000 |
| 51) | s | Toluene-d8 | 1.301 | 1.318 | 1.306 | 1.321 | 1.335 | 1.313 | 1.347 | 1.402 | 1.330 | 2.46 | A | 0.025 | 0.0000 | 1.3304 | 0.0000 |
| 52) | CP | 2-Hexanone | 1.635 | 2.036 | 2.184 | 2.186 | 2.150 | 2.175 | 2.117 | 2.158 | 2.080 | 8.96 | A | 0.090 | 0.0000 | 2.0800 | 0.0000 |
| 53) | CP | Dibromochlorom... | 2.032 | 2.091 | 2.074 | 2.162 | 2.251 | 2.260 | 2.432 | 2.539 | 2.230 | 8.05 | *Q | 1.000 | -0.0017 | 2.2041 | 0.3752 |
| 54) | | 1,3-Dichloropr... | 3.830 | 3.834 | 3.770 | 3.775 | 3.821 | 3.758 | 3.878 | 3.946 | 3.826 | 1.64 | A | 0.016 | 0.0000 | 3.8264 | 0.0000 |
| 55) | CP | Tetrachloroethene | 2.551 | 2.572 | 2.496 | 2.387 | 2.470 | 2.404 | 2.428 | 2.395 | 2.463 | 2.91 | A | 0.029 | 0.0000 | 2.4630 | 0.0000 |
| 56) | CP | 1,2-Dibromoethane | 2.091 | 2.196 | 2.209 | 2.224 | 2.255 | 2.241 | 2.325 | 2.399 | 2.243 | 4.06 | A | 0.041 | 0.0000 | 2.2426 | 0.0000 |
| 57) | CP | Chlorobenzene | 7.368 | 7.237 | 7.012 | 6.875 | 6.972 | 6.830 | 6.929 | 6.799 | 7.003 | 2.87 | A | 0.029 | 0.0000 | 7.0029 | 0.0000 |
| 58) | | 1,1,1,2-Tetrac... | 2.120 | 2.103 | 2.039 | 2.116 | 2.207 | 2.202 | 2.354 | 2.424 | 2.196 | 6.02 | *Q | 1.000 | -0.0010 | 2.1623 | 0.2954 |
| 59) | CP | Ethylbenzene | 4.025 | 4.029 | 3.927 | 3.845 | 3.959 | 3.857 | 3.962 | 3.886 | 3.936 | 1.79 | A | 0.018 | 0.0000 | 3.9362 | 0.0000 |
| 60) | CP | Bromoform | 1.239 | 1.254 | 1.311 | 1.368 | 1.448 | 1.493 | 1.631 | 1.732 | 1.435 | 12.39 | *Q | 0.999 | -0.0019 | 1.4227 | 0.3468 |
| 61) | CP | Styrene | 6.001 | 6.760 | 6.828 | 6.776 | 7.000 | 6.970 | 7.180 | 7.174 | 6.836 | 5.49 | A | 0.055 | 0.0000 | 6.8361 | 0.0000 |
| 62) | | 1-Chlorohexane | | 3.479 | 3.204 | 3.015 | 3.061 | 3.007 | 3.203 | 3.243 | 3.173 | 5.23 | A | 0.052 | 0.0000 | 3.1734 | 0.0000 |
| 63) | CP | m,p-Xylene | 4.748 | 4.987 | 4.796 | 4.701 | 4.778 | 4.704 | 4.718 | 4.542 | 4.747 | 2.61 | A | 0.026 | 0.0000 | 4.7468 | 0.0000 |
| 64) | CP | o-Xylene | 4.371 | 4.579 | 4.485 | 4.411 | 4.582 | 4.512 | 4.623 | 4.617 | 4.522 | 2.09 | A | 0.021 | 0.0000 | 4.5225 | 0.0000 |
| 65) | CP | Isopropylbenzene | 1.113 | 1.170 | 1.155 | 1.133 | 1.164 | 1.152 | 1.174 | 1.170 | 1.154 | E1 1.85 | A | 0.019 | 0.0000 | 11.5387 | 0.0000 |
| 66) | I | 1,4-Dichlorobenzen... | ----------ISTD---------- | | | | | | | | | | | | | | |
| 67) | | Bromobenzene | 6.633 | 6.073 | 5.844 | 5.856 | 5.908 | 5.772 | 5.794 | 5.702 | 5.948 | 5.01 | A | 0.050 | 0.0000 | 5.9477 | 0.0000 |
| 68) | CP | 1,1,2,2-Tetrac... | 6.006 | 5.854 | 5.762 | 5.592 | 5.561 | 5.555 | 5.586 | 5.780 | 5.712 | 2.90 | A | 0.029 | 0.0000 | 5.7121 | 0.0000 |
| 69) | T | 1,2,3-Trichlor... | 1.675 | 1.864 | 1.826 | 1.734 | 1.738 | 1.727 | 1.690 | 1.695 | 1.744 | 3.86 | A | 0.039 | 0.0000 | 1.7436 | 0.0000 |
| 70) | s | 4-Bromofluorob... | 0.999 | 0.989 | 0.973 | 0.992 | 0.995 | 0.984 | 0.981 | 1.014 | 0.991 | 1.26 | A | 0.013 | 0.0000 | 0.9907 | 0.0000 |
| 71) | | 1,4-Dichloro-2... | 1.580 | 1.575 | 1.689 | 1.671 | 1.733 | 1.759 | 1.870 | 2.031 | 1.739 | 8.75 | A | 0.087 | 0.0000 | 1.7385 | 0.0000 |
| 72) | T | n-Propylbenzene | 3.050 | 3.072 | 3.010 | 2.926 | 2.981 | 2.918 | 2.874 | 2.801 | 2.954 | E1 3.11 | A | 0.031 | 0.0000 | 29.5391 | 0.0000 |
| 73) | | 2-Chlorotoluene | 1.948 | 1.910 | 1.847 | 1.814 | 1.844 | 1.817 | 1.824 | 1.808 | 1.851 | E1 2.75 | A | 0.028 | 0.0000 | 18.5146 | 0.0000 |
| 74) | | 1,3,5-Trimethy... | | 2.046 | 1.999 | 1.953 | 1.993 | 1.964 | 1.934 | 1.881 | 1.967 | E1 2.68 | A | 0.027 | 0.0000 | 19.6704 | 0.0000 |
| 75) | | 4-Chlorotoluene | 1.804 | 1.739 | 1.729 | 1.676 | 1.711 | 1.679 | 1.701 | 1.680 | 1.715 | E1 2.50 | A | 0.025 | 0.0000 | 17.1479 | 0.0000 |
| 76) | | tert-Butylbenzene | 1.793 | 1.841 | 1.777 | 1.727 | 1.762 | 1.714 | 1.732 | 1.708 | 1.757 | E1 2.60 | A | 0.026 | 0.0000 | 17.5665 | 0.0000 |
| 77) | | 1,2,4-Trimethy... | | 2.031 | 1.986 | 1.974 | 1.999 | 1.967 | 1.958 | 1.919 | 1.976 | E1 1.76 | A | 0.018 | 0.0000 | 19.7624 | 0.0000 |
| 78) | | sec-Butylbenzene | 2.679 | 2.728 | 2.686 | 2.598 | 2.636 | 2.585 | 2.568 | 2.504 | 2.623 | E1 2.78 | A | 0.028 | 0.0000 | 26.2310 | 0.0000 |
| 79) | CP | 1,3-Dichlorobe... | 1.232 | 1.114 | 1.072 | 1.049 | 1.068 | 1.055 | 1.064 | 1.053 | 1.088 | E1 5.66 | A | 0.057 | 0.0000 | 10.8848 | 0.0000 |
| 80) | | p-Isopropyltol... | 2.109 | 2.225 | 2.175 | 2.141 | 2.174 | 2.152 | 2.142 | 2.089 | 2.151 | E1 1.95 | A | 0.020 | 0.0000 | 21.5071 | 0.0000 |
| 81) | CP | 1,4-Dichlorobe... | 1.331 | 1.153 | 1.110 | 1.083 | 1.082 | 1.067 | 1.080 | 1.058 | 1.121 | E1 8.04 | A | 0.080 | 0.0000 | 11.2054 | 0.0000 |
| 82) | CP | 1,2-Dichlorobe... | 1.067 | 1.013 | 0.965 | 0.962 | 0.973 | 0.958 | 0.964 | 0.960 | 0.983 | E1 3.90 | A | 0.039 | 0.0000 | 9.8270 | 0.0000 |
| 83) | CP | 1,2-Dibromo-3-... | 0.604 | 0.845 | 0.928 | 0.852 | 0.930 | 0.974 | 0.979 | 1.097 | 0.901 | 15.97 | *Q | 1.000 | -0.0013 | 0.9011 | 0.2094 |
| 84) | | n-Butylbenzene | 1.920 | 1.986 | 1.966 | 1.930 | 1.963 | 1.942 | 1.966 | 1.919 | 1.949 | E1 1.27 | A | 0.013 | 0.0000 | 19.4894 | 0.0000 |
| 85) | CP | 1,2,4-Trichlor... | | 6.384 | 6.468 | 6.473 | 6.553 | 6.534 | 6.621 | 6.759 | 6.542 | 1.86 | A | 0.019 | 0.0000 | 6.5417 | 0.0000 |
| 86) | | Hexachlorobuta... | 4.458 | 3.404 | 3.316 | 3.286 | 3.345 | 3.358 | 3.396 | 3.483 | 3.506 | 11.11 | A | 0.111 | 0.0000 | 3.5058 | 0.0000 |
| 87) | | Naphthalene | | 1.463 | 1.583 | 1.538 | 1.616 | 1.606 | 1.577 | 1.645 | 1.575 | E1 3.80 | A | 0.038 | 0.0000 | 15.7539 | 0.0000 |
| 88) | | 1,2,3-Trichlor... | | 5.725 | 5.785 | 5.702 | 5.755 | 5.759 | 5.741 | 5.913 | 5.769 | 1.20 | A | 0.012 | 0.0000 | 5.7685 | 0.0000 |

(#) = Out of Range

Data Path : C:\msdchem\1\data\170817\
Data File : 17081701.D
Acq On : 17 Aug 2017 11:13 am
Operator :
Sample : CAL1 0.928 ppb
Misc : CAL1
ALS Vial : 1 Sample Multiplier: 1

Integration File: Rteint.p

Method : C:\msdchem\1\methods\170817X.M
Title : M-8260S
Last Update : Thu Aug 17 14:33:11 2017




AutoFind: Scans 1589, 1590, 1591; Background Corrected with Scan 1581

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 19.7 | 23211 | PASS |
| 75 | 95 | 30 | 60 | 47.6 | 55981 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 117605 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 7826 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 200 | 87.5 | 102936 | PASS |
| 175 | 174 | 5 | 9 | 7.4 | 7660 | PASS |
| 176 | 174 | 95 | 101 | 96.8 | 99661 | PASS |
| 177 | 176 | 5 | 9 | 6.7 | 6640 | PASS |

REVIEWED/APPROVED
By Sherri Herschmann at 9:35:05 AM, 8/23/2017

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081701.D
Acq On : 17 Aug 2017 11:13 am
Operator :
Sample : CAL1 0.928 ppb
Misc : CAL1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 18 13:40:02 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 745921 | 200.00 | ug/L | 98 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 532981 | 200.00 | ug/L | 100 |
| 66) 1,4-Dichlorobenzene-d4 | 11.017 | 152 | 247595 | 200.00 | ug/L | 93 |
| System Monitoring Compounds | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 183615 | 199.03 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.52% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.410 | 65 | 230121 | 198.37 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.19% | | | |
| 51) Toluene-d8 | 7.058 | 98 | 693214 | 195.53 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 97.77% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 247286 | 201.62 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 100.81% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 8928 | 0.942 | ug/L | 97 |
| 3) Chloromethane | 1.770 | 50 | 10580 | 1.066 | ug/L | 95 |
| 4) Vinyl chloride | 1.848 | 62 | 8464 | 0.973 | ug/L | 98 |
| 5) Bromomethane | 2.162 | 94 | 3349 | 1.141 | ug/L | 95 |
| 6) Chloroethane | 2.288 | 64 | 3965 | 1.065 | ug/L | 89 |
| 7) Trichlorofluoromethane | 2.424 | 101 | 10929 | 0.938 | ug/L | 90 |
| 8) Trichlorotrifluoroethane | 2.947 | 101 | 6700 | 0.887 | ug/L # | 94 |
| 9) Acrolein | 3.234 | 56 | 7061 | 9.021 | ug/L | 94 |
| 10) Isopropyl Alcohol | 0.000 | | 0 | N.D. | | |
| 11) Acetone | 3.501 | 43 | 8634 | 2.965 | ug/L | 95 |
| 12) Iodomethane | 3.041 | 142 | 745 | 4.567 | ug/L # | 44 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 5947 | 0.933 | ug/L | 98 |
| 14) Carbon disulfide | 2.941 | 76 | 21496 | 0.998 | ug/L | 98 |
| 15) Methylene chloride | 3.433 | 84 | 8104 | 0.940 | ug/L | 97 |
| 16) Methyl Acetate | 3.663 | 43 | 6496 | 1.164 | ug/L | 81 |
| 17) trans-1,2-Dichloroethene | 3.590 | 96 | 6571 | 0.953 | ug/L | 86 |
| 18) Acrylonitrile | 4.202 | 53 | 949 | 1.785 | ug/L | 91 |
| 19) MTBE | 3.663 | 73 | 16409 | 0.880 | ug/L | 96 |
| 20) Tert-Butanol | 3.757 | 59 | 1386 | Below Cal | # | 100 |
| 21) Isopropyl Ether | 3.993 | 45 | 21865 | 0.878 | ug/L | 99 |
| 22) 1,1-Dichloroethane | 4.113 | 63 | 11684 | 0.928 | ug/L | 98 |
| 23) Vinyl acetate | 4.322 | 43 | 113200 | 9.331 | ug/L | 99 |
| 24) Ethyl-Tert-butyl Ether | 4.312 | 59 | 19039 | 0.911 | ug/L | 100 |
| 25) cis-1,2-Dichloroethene | 4.578 | 96 | 7277 | 0.964 | ug/L | 96 |
| 26) 2,2-Dichloropropane | 4.667 | 77 | 8349 | 0.901 | ug/L | 99 |
| 27) Bromochloromethane | 4.746 | 128 | 3272 | 1.020 | ug/L | 98 |
| 28) Cyclohexane | 4.751 | 84 | 10107 | 0.831 | ug/L | 98 |
| 29) Chloroform | 4.803 | 83 | 11904 | 0.943 | ug/L | 97 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 9224 | 0.908 | ug/L | 93 |
| 33) 1,1,1-Trichloroethane | 4.981 | 97 | 9215 | 0.862 | ug/L | 98 |
| 34) 1,2-Dichloroethane | 5.478 | 62 | 9088 | 1.006 | ug/L | 98 |
| 35) Benzene | 5.305 | 78 | 27279 | 0.952 | ug/L | 99 |
| 36) 2-Butanone | 5.086 | 43 | 11130 | 3.295 | ug/L | 88 |
| 37) Carbon tetrachloride | 4.934 | 117 | 8231 | 1.105 | ug/L | 87 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 14869 | 0.857 | ug/L # | 88 |
| 39) Trichloroethene | 5.813 | 130 | 7110 | 0.931 | ug/L | 97 |
| 40) Methyl Cyclohexane | 5.802 | 55 | 10434 | 0.835 | ug/L | 93 |
| 41) Dibromomethane | 6.184 | 93 | 3954 | 0.978 | ug/L | 96 |
| 42) Bromodichloromethane | 6.320 | 83 | 6959 | 0.841 | ug/L | 99 |
| 43) 1,2-Dichloropropane | 6.263 | 63 | 6458 | 0.901 | ug/L | 95 |
| 44) 2-Chloroethylvinylether | 6.838 | 63 | 3100 | 0.609 | ug/L | 93 |
| 45) cis-1,3-Dichloropropene | 6.890 | 75 | 9071 | 0.886 | ug/L | 92 |

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081701.D
Acq On : 17 Aug 2017 11:13 am
Operator :
Sample : CAL1 0.928 ppb
Misc : CAL1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 18 13:40:02 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

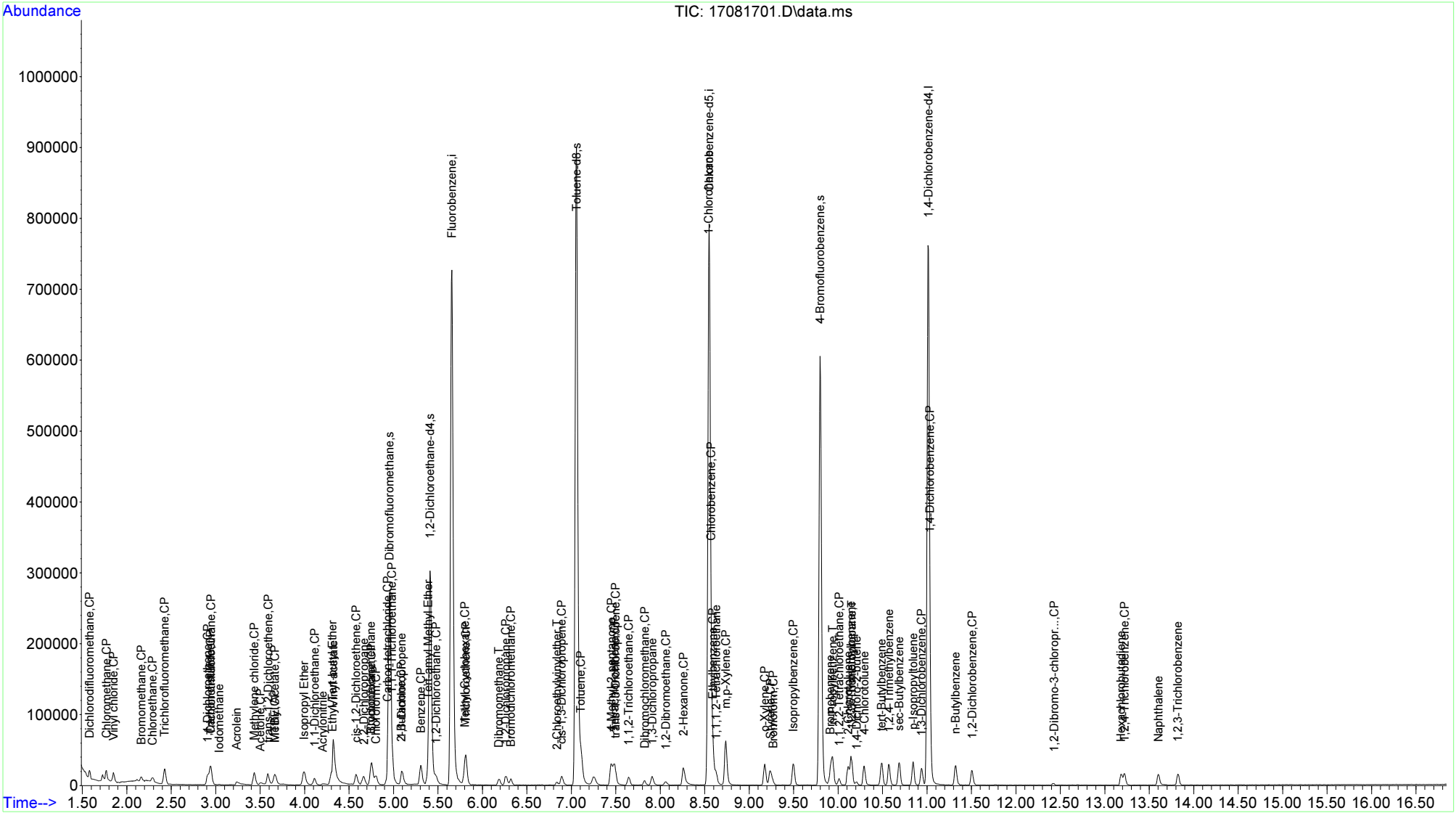
| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.497 | 75 | 7179 | 0.881 | ug/L | | 96 |
| 47) 1,1,2-Trichloroethane | 7.643 | 97 | 4830 | 0.864 | ug/L | | 91 |
| 48) Toluene | 7.105 | 92 | 16928 | 0.945 | ug/L | | 100 |
| 50) 4-Methyl-2-pentanone | 7.450 | 43 | 30298 | 3.848 | ug/L | | 93 |
| 52) 2-Hexanone | 8.260 | 43 | 20223 | 3.648 | ug/L | | 90 |
| 53) Dibromochloromethane | 7.826 | 129 | 5024 | 1.008 | ug/L | | 83 |
| 54) 1,3-Dichloropropane | 7.910 | 76 | 9471 | 0.929 | ug/L | | 96 |
| 55) Tetrachloroethene | 7.486 | 164 | 6308 | 0.961 | ug/L | | 95 |
| 56) 1,2-Dibromoethane | 8.062 | 107 | 5172 | 0.865 | ug/L | | 98 |
| 57) Chlorobenzene | 8.569 | 112 | 18221 | 0.976 | ug/L | | 93 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 5243 | 1.001 | ug/L | | 82 |
| 59) Ethylbenzene | 8.590 | 106 | 9954 | 0.949 | ug/L | | 86 |
| 60) Bromoform | 9.270 | 173 | 3063 | 1.071 | ug/L | | 88 |
| 61) Styrene | 9.239 | 104 | 14840 | 0.815 | ug/L | | 98 |
| 62) 1-Chlorohexane | 8.543 | 55 | 12721 | 1.504 | ug/L | # | 62 |
| 63) m,p-Xylene | 8.736 | 106 | 23535 | 1.861 | ug/L | | 98 |
| 64) o-Xylene | 9.176 | 106 | 10810 | 0.897 | ug/L | | 88 |
| 65) Isopropylbenzene | 9.495 | 105 | 27515 | 0.895 | ug/L | | 99 |
| 67) Bromobenzene | 9.913 | 156 | 7620 | 1.035 | ug/L | | 93 |
| 68) 1,1,2,2-Tetrachloroethane | 10.013 | 83 | 6900 | 0.976 | ug/L | | 94 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 1924 | 0.891 | ug/L | | 99 |
| 71) 1,4-Dichloro-2-butene | 10.206 | 53 | 1815 | 0.843 | ug/L | # | 46 |
| 72) n-Propylbenzene | 9.939 | 91 | 35035 | 0.958 | ug/L | | 97 |
| 73) 2-Chlorotoluene | 10.112 | 91 | 22382 | 0.977 | ug/L | | 97 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 22066 | 0.906 | ug/L | | 99 |
| 75) 4-Chlorotoluene | 10.295 | 91 | 20723 | 0.976 | ug/L | | 97 |
| 76) tert-Butylbenzene | 10.489 | 119 | 20594 | 0.947 | ug/L | | 96 |
| 77) 1,2,4-Trimethylbenzene | 10.572 | 105 | 22386 | 0.915 | ug/L | | 96 |
| 78) sec-Butylbenzene | 10.687 | 105 | 30778 | 0.948 | ug/L | | 99 |
| 79) 1,3-Dichlorobenzene | 10.938 | 146 | 14158 | 1.051 | ug/L | | 99 |
| 80) p-Isopropyltoluene | 10.844 | 119 | 24230 | 0.910 | ug/L | | 93 |
| 81) 1,4-Dichlorobenzene | 11.032 | 146 | 15293 | 1.102 | ug/L | | 89 |
| 82) 1,2-Dichlorobenzene | 11.508 | 146 | 12255 | 1.007 | ug/L | | 96 |
| 83) 1,2-Dibromo-3-chloropr... | 12.429 | 75 | 694 | 0.914 | ug/L | # | 82 |
| 84) n-Butylbenzene | 11.320 | 91 | 22054 | 0.914 | ug/L | | 97 |
| 85) 1,2,4-Trichlorobenzene | 13.224 | 180 | 9099 | 1.124 | ug/L | | 90 |
| 86) Hexachlorobutadiene | 13.182 | 225 | 5122 | 1.180 | ug/L | | 98 |
| 87) Naphthalene | 13.601 | 128 | 20042 | 1.028 | ug/L | | 96 |
| 88) 1,2,3-Trichlorobenzene | 13.820 | 180 | 8184 | 1.146 | ug/L | | 91 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081701.D
Acq On : 17 Aug 2017 11:13 am
Operator :
Sample : CAL1 0.928 ppb
Misc : CAL1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Aug 18 13:40:02 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081702.D
Acq On : 17 Aug 2017 11:37 am
Operator :
Sample : CAL2 4.64 ppb
Misc : CAL2
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 18 13:40:06 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 741400 | 200.00 | ug/L | 98 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 527040 | 200.00 | ug/L | 99 |
| 66) 1,4-Dichlorobenzene-d4 | 11.017 | 152 | 247565 | 200.00 | ug/L | 93 |
| System Monitoring Compounds | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 183273 | 199.87 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.94% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 232674 | 201.79 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 100.90% | | | |
| 51) Toluene-d8 | 7.058 | 98 | 694616 | 198.13 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.06% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 244814 | 199.63 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.81% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.582 | 85 | 44457 | 4.720 | ug/L | 98 |
| 3) Chloromethane | 1.770 | 50 | 44368 | 4.500 | ug/L | 99 |
| 4) Vinyl chloride | 1.848 | 62 | 40809 | 4.721 | ug/L | 99 |
| 5) Bromomethane | 2.162 | 94 | 12947 | 4.436 | ug/L | 92 |
| 6) Chloroethane | 2.288 | 64 | 17005 | 4.597 | ug/L | 92 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 55298 | 4.773 | ug/L | 98 |
| 8) Trichlorotrifluoroethane | 2.947 | 101 | 36208 | 4.822 | ug/L # | 97 |
| 9) Acrolein | 3.224 | 56 | 26397 | 23.838 | ug/L | 96 |
| 10) Isopropyl Alcohol | 3.423 | 45 | 938 | Below Cal | # | 100 |
| 11) Acetone | 3.480 | 43 | 42866 | 22.198 | ug/L | 97 |
| 12) Iodomethane | 3.041 | 142 | 8033 | 5.781 | ug/L | 93 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 29906 | 4.718 | ug/L | 96 |
| 14) Carbon disulfide | 2.941 | 76 | 100356 | 4.686 | ug/L | 99 |
| 15) Methylene chloride | 3.433 | 84 | 32251 | 4.596 | ug/L | 98 |
| 16) Methyl Acetate | 3.600 | 43 | 20032 | 3.611 | ug/L | 91 |
| 17) trans-1,2-Dichloroethene | 3.585 | 96 | 33163 | 4.841 | ug/L | 96 |
| 18) Acrylonitrile | 4.170 | 53 | 22921 | 9.630 | ug/L | 97 |
| 19) MTBE | 3.663 | 73 | 85334 | 4.604 | ug/L | 94 |
| 20) Tert-Butanol | 3.752 | 59 | 8038 | 17.566 | ug/L # | 100 |
| 21) Isopropyl Ether | 3.993 | 45 | 116265 | 4.699 | ug/L | 99 |
| 22) 1,1-Dichloroethane | 4.113 | 63 | 59688 | 4.769 | ug/L | 99 |
| 23) Vinyl acetate | 4.317 | 43 | 349729 | 23.957 | ug/L | 99 |
| 24) Ethyl-Tert-butyl Ether | 4.306 | 59 | 98003 | 4.719 | ug/L | 99 |
| 25) cis-1,2-Dichloroethene | 4.578 | 96 | 36336 | 4.841 | ug/L | 98 |
| 26) 2,2-Dichloropropane | 4.667 | 77 | 42624 | 4.630 | ug/L | 100 |
| 27) Bromochloromethane | 4.746 | 128 | 15220 | 4.775 | ug/L | 99 |
| 28) Cyclohexane | 4.761 | 84 | 56096 | 4.639 | ug/L | 96 |
| 29) Chloroform | 4.803 | 83 | 60008 | 4.784 | ug/L | 98 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 47756 | 4.730 | ug/L | 98 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 49984 | 4.706 | ug/L | 98 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 43314 | 4.825 | ug/L | 96 |
| 35) Benzene | 5.305 | 78 | 136818 | 4.801 | ug/L | 100 |
| 36) 2-Butanone | 5.065 | 43 | 75682 | 22.543 | ug/L | 99 |
| 37) Carbon tetrachloride | 4.934 | 117 | 40009 | 4.572 | ug/L | 99 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 80026 | 4.638 | ug/L | 94 |
| 39) Trichloroethene | 5.813 | 130 | 36332 | 4.789 | ug/L | 97 |
| 40) Methyl Cyclohexane | 5.808 | 55 | 58813 | 4.737 | ug/L | 97 |
| 41) Dibromomethane | 6.184 | 93 | 18844 | 4.690 | ug/L | 99 |
| 42) Bromodichloromethane | 6.320 | 83 | 37643 | 4.577 | ug/L | 99 |
| 43) 1,2-Dichloropropane | 6.263 | 63 | 33547 | 4.709 | ug/L | 97 |
| 44) 2-Chloroethylvinylether | 6.827 | 63 | 21088 | 4.166 | ug/L | 97 |
| 45) cis-1,3-Dichloropropene | 6.890 | 75 | 45263 | 4.446 | ug/L | 97 |

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081702.D
Acq On : 17 Aug 2017 11:37 am
Operator :
Sample : CAL2 4.64 ppb
Misc : CAL2
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 18 13:40:06 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

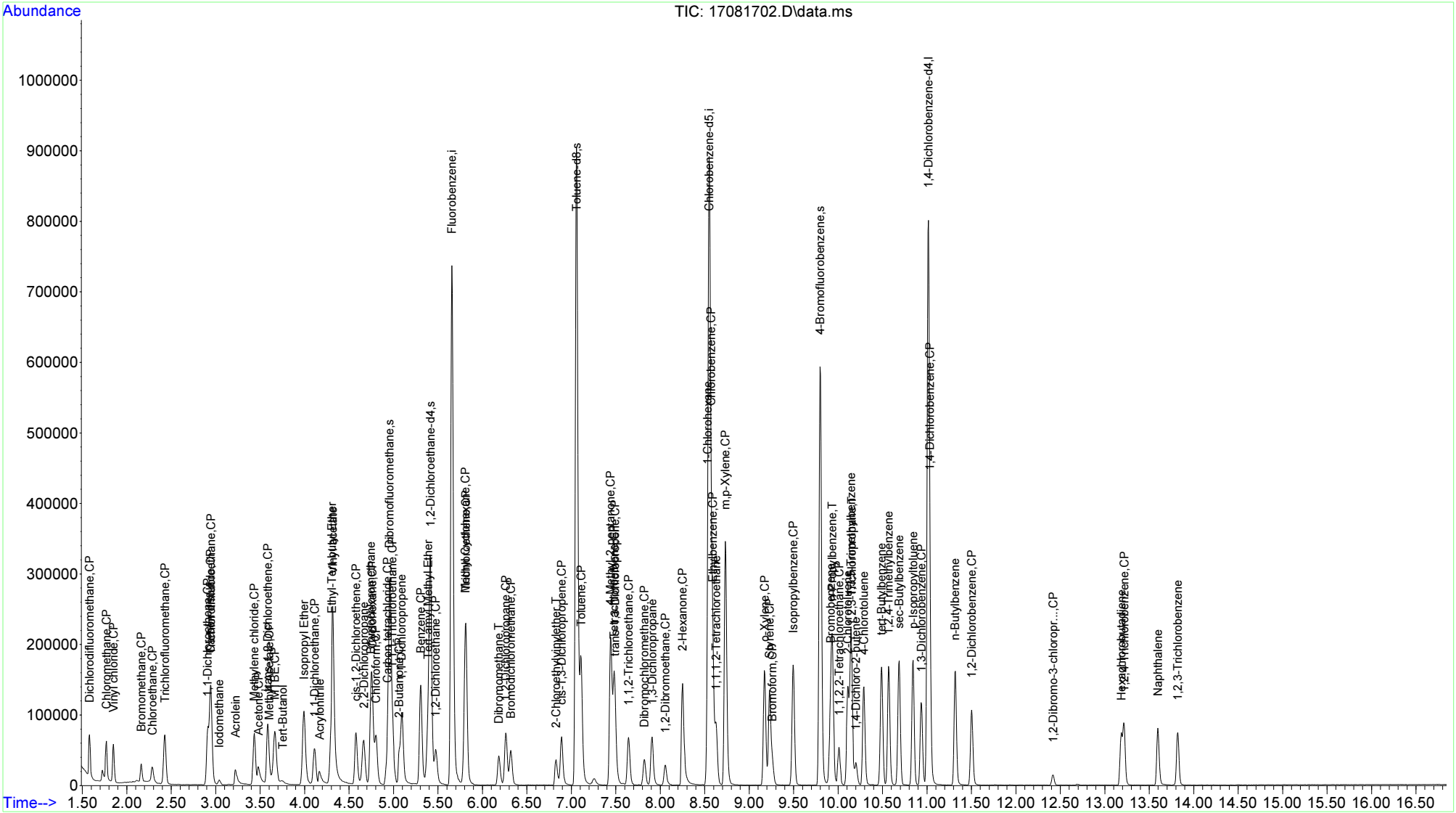
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.492 | 75 | 35384 | 4.371 | ug/L | 94 |
| 47) 1,1,2-Trichloroethane | 7.643 | 97 | 26489 | 4.769 | ug/L | 98 |
| 48) Toluene | 7.110 | 92 | 86485 | 4.858 | ug/L | 98 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 187213 | 24.044 | ug/L | 97 |
| 52) 2-Hexanone | 8.250 | 43 | 124444 | 22.703 | ug/L | 99 |
| 53) Dibromochloromethane | 7.821 | 129 | 25568 | 4.538 | ug/L | 100 |
| 54) 1,3-Dichloropropane | 7.910 | 76 | 46875 | 4.649 | ug/L | 95 |
| 55) Tetrachloroethene | 7.481 | 164 | 31453 | 4.846 | ug/L | 98 |
| 56) 1,2-Dibromoethane | 8.057 | 107 | 26852 | 4.544 | ug/L | 99 |
| 57) Chlorobenzene | 8.569 | 112 | 88495 | 4.795 | ug/L | 97 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 25713 | 4.590 | ug/L | 97 |
| 59) Ethylbenzene | 8.590 | 106 | 49261 | 4.749 | ug/L | 99 |
| 60) Bromoform | 9.260 | 173 | 15339 | 4.333 | ug/L | 95 |
| 61) Styrene | 9.228 | 104 | 82653 | 4.588 | ug/L | 96 |
| 62) 1-Chlorohexane | 8.533 | 55 | 42538 | 5.087 | ug/L | 85 |
| 63) m,p-Xylene | 8.731 | 106 | 121950 | 9.749 | ug/L | 99 |
| 64) o-Xylene | 9.176 | 106 | 55984 | 4.698 | ug/L | 98 |
| 65) Isopropylbenzene | 9.495 | 105 | 143053 | 4.705 | ug/L | 97 |
| 67) Bromobenzene | 9.919 | 156 | 34879 | 4.738 | ug/L | 97 |
| 68) 1,1,2,2-Tetrachloroethane | 10.013 | 83 | 33623 | 4.755 | ug/L | 97 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 10707 | 4.961 | ug/L | 90 |
| 71) 1,4-Dichloro-2-butene | 10.201 | 53 | 9047 | 4.204 | ug/L | 87 |
| 72) n-Propylbenzene | 9.934 | 91 | 176442 | 4.826 | ug/L | 100 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 109713 | 4.787 | ug/L | 97 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 117497 | 4.826 | ug/L | 99 |
| 75) 4-Chlorotoluene | 10.290 | 91 | 99880 | 4.706 | ug/L | 100 |
| 76) tert-Butylbenzene | 10.489 | 119 | 105745 | 4.863 | ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 116636 | 4.768 | ug/L | 96 |
| 78) sec-Butylbenzene | 10.687 | 105 | 156658 | 4.825 | ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.938 | 146 | 63974 | 4.748 | ug/L | 99 |
| 80) p-Isopropyltoluene | 10.844 | 119 | 127769 | 4.799 | ug/L | 98 |
| 81) 1,4-Dichlorobenzene | 11.033 | 146 | 66222 | 4.774 | ug/L | 98 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 58172 | 4.782 | ug/L | 96 |
| 83) 1,2-Dibromo-3-chloropr... | 12.419 | 75 | 4855 | 4.621 | ug/L | 93 |
| 84) n-Butylbenzene | 11.315 | 91 | 114089 | 4.729 | ug/L | 98 |
| 85) 1,2,4-Trichlorobenzene | 13.219 | 180 | 36669 | 4.528 | ug/L | 98 |
| 86) Hexachlorobutadiene | 13.187 | 225 | 19552 | 4.505 | ug/L | 97 |
| 87) Naphthalene | 13.595 | 128 | 84030 | 4.309 | ug/L | 95 |
| 88) 1,2,3-Trichlorobenzene | 13.820 | 180 | 32881 | 4.605 | ug/L | 99 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081702.D
Acq On : 17 Aug 2017 11:37 am
Operator :
Sample : CAL2 4.64 ppb
Misc : CAL2
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 18 13:40:06 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081703.D
Acq On : 17 Aug 2017 12:00 pm
Operator :
Sample : CAL3 9.28 ppb
Misc : CAL3
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 18 13:40:10 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 735801 | 200.00 | ug/L | | 97 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 532403 | 200.00 | ug/L | | 100 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 253155 | 200.00 | ug/L | | 95 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.960 | 113 | 183885 | 202.06 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 101.03% | | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 234261 | 204.71 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 102.35% | | | | |
| 51) Toluene-d8 | 7.058 | 98 | 695300 | 196.33 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.17% | | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 246288 | 196.40 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.20% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.582 | 85 | 85864 | 9.186 | ug/L | | 100 |
| 3) Chloromethane | 1.770 | 50 | 93025 | 9.506 | ug/L | | 99 |
| 4) Vinyl chloride | 1.848 | 62 | 78097 | 9.103 | ug/L | | 99 |
| 5) Bromomethane | 2.162 | 94 | 23812 | 8.221 | ug/L | | 95 |
| 6) Chloroethane | 2.288 | 64 | 35913 | 9.782 | ug/L | | 95 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 106997 | 9.306 | ug/L | | 99 |
| 8) Trichlorotrifluoroethane | 2.947 | 101 | 70534 | 9.464 | ug/L | | 99 |
| 9) Acrolein | 3.213 | 56 | 59338 | 49.299 | ug/L | | 99 |
| 10) Isopropyl Alcohol | 3.407 | 45 | 2837 | 23.109 | ug/L | # | 100 |
| 11) Acetone | 3.470 | 43 | 89041 | 48.417 | ug/L | | 99 |
| 12) Iodomethane | 3.041 | 142 | 22982 | 8.287 | ug/L | | 98 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 58883 | 9.360 | ug/L | | 98 |
| 14) Carbon disulfide | 2.941 | 76 | 201492 | 9.481 | ug/L | | 100 |
| 15) Methylene chloride | 3.433 | 84 | 63453 | 9.392 | ug/L | | 98 |
| 16) Methyl Acetate | 3.590 | 43 | 48452 | 8.801 | ug/L | | 99 |
| 17) trans-1,2-Dichloroethene | 3.580 | 96 | 63171 | 9.292 | ug/L | | 98 |
| 18) Acrylonitrile | 4.155 | 53 | 50604 | 19.639 | ug/L | | 99 |
| 19) MTBE | 3.663 | 73 | 169801 | 9.231 | ug/L | | 98 |
| 20) Tert-Butanol | 3.742 | 59 | 16358 | 45.255 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.993 | 45 | 229484 | 9.346 | ug/L | | 99 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 117177 | 9.433 | ug/L | | 99 |
| 23) Vinyl acetate | 4.312 | 43 | 705955 | 46.418 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 191064 | 9.271 | ug/L | | 99 |
| 25) cis-1,2-Dichloroethene | 4.579 | 96 | 69490 | 9.329 | ug/L | | 98 |
| 26) 2,2-Dichloropropane | 4.667 | 77 | 82282 | 9.005 | ug/L | | 99 |
| 27) Bromochloromethane | 4.751 | 128 | 30260 | 9.566 | ug/L | | 93 |
| 28) Cyclohexane | 4.762 | 84 | 110709 | 9.224 | ug/L | | 97 |
| 29) Chloroform | 4.803 | 83 | 117778 | 9.462 | ug/L | | 98 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 94608 | 9.441 | ug/L | | 98 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 97802 | 9.278 | ug/L | | 99 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 82482 | 9.258 | ug/L | | 98 |
| 35) Benzene | 5.306 | 78 | 269423 | 9.527 | ug/L | | 97 |
| 36) 2-Butanone | 5.054 | 43 | 166574 | 49.994 | ug/L | | 99 |
| 37) Carbon tetrachloride | 4.934 | 117 | 76281 | 8.577 | ug/L | | 100 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 157283 | 9.185 | ug/L | | 98 |
| 39) Trichloroethene | 5.813 | 130 | 72173 | 9.585 | ug/L | | 95 |
| 40) Methyl Cyclohexane | 5.808 | 55 | 114621 | 9.301 | ug/L | | 99 |
| 41) Dibromomethane | 6.184 | 93 | 37091 | 9.302 | ug/L | | 97 |
| 42) Bromodichloromethane | 6.320 | 83 | 74753 | 9.158 | ug/L | | 98 |
| 43) 1,2-Dichloropropane | 6.263 | 63 | 65866 | 9.316 | ug/L | | 96 |
| 44) 2-Chloroethylvinylether | 6.822 | 63 | 44663 | 8.891 | ug/L | | 98 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 90074 | 8.915 | ug/L | | 100 |

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081703.D
Acq On : 17 Aug 2017 12:00 pm
Operator :
Sample : CAL3 9.28 ppb
Misc : CAL3
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 18 13:40:10 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

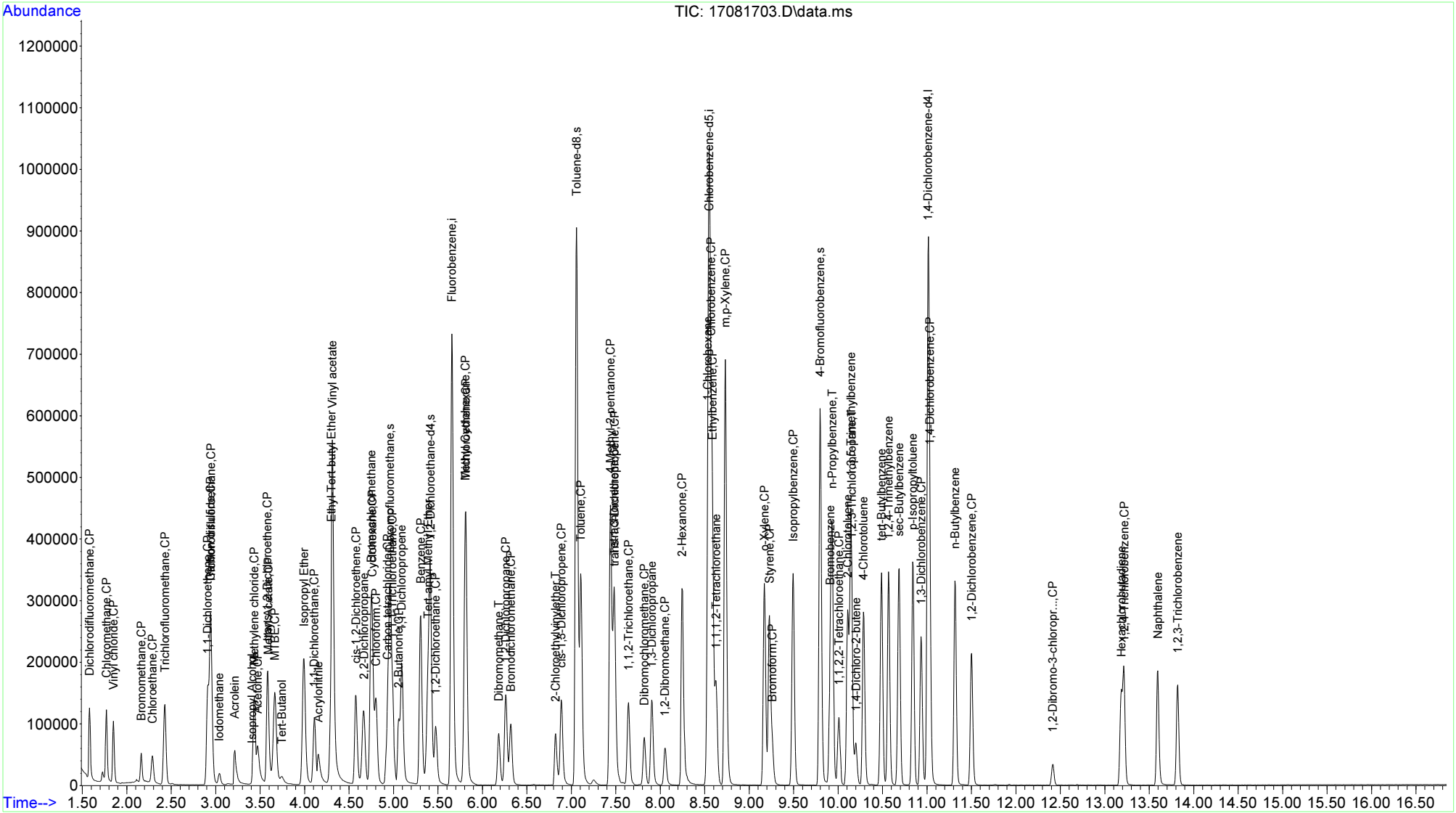
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.487 | 75 | 71418 | 8.889 | ug/L | 97 |
| 47) 1,1,2-Trichloroethane | 7.643 | 97 | 52594 | 9.540 | ug/L | 99 |
| 48) Toluene | 7.105 | 92 | 166726 | 9.436 | ug/L | 98 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 383494 | 48.757 | ug/L | 98 |
| 52) 2-Hexanone | 8.245 | 43 | 269758 | 48.718 | ug/L | 99 |
| 53) Dibromochloromethane | 7.821 | 129 | 51233 | 8.819 | ug/L | 99 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 93124 | 9.142 | ug/L | 99 |
| 55) Tetrachloroethene | 7.481 | 164 | 61665 | 9.405 | ug/L | 94 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 54574 | 9.141 | ug/L | 96 |
| 57) Chlorobenzene | 8.569 | 112 | 173213 | 9.292 | ug/L | 98 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 50381 | 8.792 | ug/L | 96 |
| 59) Ethylbenzene | 8.585 | 106 | 97011 | 9.258 | ug/L | 99 |
| 60) Bromoform | 9.260 | 173 | 32389 | 8.724 | ug/L | 95 |
| 61) Styrene | 9.228 | 104 | 168677 | 9.269 | ug/L | 99 |
| 62) 1-Chlorohexane | 8.533 | 55 | 79162 | 9.371 | ug/L | 90 |
| 63) m,p-Xylene | 8.731 | 106 | 237466 | 18.793 | ug/L | 98 |
| 64) o-Xylene | 9.171 | 106 | 110788 | 9.203 | ug/L | 99 |
| 65) Isopropylbenzene | 9.495 | 105 | 285437 | 9.293 | ug/L | 100 |
| 67) Bromobenzene | 9.913 | 156 | 68647 | 9.118 | ug/L | 97 |
| 68) 1,1,2,2-Tetrachloroethane | 10.008 | 83 | 67686 | 9.361 | ug/L | 98 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 21448 | 9.718 | ug/L | 98 |
| 71) 1,4-Dichloro-2-butene | 10.201 | 53 | 19840 | 9.016 | ug/L | 82 |
| 72) n-Propylbenzene | 9.934 | 91 | 353614 | 9.457 | ug/L | 98 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 216913 | 9.256 | ug/L | 98 |
| 74) 1,3,5-Trimethylbenzene | 10.144 | 105 | 234791 | 9.430 | ug/L | 99 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 203038 | 9.354 | ug/L | 98 |
| 76) tert-Butylbenzene | 10.489 | 119 | 208689 | 9.385 | ug/L | 100 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 233271 | 9.325 | ug/L | 100 |
| 78) sec-Butylbenzene | 10.687 | 105 | 315493 | 9.502 | ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 125961 | 9.142 | ug/L | 100 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 255430 | 9.383 | ug/L | 99 |
| 81) 1,4-Dichlorobenzene | 11.033 | 146 | 130439 | 9.196 | ug/L | 99 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 113338 | 9.112 | ug/L | 99 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 10904 | 9.742 | ug/L | 93 |
| 84) n-Butylbenzene | 11.315 | 91 | 230965 | 9.362 | ug/L | 100 |
| 85) 1,2,4-Trichlorobenzene | 13.219 | 180 | 75979 | 9.176 | ug/L | 96 |
| 86) Hexachlorobutadiene | 13.188 | 225 | 38946 | 8.776 | ug/L | 98 |
| 87) Naphthalene | 13.595 | 128 | 185891 | 9.322 | ug/L | 100 |
| 88) 1,2,3-Trichlorobenzene | 13.820 | 180 | 67955 | 9.307 | ug/L | 98 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081703.D
Acq On : 17 Aug 2017 12:00 pm
Operator :
Sample : CAL3 9.28 ppb
Misc : CAL3
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 18 13:40:10 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081704.D
Acq On : 17 Aug 2017 12:24 pm
Operator :
Sample : CAL4 18.6 ppb
Misc : CAL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 18 13:40:14 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 740562 | 200.00 | ug/L | | 97 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 527258 | 200.00 | ug/L | | 99 |
| 66) 1,4-Dichlorobenzene-d4 | 11.017 | 152 | 250995 | 200.00 | ug/L | | 95 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 184350 | 201.27 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 100.64% | | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 237888 | 206.55 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 103.28% | | | | |
| 51) Toluene-d8 | 7.058 | 98 | 696628 | 198.62 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.31% | | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 248997 | 200.26 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 100.13% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.582 | 85 | 172385 | 18.324 | ug/L | | 99 |
| 3) Chloromethane | 1.770 | 50 | 178051 | 18.078 | ug/L | | 100 |
| 4) Vinyl chloride | 1.848 | 62 | 160497 | 18.588 | ug/L | | 100 |
| 5) Bromomethane | 2.162 | 94 | 50380 | 17.283 | ug/L | | 99 |
| 6) Chloroethane | 2.288 | 64 | 67268 | 18.205 | ug/L | | 98 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 215923 | 18.660 | ug/L | | 100 |
| 8) Trichlorotrifluoroethane | 2.947 | 101 | 148754 | 19.832 | ug/L | # | 99 |
| 9) Acrolein | 3.208 | 56 | 81841 | 66.134 | ug/L | | 97 |
| 10) Isopropyl Alcohol | 3.396 | 45 | 6324 | 81.345 | ug/L | # | 100 |
| 11) Acetone | 3.464 | 43 | 166937 | 91.569 | ug/L | | 100 |
| 12) Iodomethane | 3.041 | 142 | 71274 | 16.152 | ug/L | | 100 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 116231 | 18.357 | ug/L | | 99 |
| 14) Carbon disulfide | 2.941 | 76 | 398344 | 18.622 | ug/L | | 99 |
| 15) Methylene chloride | 3.433 | 84 | 122230 | 18.259 | ug/L | | 98 |
| 16) Methyl Acetate | 3.585 | 43 | 105980 | 19.127 | ug/L | | 99 |
| 17) trans-1,2-Dichloroethene | 3.580 | 96 | 124722 | 18.228 | ug/L | | 99 |
| 18) Acrylonitrile | 4.150 | 53 | 96940 | 36.041 | ug/L | | 99 |
| 19) MTBE | 3.663 | 73 | 340433 | 18.389 | ug/L | | 98 |
| 20) Tert-Butanol | 3.742 | 59 | 31420 | 92.228 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 459965 | 18.611 | ug/L | | 99 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 229865 | 18.386 | ug/L | | 98 |
| 23) Vinyl acetate | 4.312 | 43 | 1043902 | 67.331 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 381707 | 18.403 | ug/L | | 100 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 139218 | 18.570 | ug/L | | 98 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 161791 | 17.593 | ug/L | | 98 |
| 27) Bromochloromethane | 4.746 | 128 | 60610 | 19.037 | ug/L | | 94 |
| 28) Cyclohexane | 4.762 | 84 | 234329 | 19.399 | ug/L | | 98 |
| 29) Chloroform | 4.803 | 83 | 229642 | 18.330 | ug/L | | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 184608 | 18.304 | ug/L | | 99 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 192466 | 18.141 | ug/L | | 99 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 163213 | 18.202 | ug/L | | 99 |
| 35) Benzene | 5.300 | 78 | 525797 | 18.473 | ug/L | | 99 |
| 36) 2-Butanone | 5.054 | 43 | 320327 | 95.522 | ug/L | | 98 |
| 37) Carbon tetrachloride | 4.934 | 117 | 157059 | 17.283 | ug/L | | 97 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 310136 | 17.995 | ug/L | | 98 |
| 39) Trichloroethene | 5.813 | 130 | 139196 | 18.367 | ug/L | | 97 |
| 40) Methyl Cyclohexane | 5.808 | 55 | 236648 | 19.080 | ug/L | | 99 |
| 41) Dibromomethane | 6.179 | 93 | 73320 | 18.270 | ug/L | | 96 |
| 42) Bromodichloromethane | 6.320 | 83 | 151233 | 18.408 | ug/L | | 100 |
| 43) 1,2-Dichloropropane | 6.263 | 63 | 131925 | 18.540 | ug/L | | 99 |
| 44) 2-Chloroethylvinylether | 6.817 | 63 | 94389 | 18.669 | ug/L | | 98 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 186229 | 18.312 | ug/L | | 99 |

Data Path : C:\msdchem\1\data\170817\
Data File : 17081704.D
Acq On : 17 Aug 2017 12:24 pm
Operator :
Sample : CAL4 18.6 ppb
Misc : CAL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 18 13:40:14 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

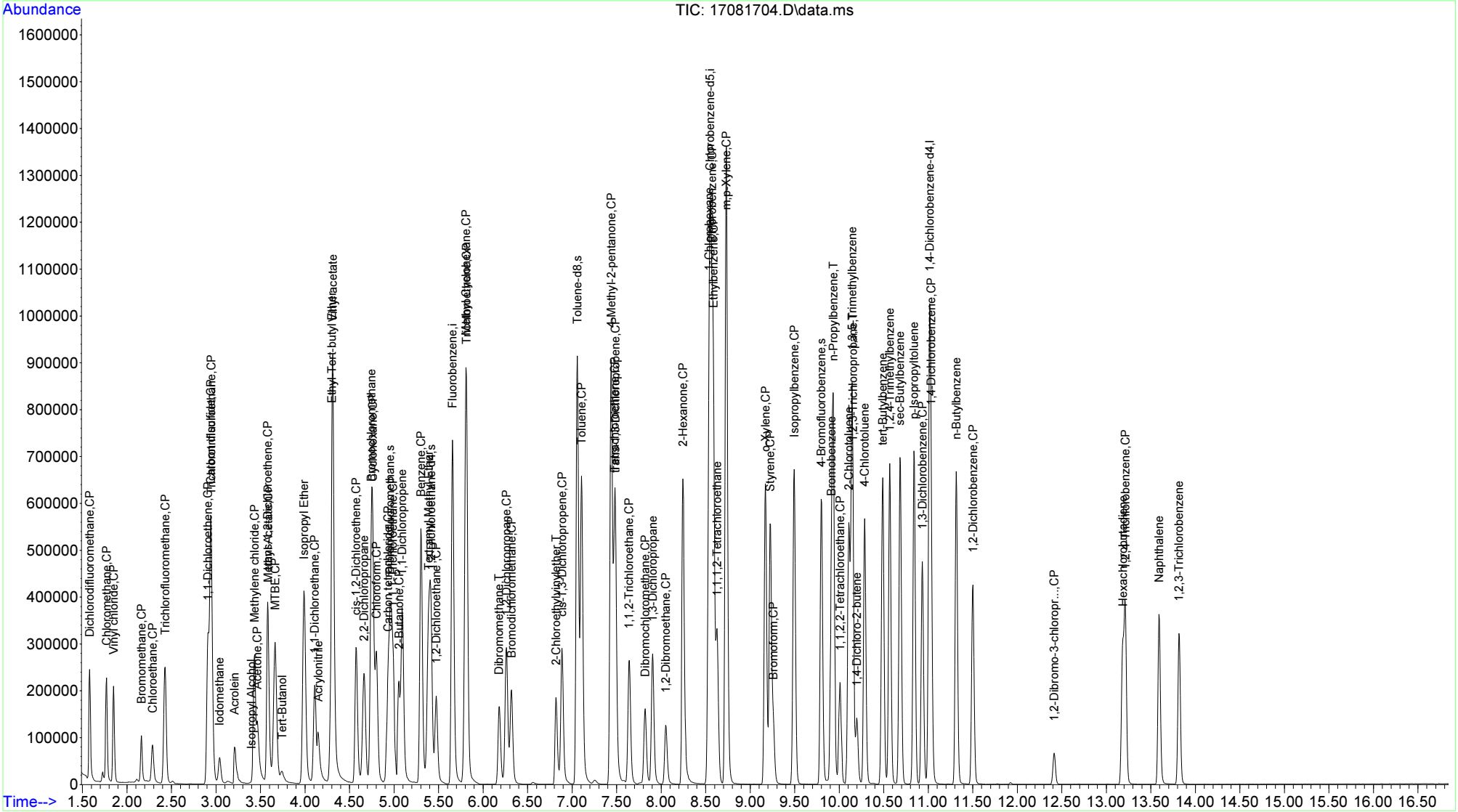
| Compound | R.T. | QIon | Response | Conc Units | %Rec |
|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.487 | 75 | 144997 | 17.931 ug/L | 98 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 103221 | 18.603 ug/L | 99 |
| 48) Toluene | 7.105 | 92 | 327222 | 18.400 ug/L | 98 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 759364 | 97.487 ug/L | 98 |
| 52) 2-Hexanone | 8.245 | 43 | 534740 | 97.517 ug/L | 99 |
| 53) Dibromochloromethane | 7.821 | 129 | 105996 | 18.116 ug/L | 99 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 185108 | 18.350 ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 117044 | 18.026 ug/L | 99 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 109040 | 18.443 ug/L | 100 |
| 57) Chlorobenzene | 8.569 | 112 | 337129 | 18.261 ug/L | 98 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 103745 | 18.068 ug/L | 97 |
| 59) Ethylbenzene | 8.585 | 106 | 188552 | 18.170 ug/L | 96 |
| 60) Bromoform | 9.260 | 173 | 67080 | 17.765 ug/L | 98 |
| 61) Styrene | 9.223 | 104 | 332252 | 18.436 ug/L | 99 |
| 62) 1-Chlorohexane | 8.538 | 55 | 147832 | 17.671 ug/L | 93 |
| 63) m,p-Xylene | 8.731 | 106 | 461042 | 36.843 ug/L | 99 |
| 64) o-Xylene | 9.171 | 106 | 216284 | 18.141 ug/L | 100 |
| 65) Isopropylbenzene | 9.495 | 105 | 555327 | 18.256 ug/L | 100 |
| 67) Bromobenzene | 9.913 | 156 | 136703 | 18.314 ug/L | 99 |
| 68) 1,1,2,2-Tetrachloroethane | 10.008 | 83 | 130529 | 18.209 ug/L | 100 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 40479 | 18.499 ug/L | 99 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 39015 | 17.882 ug/L | 89 |
| 72) n-Propylbenzene | 9.934 | 91 | 682897 | 18.421 ug/L | 98 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 423493 | 18.226 ug/L | 98 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 455770 | 18.463 ug/L | 98 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 391123 | 18.175 ug/L | 100 |
| 76) tert-Butylbenzene | 10.489 | 119 | 403136 | 18.286 ug/L | 98 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 460723 | 18.577 ug/L | 98 |
| 78) sec-Butylbenzene | 10.682 | 105 | 606433 | 18.422 ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 244975 | 17.934 ug/L | 99 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 499863 | 18.520 ug/L | 100 |
| 81) 1,4-Dichlorobenzene | 11.033 | 146 | 252815 | 17.978 ug/L | 98 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 224472 | 18.202 ug/L | 99 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 19889 | 17.524 ug/L | 100 |
| 84) n-Butylbenzene | 11.315 | 91 | 450487 | 18.418 ug/L | 100 |
| 85) 1,2,4-Trichlorobenzene | 13.214 | 180 | 151087 | 18.404 ug/L | 100 |
| 86) Hexachlorobutadiene | 13.187 | 225 | 76709 | 17.435 ug/L | 99 |
| 87) Naphthalene | 13.590 | 128 | 359081 | 18.162 ug/L | 100 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 133091 | 18.384 ug/L | 98 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081704.D
Acq On : 17 Aug 2017 12:24 pm
Operator :
Sample : CAL4 18.6 ppb
Misc : CAL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 18 13:40:14 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081705.D
Acq On : 17 Aug 2017 12:47 pm
Operator :
Sample : CAL5 27.8 ppb
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 18 13:40:18 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 744812 | 200.00 | ug/L | | 98 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 528835 | 200.00 | ug/L | | 99 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 252728 | 200.00 | ug/L | | 95 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.960 | 113 | 183890 | 199.62 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.81% | | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 228402 | 197.18 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.59% | | | | |
| 51) Toluene-d8 | 7.058 | 98 | 705968 | 200.69 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 100.35% | | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 251523 | 200.91 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 100.46% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 259028 | 27.377 | ug/L | | 99 |
| 3) Chloromethane | 1.770 | 50 | 273465 | 27.607 | ug/L | | 100 |
| 4) Vinyl chloride | 1.848 | 62 | 243485 | 28.038 | ug/L | | 99 |
| 5) Bromomethane | 2.162 | 94 | 79838 | 27.232 | ug/L | | 95 |
| 6) Chloroethane | 2.288 | 64 | 103899 | 27.958 | ug/L | | 99 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 327514 | 28.142 | ug/L | | 99 |
| 8) Trichlorotrifluoroethane | 2.947 | 101 | 214408 | 28.422 | ug/L | # | 97 |
| 9) Acrolein | 3.208 | 56 | 113804 | 89.902 | ug/L | | 99 |
| 10) Isopropyl Alcohol | 3.396 | 45 | 8269 | 104.098 | ug/L | # | 100 |
| 11) Acetone | 3.464 | 43 | 254264 | 139.260 | ug/L | | 99 |
| 12) Iodomethane | 3.041 | 142 | 139014 | 26.807 | ug/L | | 100 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 178558 | 28.040 | ug/L | | 99 |
| 14) Carbon disulfide | 2.941 | 76 | 604446 | 28.096 | ug/L | | 99 |
| 15) Methylene chloride | 3.433 | 84 | 186106 | 27.833 | ug/L | | 99 |
| 16) Methyl Acetate | 3.579 | 43 | 155215 | 27.852 | ug/L | | 99 |
| 17) trans-1,2-Dichloroethene | 3.579 | 96 | 190271 | 27.650 | ug/L | | 99 |
| 18) Acrylonitrile | 4.144 | 53 | 148384 | 54.046 | ug/L | | 99 |
| 19) MTBE | 3.663 | 73 | 514124 | 27.613 | ug/L | | 99 |
| 20) Tert-Butanol | 3.736 | 59 | 47325 | 138.810 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 700874 | 28.197 | ug/L | | 99 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 349617 | 27.806 | ug/L | | 99 |
| 23) Vinyl acetate | 4.312 | 43 | 1433196 | 91.458 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 583494 | 27.970 | ug/L | | 100 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 208633 | 27.670 | ug/L | | 99 |
| 26) 2,2-Dichloropropane | 4.667 | 77 | 249487 | 26.974 | ug/L | | 100 |
| 27) Bromochloromethane | 4.746 | 128 | 90231 | 28.180 | ug/L | | 96 |
| 28) Cyclohexane | 4.756 | 84 | 337408 | 27.773 | ug/L | | 99 |
| 29) Chloroform | 4.803 | 83 | 348902 | 27.691 | ug/L | | 96 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 284405 | 28.037 | ug/L | | 99 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 300138 | 28.128 | ug/L | | 99 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 247263 | 27.419 | ug/L | | 99 |
| 35) Benzene | 5.300 | 78 | 794474 | 27.754 | ug/L | | 100 |
| 36) 2-Butanone | 5.049 | 43 | 484243 | 143.579 | ug/L | | 100 |
| 37) Carbon tetrachloride | 4.934 | 117 | 239202 | 26.000 | ug/L | | 99 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 482616 | 27.843 | ug/L | | 99 |
| 39) Trichloroethene | 5.813 | 130 | 215917 | 28.328 | ug/L | | 97 |
| 40) Methyl Cyclohexane | 5.808 | 55 | 348609 | 27.947 | ug/L | | 100 |
| 41) Dibromomethane | 6.179 | 93 | 111602 | 27.651 | ug/L | | 98 |
| 42) Bromodichloromethane | 6.320 | 83 | 232839 | 28.180 | ug/L | | 99 |
| 43) 1,2-Dichloropropane | 6.263 | 63 | 201792 | 28.197 | ug/L | | 100 |
| 44) 2-Chloroethylvinylether | 6.817 | 63 | 140999 | 27.729 | ug/L | | 98 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 287955 | 28.154 | ug/L | | 99 |

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081705.D
Acq On : 17 Aug 2017 12:47 pm
Operator :
Sample : CAL5 27.8 ppb
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 18 13:40:18 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

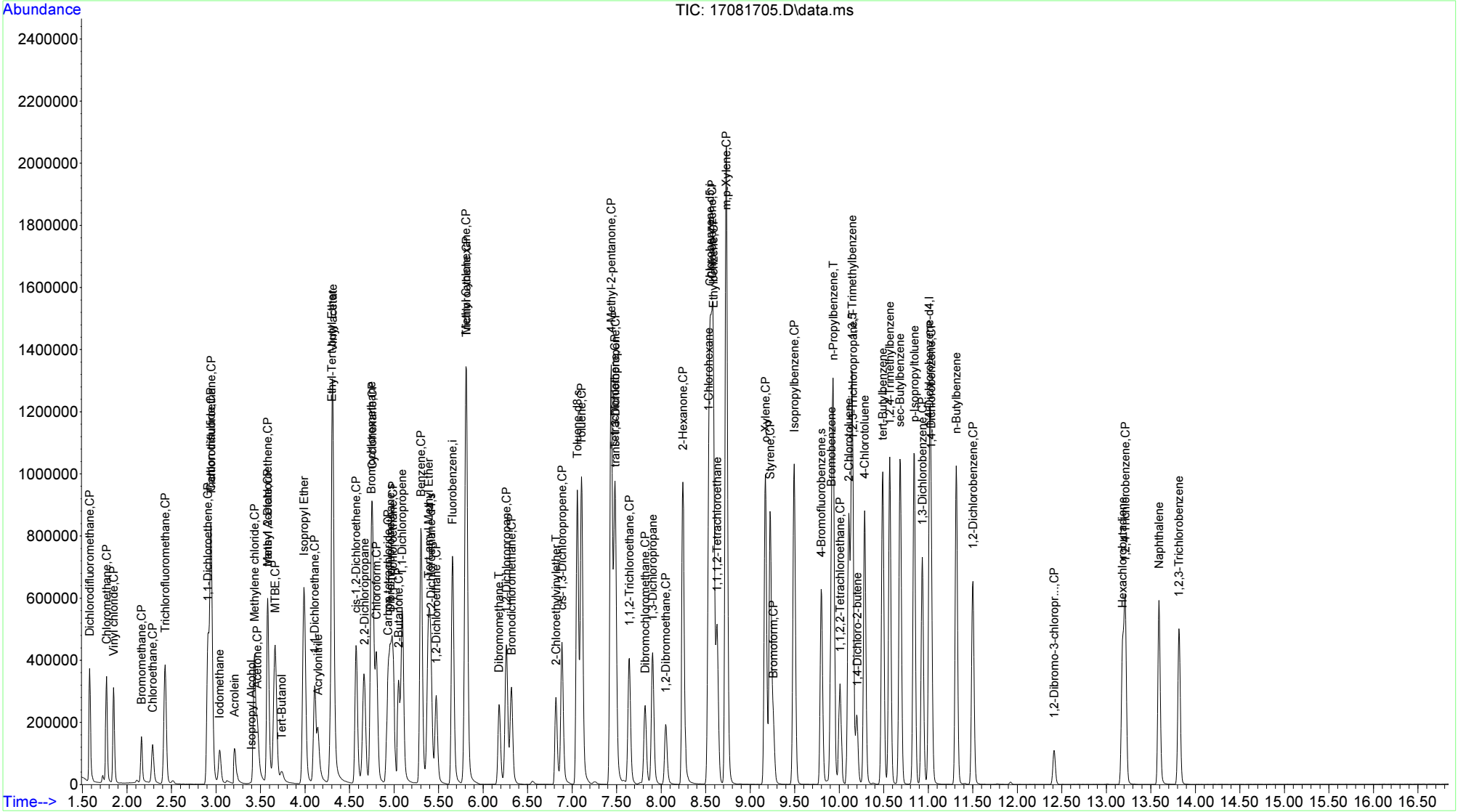
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 226671 | 27.872 | ug/L | 99 |
| 47) 1,1,2-Trichloroethane | 7.643 | 97 | 156371 | 28.022 | ug/L | 99 |
| 48) Toluene | 7.105 | 92 | 498547 | 27.874 | ug/L | 99 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 1125406 | 144.049 | ug/L | 99 |
| 52) 2-Hexanone | 8.245 | 43 | 790095 | 143.654 | ug/L | 99 |
| 53) Dibromochloromethane | 7.821 | 129 | 165460 | 27.882 | ug/L | 100 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 280869 | 27.760 | ug/L | 99 |
| 55) Tetrachloroethene | 7.481 | 164 | 181577 | 27.881 | ug/L | 99 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 165778 | 27.956 | ug/L | 99 |
| 57) Chlorobenzene | 8.569 | 112 | 512515 | 27.678 | ug/L | 98 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 162247 | 27.936 | ug/L | 98 |
| 59) Ethylbenzene | 8.585 | 106 | 291020 | 27.961 | ug/L | 98 |
| 60) Bromoform | 9.259 | 173 | 106466 | 27.635 | ug/L | 96 |
| 61) Styrene | 9.223 | 104 | 514581 | 28.468 | ug/L | 99 |
| 62) 1-Chlorohexane | 8.532 | 55 | 225039 | 26.819 | ug/L | 96 |
| 63) m,p-Xylene | 8.731 | 106 | 702477 | 55.969 | ug/L | 98 |
| 64) o-Xylene | 9.171 | 106 | 336804 | 28.165 | ug/L | 97 |
| 65) Isopropylbenzene | 9.495 | 105 | 855636 | 28.044 | ug/L | 100 |
| 67) Bromobenzene | 9.913 | 156 | 207542 | 27.614 | ug/L | 98 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 195357 | 27.065 | ug/L | 98 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 61050 | 27.708 | ug/L | 97 |
| 71) 1,4-Dichloro-2-butene | 10.201 | 53 | 60874 | 27.710 | ug/L | 89 |
| 72) n-Propylbenzene | 9.934 | 91 | 1047065 | 28.051 | ug/L | 97 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 647721 | 27.685 | ug/L | 100 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 700262 | 28.172 | ug/L | 100 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 601002 | 27.736 | ug/L | 99 |
| 76) tert-Butylbenzene | 10.489 | 119 | 619024 | 27.887 | ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 702303 | 28.123 | ug/L | 98 |
| 78) sec-Butylbenzene | 10.682 | 105 | 926138 | 27.941 | ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 375104 | 27.271 | ug/L | 99 |
| 80) p-Isopropyltoluene | 10.844 | 119 | 763682 | 28.100 | ug/L | 99 |
| 81) 1,4-Dichlorobenzene | 11.033 | 146 | 380156 | 26.848 | ug/L | 98 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 341919 | 27.535 | ug/L | 98 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 32680 | 28.077 | ug/L | 99 |
| 84) n-Butylbenzene | 11.315 | 91 | 689411 | 27.993 | ug/L | 99 |
| 85) 1,2,4-Trichlorobenzene | 13.214 | 180 | 230200 | 27.848 | ug/L | 99 |
| 86) Hexachlorobutadiene | 13.182 | 225 | 117516 | 26.527 | ug/L | 98 |
| 87) Naphthalene | 13.590 | 128 | 567547 | 28.510 | ug/L | 100 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 202168 | 27.735 | ug/L | 98 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081705.D
Acq On : 17 Aug 2017 12:47 pm
Operator :
Sample : CAL5 27.8 ppb
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 18 13:40:18 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081706.D
Acq On : 17 Aug 2017 1:11 pm
Operator :
Sample : CAL6 46.4 ppb
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 18 13:40:22 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 753410 | 200.00 | ug/L | | 99 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 539247 | 200.00 | ug/L | | 101 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 261527 | 200.00 | ug/L | | 99 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.960 | 113 | 186259 | 199.89 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.94% | | | | |
| 32) 1,2-Dichloroethane-d4 | 5.410 | 65 | 230573 | 196.78 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.39% | | | | |
| 51) Toluene-d8 | 7.057 | 98 | 707889 | 197.35 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.67% | | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 257228 | 198.55 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.28% | | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 423648 | 44.265 | ug/L | | 99 |
| 3) Chloromethane | 1.770 | 50 | 456110 | 45.520 | ug/L | | 98 |
| 4) Vinyl chloride | 1.848 | 62 | 392969 | 44.735 | ug/L | | 100 |
| 5) Bromomethane | 2.162 | 94 | 120036 | 40.476 | ug/L | | 100 |
| 6) Chloroethane | 2.288 | 64 | 159356 | 42.391 | ug/L | | 99 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 533667 | 45.333 | ug/L | | 99 |
| 8) Trichlorotrifluoroethane | 2.946 | 101 | 351217 | 46.026 | ug/L | | 99 |
| 9) Acrolein | 3.208 | 56 | 151250 | 116.766 | ug/L | | 98 |
| 10) Isopropyl Alcohol | 3.381 | 45 | 13533 | 152.745 | ug/L | # | 100 |
| 11) Acetone | 3.459 | 43 | 440971 | 238.781 | ug/L | | 99 |
| 12) Iodomethane | 3.041 | 142 | 260110 | 44.784 | ug/L | | 99 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 294952 | 45.790 | ug/L | | 99 |
| 14) Carbon disulfide | 2.941 | 76 | 980697 | 45.065 | ug/L | | 99 |
| 15) Methylene chloride | 3.433 | 84 | 310228 | 46.200 | ug/L | | 98 |
| 16) Methyl Acetate | 3.579 | 43 | 269960 | 47.890 | ug/L | | 98 |
| 17) trans-1,2-Dichloroethene | 3.579 | 96 | 318298 | 45.726 | ug/L | | 99 |
| 18) Acrylonitrile | 4.144 | 53 | 257276 | 91.424 | ug/L | | 98 |
| 19) MTBE | 3.663 | 73 | 876482 | 46.537 | ug/L | | 99 |
| 20) Tert-Butanol | 3.736 | 59 | 95198 | 265.378 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 1170912 | 46.570 | ug/L | | 99 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 581396 | 45.712 | ug/L | | 100 |
| 23) Vinyl acetate | 4.312 | 43 | 1801988 | 113.584 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 977463 | 46.321 | ug/L | | 100 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 346137 | 45.382 | ug/L | | 99 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 422681 | 45.177 | ug/L | | 100 |
| 27) Bromochloromethane | 4.746 | 128 | 144558 | 44.631 | ug/L | | 96 |
| 28) Cyclohexane | 4.761 | 84 | 550660 | 44.809 | ug/L | | 98 |
| 29) Chloroform | 4.803 | 83 | 583199 | 45.757 | ug/L | | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 473433 | 46.140 | ug/L | | 99 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 507500 | 47.019 | ug/L | | 100 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 409976 | 44.943 | ug/L | | 99 |
| 35) Benzene | 5.300 | 78 | 1325829 | 45.787 | ug/L | | 100 |
| 36) 2-Butanone | 5.049 | 43 | 851836 | 249.688 | ug/L | | 99 |
| 37) Carbon tetrachloride | 4.934 | 117 | 414572 | 44.176 | ug/L | | 99 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 817717 | 46.637 | ug/L | | 99 |
| 39) Trichloroethene | 5.813 | 130 | 353900 | 45.901 | ug/L | | 99 |
| 40) Methyl Cyclohexane | 5.807 | 55 | 570874 | 45.242 | ug/L | | 99 |
| 41) Dibromomethane | 6.179 | 93 | 184614 | 45.219 | ug/L | | 99 |
| 42) Bromodichloromethane | 6.320 | 83 | 393490 | 47.079 | ug/L | | 100 |
| 43) 1,2-Dichloropropane | 6.262 | 63 | 336311 | 46.458 | ug/L | | 100 |
| 44) 2-Chloroethylvinylether | 6.817 | 63 | 241109 | 46.876 | ug/L | | 100 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 488887 | 47.254 | ug/L | | 99 |

Data Path : C:\msdchem\1\data\170817\
Data File : 17081706.D
Acq On : 17 Aug 2017 1:11 pm
Operator :
Sample : CAL6 46.4 ppb
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 18 13:40:22 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

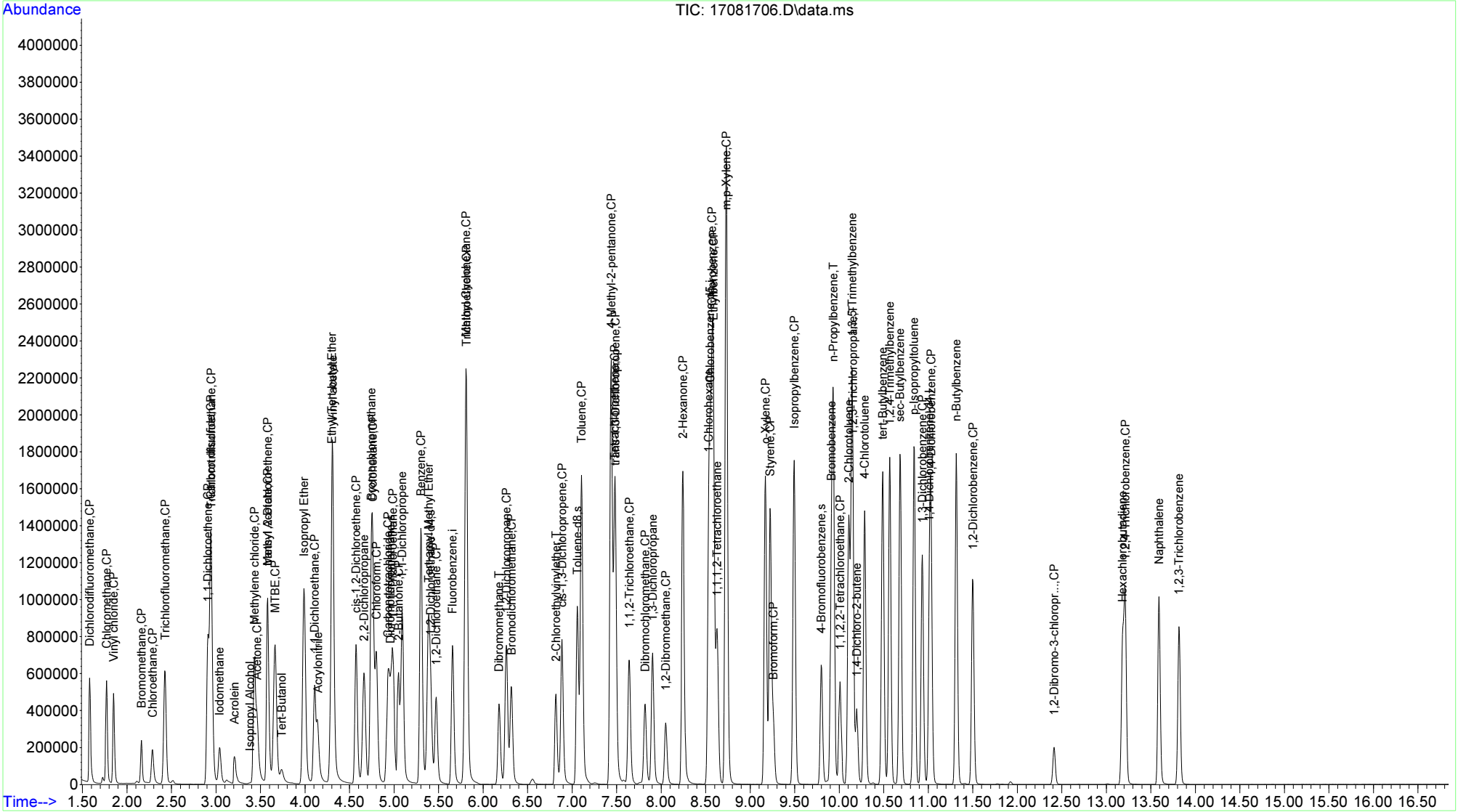
| Compound | R.T. | QIon | Response | Conc Units | %Rec |
|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 394061 | 47.901 ug/L | 98 |
| 47) 1,1,2-Trichloroethane | 7.643 | 97 | 261108 | 46.257 ug/L | 99 |
| 48) Toluene | 7.105 | 92 | 829517 | 45.850 ug/L | 99 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 1892629 | 237.574 ug/L | 99 |
| 52) 2-Hexanone | 8.245 | 43 | 1360423 | 242.575 ug/L | 98 |
| 53) Dibromochloromethane | 7.821 | 129 | 282780 | 45.941 ug/L | 100 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 470198 | 45.575 ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 300806 | 45.297 ug/L | 99 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 280384 | 46.370 ug/L | 98 |
| 57) Chlorobenzene | 8.569 | 112 | 854520 | 45.257 ug/L | 98 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 275465 | 45.902 ug/L | 99 |
| 59) Ethylbenzene | 8.585 | 106 | 482533 | 45.466 ug/L | 98 |
| 60) Bromoform | 9.259 | 173 | 186787 | 46.341 ug/L | 98 |
| 61) Styrene | 9.223 | 104 | 872020 | 47.311 ug/L | 100 |
| 62) 1-Chlorohexane | 8.532 | 55 | 376210 | 43.970 ug/L | 97 |
| 63) m,p-Xylene | 8.731 | 106 | 1176970 | 91.962 ug/L | 100 |
| 64) o-Xylene | 9.171 | 106 | 564496 | 46.294 ug/L | 99 |
| 65) Isopropylbenzene | 9.495 | 105 | 1441759 | 46.342 ug/L | 99 |
| 67) Bromobenzene | 9.913 | 156 | 350182 | 45.025 ug/L | 99 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 337075 | 45.128 ug/L | 98 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 104797 | 45.963 ug/L | 99 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 106740 | 46.953 ug/L | 91 |
| 72) n-Propylbenzene | 9.934 | 91 | 1770745 | 45.843 ug/L | 99 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 1102158 | 45.524 ug/L | 99 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 1191749 | 46.333 ug/L | 99 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 1018981 | 45.443 ug/L | 100 |
| 76) tert-Butylbenzene | 10.489 | 119 | 1040153 | 45.282 ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 1193311 | 46.177 ug/L | 98 |
| 78) sec-Butylbenzene | 10.682 | 105 | 1568699 | 45.734 ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 640284 | 44.985 ug/L | 100 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 1305609 | 46.424 ug/L | 100 |
| 81) 1,4-Dichlorobenzene | 11.032 | 146 | 647255 | 44.173 ug/L | 99 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 580997 | 45.213 ug/L | 99 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 59112 | 47.805 ug/L | 97 |
| 84) n-Butylbenzene | 11.315 | 91 | 1178055 | 46.225 ug/L | 99 |
| 85) 1,2,4-Trichlorobenzene | 13.213 | 180 | 396454 | 46.346 ug/L | 99 |
| 86) Hexachlorobutadiene | 13.182 | 225 | 203759 | 44.447 ug/L | 99 |
| 87) Naphthalene | 13.590 | 128 | 974540 | 47.307 ug/L | 100 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 349418 | 46.323 ug/L | 99 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081706.D
Acq On : 17 Aug 2017 1:11 pm
Operator :
Sample : CAL6 46.4 ppb
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 18 13:40:22 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081707.D
Acq On : 17 Aug 2017 1:37 pm
Operator :
Sample : CAL7 92.8 ppb
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 18 13:40:26 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 759768 | 200.00 | ug/L | | 100 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 532717 | 200.00 | ug/L | | 100 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 265339 | 200.00 | ug/L | | 100 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 188148 | 200.22 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 100.11% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 232738 | 196.97 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 98.48% | | | |
| 51) Toluene-d8 | 7.058 | 98 | 717692 | 202.53 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 101.27% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 260207 | 197.97 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 98.98% | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.582 | 85 | 951918 | 98.630 | ug/L | | 100 |
| 3) Chloromethane | 1.770 | 50 | 946446 | 93.664 | ug/L | | 100 |
| 4) Vinyl chloride | 1.848 | 62 | 845274 | 95.419 | ug/L | | 100 |
| 5) Bromomethane | 2.162 | 94 | 294949 | 98.623 | ug/L | | 100 |
| 6) Chloroethane | 2.288 | 64 | 351446 | 92.708 | ug/L | | 100 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 1126162 | 94.862 | ug/L | | 100 |
| 8) Trichlorotrifluoroethane | 2.947 | 101 | 700811 | 91.071 | ug/L | | 100 |
| 9) Acrolein | 3.203 | 56 | 315041 | 235.406 | ug/L | | 100 |
| 10) Isopropyl Alcohol | 3.370 | 45 | 21854 | 211.533 | ug/L | # | 100 |
| 11) Acetone | 3.459 | 43 | 852203 | 453.967 | ug/L | | 100 |
| 12) Iodomethane | 3.041 | 142 | 666397 | 99.702 | ug/L | | 100 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 602081 | 92.689 | ug/L | | 100 |
| 14) Carbon disulfide | 2.941 | 76 | 2066266 | 94.155 | ug/L | | 100 |
| 15) Methylene chloride | 3.428 | 84 | 625951 | 93.521 | ug/L | | 100 |
| 16) Methyl Acetate | 3.574 | 43 | 582476 | 102.464 | ug/L | | 100 |
| 17) trans-1,2-Dichloroethene | 3.574 | 96 | 646683 | 92.124 | ug/L | | 100 |
| 18) Acrylonitrile | 4.139 | 53 | 547259 | 190.236 | ug/L | | 100 |
| 19) MTBE | 3.658 | 73 | 1883836 | 99.186 | ug/L | | 100 |
| 20) Tert-Butanol | 3.731 | 59 | 173628 | 443.926 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 2468227 | 97.346 | ug/L | | 100 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 1186878 | 92.536 | ug/L | | 100 |
| 23) Vinyl acetate | 4.306 | 43 | 3792617 | 240.520 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.296 | 59 | 2067272 | 97.146 | ug/L | | 100 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 696386 | 90.539 | ug/L | | 100 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 938226 | 99.441 | ug/L | | 100 |
| 27) Bromochloromethane | 4.741 | 128 | 287888 | 88.139 | ug/L | | 100 |
| 28) Cyclohexane | 4.756 | 84 | 1181717 | 95.355 | ug/L | | 100 |
| 29) Chloroform | 4.798 | 83 | 1187391 | 92.382 | ug/L | | 100 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 965926 | 93.349 | ug/L | | 100 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 1037422 | 95.311 | ug/L | | 100 |
| 34) 1,2-Dichloroethane | 5.468 | 62 | 838695 | 91.171 | ug/L | | 100 |
| 35) Benzene | 5.300 | 78 | 2657373 | 91.003 | ug/L | | 100 |
| 36) 2-Butanone | 5.044 | 43 | 1645024 | 478.150 | ug/L | | 100 |
| 37) Carbon tetrachloride | 4.934 | 117 | 986412 | 102.311 | ug/L | | 100 |
| 38) Tert-amyl Methyl Ether | 5.384 | 73 | 1784485 | 100.923 | ug/L | | 100 |
| 39) Trichloroethene | 5.808 | 130 | 711332 | 91.488 | ug/L | | 100 |
| 40) Methyl Cyclohexane | 5.808 | 55 | 1247172 | 98.013 | ug/L | | 100 |
| 41) Dibromomethane | 6.179 | 93 | 379784 | 92.245 | ug/L | | 100 |
| 42) Bromodichloromethane | 6.315 | 83 | 824959 | 97.877 | ug/L | | 100 |
| 43) 1,2-Dichloropropane | 6.257 | 63 | 683770 | 93.665 | ug/L | | 100 |
| 44) 2-Chloroethylvinylether | 6.812 | 63 | 497602 | 95.933 | ug/L | | 100 |
| 45) cis-1,3-Dichloropropene | 6.880 | 75 | 1025671 | 98.307 | ug/L | | 100 |

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081707.D
Acq On : 17 Aug 2017 1:37 pm
Operator :
Sample : CAL7 92.8 ppb
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 18 13:40:26 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

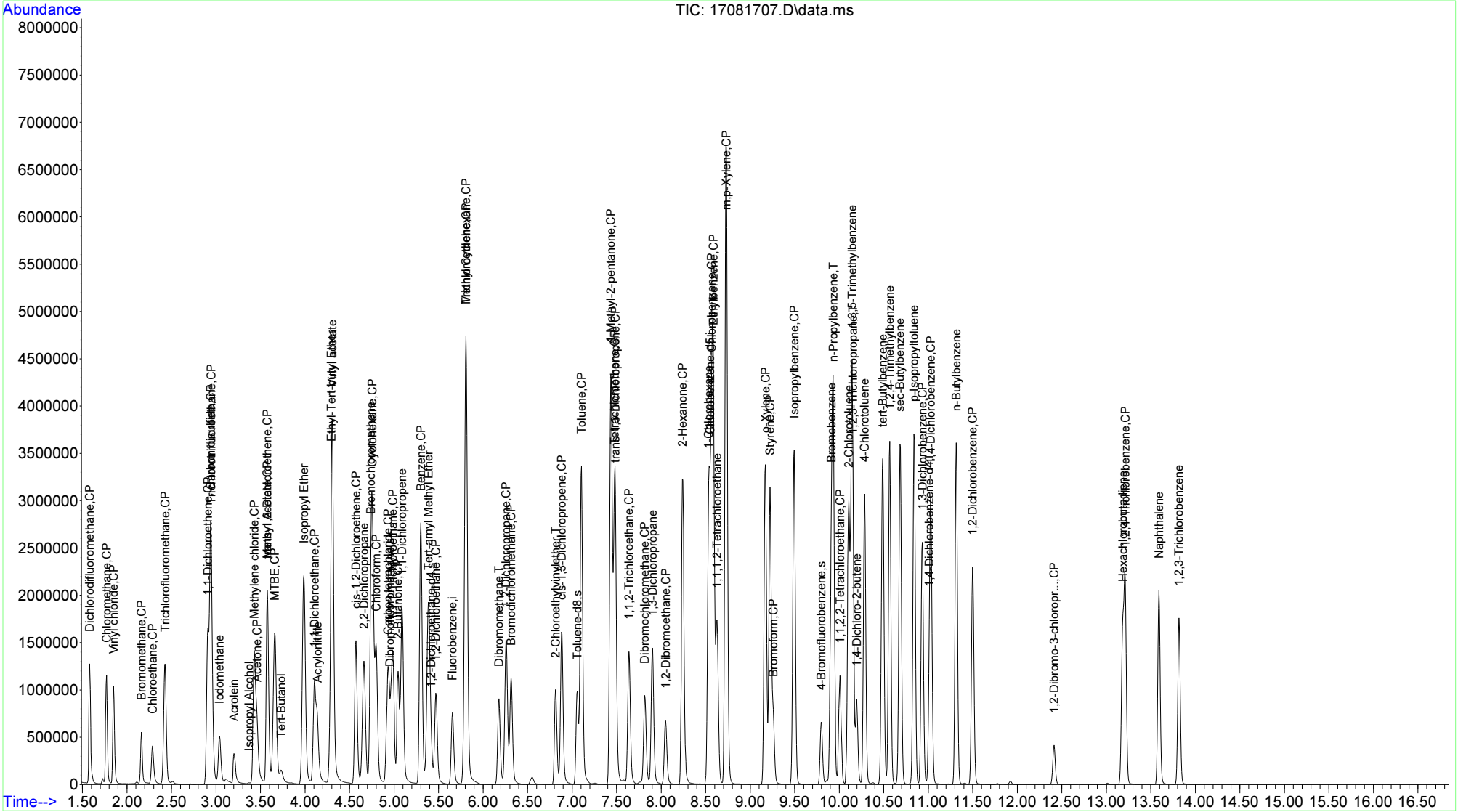
| Compound | R.T. | QIon | Response | Conc Units | %Rec |
|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 830235 | 100.077 ug/L | 100 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 535444 | 94.063 ug/L | 100 |
| 48) Toluene | 7.105 | 92 | 1668270 | 91.439 ug/L | 100 |
| 50) 4-Methyl-2-pentanone | 7.434 | 43 | 3636281 | 462.043 ug/L | 100 |
| 52) 2-Hexanone | 8.240 | 43 | 2616395 | 472.244 ug/L | 100 |
| 53) Dibromochloromethane | 7.816 | 129 | 601141 | 94.886 ug/L | 100 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 958666 | 94.060 ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 600083 | 91.471 ug/L | 100 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 574809 | 96.227 ug/L | 100 |
| 57) Chlorobenzene | 8.564 | 112 | 1712704 | 91.820 ug/L | 100 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 581777 | 94.946 ug/L | 100 |
| 59) Ethylbenzene | 8.585 | 106 | 979372 | 93.412 ug/L | 100 |
| 60) Bromoform | 9.260 | 173 | 403180 | 95.534 ug/L | 100 |
| 61) Styrene | 9.223 | 104 | 1774751 | 97.468 ug/L | 100 |
| 62) 1-Chlorohexane | 8.533 | 55 | 791834 | 93.680 ug/L | 100 |
| 63) m,p-Xylene | 8.731 | 106 | 2337475 | 184.877 ug/L | 100 |
| 64) o-Xylene | 9.171 | 106 | 1142720 | 94.863 ug/L | 100 |
| 65) Isopropylbenzene | 9.495 | 105 | 2902224 | 94.429 ug/L | 100 |
| 67) Bromobenzene | 9.913 | 156 | 713364 | 90.404 ug/L | 100 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 687718 | 90.749 ug/L | 100 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 208028 | 89.928 ug/L | 100 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 230180 | 99.798 ug/L | 100 |
| 72) n-Propylbenzene | 9.934 | 91 | 3538123 | 90.283 ug/L | 100 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 2246132 | 91.443 ug/L | 100 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 2380538 | 91.220 ug/L | 100 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 2093978 | 92.043 ug/L | 100 |
| 76) tert-Butylbenzene | 10.489 | 119 | 2132133 | 91.487 ug/L | 100 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 2411073 | 91.960 ug/L | 100 |
| 78) sec-Butylbenzene | 10.682 | 105 | 3161843 | 90.856 ug/L | 100 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 1310068 | 90.720 ug/L | 100 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 2636800 | 92.411 ug/L | 100 |
| 81) 1,4-Dichlorobenzene | 11.027 | 146 | 1329243 | 89.414 ug/L | 100 |
| 82) 1,2-Dichlorobenzene | 11.498 | 146 | 1187307 | 91.069 ug/L | 100 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 120578 | 91.440 ug/L | 100 |
| 84) n-Butylbenzene | 11.315 | 91 | 2420223 | 93.602 ug/L | 100 |
| 85) 1,2,4-Trichlorobenzene | 13.214 | 180 | 815116 | 93.920 ug/L | 100 |
| 86) Hexachlorobutadiene | 13.187 | 225 | 418098 | 89.891 ug/L | 100 |
| 87) Naphthalene | 13.590 | 128 | 1941076 | 92.872 ug/L | 100 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 706812 | 92.357 ug/L | 100 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081707.D
Acq On : 17 Aug 2017 1:37 pm
Operator :
Sample : CAL7 92.8 ppb
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 18 13:40:26 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081708.D
Acq On : 17 Aug 2017 2:00 pm
Operator :
Sample : CAL8 186 ppb
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 18 13:40:30 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 773632 | 200.00 | ug/L | 102 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 520945 | 200.00 | ug/L | 98 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 261033 | 200.00 | ug/L | 98 |
| System Monitoring Compounds | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 189494 | 198.04 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 99.02% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 237799 | 197.64 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 98.82% | | | |
| 51) Toluene-d8 | 7.058 | 98 | 730575 | 210.83 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 105.42% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 264644 | 204.66 | ug/L | 0.00 |
| Spiked Amount 200.000 | | | Recovery = 102.33% | | | |
| Target Compounds | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.582 | 85 | 1810824 | 184.261 | ug/L | 99 |
| 3) Chloromethane | 1.770 | 50 | 1725015 | 167.655 | ug/L | 100 |
| 4) Vinyl chloride | 1.848 | 62 | 1598392 | 177.202 | ug/L | 100 |
| 5) Bromomethane | 2.162 | 94 | 614576 | 201.816 | ug/L | 99 |
| 6) Chloroethane | 2.282 | 64 | 653447 | 169.284 | ug/L | 99 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 2120718 | 175.437 | ug/L | 100 |
| 8) Trichlorotrifluoroethane | 2.942 | 101 | 1345802 | 171.753 | ug/L # | 99 |
| 9) Acrolein | 3.203 | 56 | 645524 | 462.910 | ug/L | 99 |
| 10) Isopropyl Alcohol | 3.360 | 45 | 82861 | 465.737 | ug/L # | 100 |
| 11) Acetone | 3.459 | 43 | 1821815 | 931.211 | ug/L | 99 |
| 12) Iodomethane | 3.041 | 142 | 1414830 | 183.721 | ug/L | 98 |
| 13) 1,1-Dichloroethene | 2.905 | 96 | 1215997 | 183.845 | ug/L | 98 |
| 14) Carbon disulfide | 2.942 | 76 | 4034542 | 180.551 | ug/L | 99 |
| 15) Methylene chloride | 3.428 | 84 | 1242480 | 185.706 | ug/L | 99 |
| 16) Methyl Acetate | 3.569 | 43 | 1191754 | 205.886 | ug/L | 99 |
| 17) trans-1,2-Dichloroethene | 3.574 | 96 | 1296330 | 181.361 | ug/L | 99 |
| 18) Acrylonitrile | 4.139 | 53 | 1099911 | 370.534 | ug/L | 100 |
| 19) MTBE | 3.658 | 73 | 3636613 | 188.041 | ug/L | 99 |
| 20) Tert-Butanol | 3.731 | 59 | 454427 | 930.381 | ug/L # | 100 |
| 21) Isopropyl Ether | 3.988 | 45 | 4639481 | 179.701 | ug/L | 100 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 2392287 | 183.174 | ug/L | 100 |
| 23) Vinyl acetate | 4.307 | 43 | 7093682 | 460.653 | ug/L | 99 |
| 24) Ethyl-Tert-butyl Ether | 4.296 | 59 | 3873901 | 178.782 | ug/L | 99 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 1406603 | 179.599 | ug/L | 99 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 1964336 | 204.466 | ug/L | 100 |
| 27) Bromochloromethane | 4.741 | 128 | 551616 | 165.855 | ug/L | 96 |
| 28) Cyclohexane | 4.756 | 84 | 2278558 | 180.566 | ug/L | 99 |
| 29) Chloroform | 4.803 | 83 | 2360072 | 180.329 | ug/L | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 1944126 | 184.517 | ug/L | 100 |
| 33) 1,1,1-Trichloroethane | 4.987 | 97 | 2121793 | 191.442 | ug/L | 99 |
| 34) 1,2-Dichloroethane | 5.473 | 62 | 1676279 | 178.956 | ug/L | 99 |
| 35) Benzene | 5.300 | 78 | 5277655 | 177.497 | ug/L | 99 |
| 36) 2-Butanone | 5.044 | 43 | 3483980 | 994.521 | ug/L | 98 |
| 37) Carbon tetrachloride | 4.934 | 117 | 1830892 | 182.379 | ug/L | 100 |
| 38) Tert-amyl Methyl Ether | 5.384 | 73 | 3435989 | 190.842 | ug/L | 99 |
| 39) Trichloroethene | 5.808 | 130 | 1398701 | 176.671 | ug/L | 100 |
| 40) Methyl Cyclohexane | 5.808 | 55 | 2254298 | 173.986 | ug/L | 99 |
| 41) Dibromomethane | 6.179 | 93 | 769728 | 183.607 | ug/L | 98 |
| 42) Bromodichloromethane | 6.315 | 83 | 1672726 | 194.903 | ug/L | 99 |
| 43) 1,2-Dichloropropane | 6.263 | 63 | 1366733 | 183.865 | ug/L | 99 |
| 44) 2-Chloroethylvinylether | 6.812 | 63 | 979184 | 185.394 | ug/L | 99 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 2078657 | 195.663 | ug/L | 99 |

Data Path : C:\msdchem\1\data\170817\
Data File : 17081708.D
Acq On : 17 Aug 2017 2:00 pm
Operator :
Sample : CAL8 186 ppb
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 18 13:40:30 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

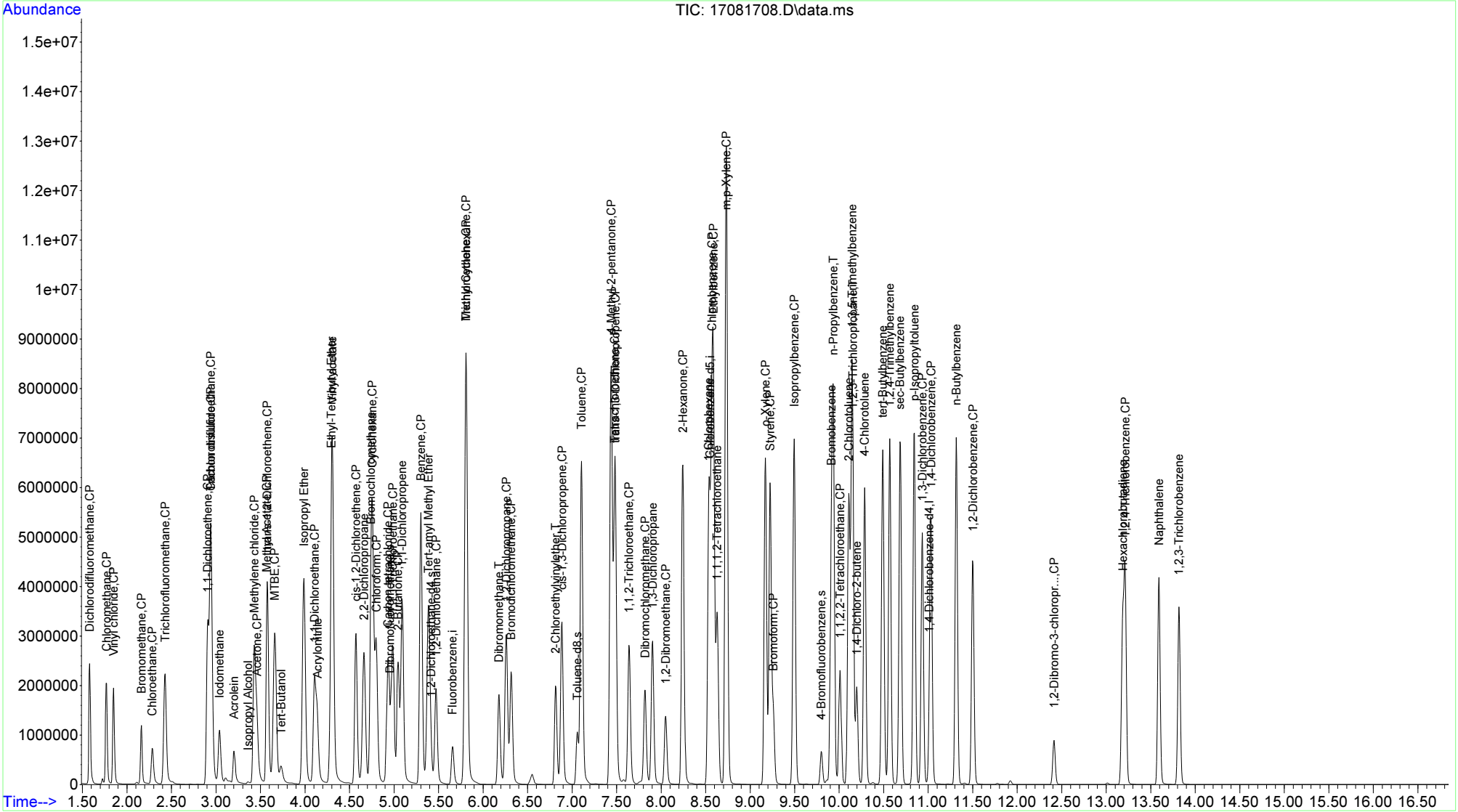
| Compound | R.T. | QIon | Response | Conc Units | %Rec |
|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.487 | 75 | 1685751 | 199.560 ug/L | 100 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 1071889 | 184.927 ug/L | 100 |
| 48) Toluene | 7.105 | 92 | 3291153 | 177.157 ug/L | 100 |
| 50) 4-Methyl-2-pentanone | 7.440 | 43 | 6976778 | 906.535 ug/L | 98 |
| 52) 2-Hexanone | 8.245 | 43 | 5216415 | 962.808 ug/L | 98 |
| 53) Dibromochloromethane | 7.821 | 129 | 1230157 | 185.224 ug/L | 99 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 1911657 | 191.802 ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 1160493 | 180.892 ug/L | 96 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 1162216 | 198.960 ug/L | 100 |
| 57) Chlorobenzene | 8.569 | 112 | 3294026 | 180.588 ug/L | 98 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 1174451 | 185.189 ug/L | 98 |
| 59) Ethylbenzene | 8.585 | 106 | 1882481 | 183.607 ug/L | 100 |
| 60) Bromoform | 9.260 | 173 | 838949 | 184.959 ug/L | 99 |
| 61) Styrene | 9.223 | 104 | 3475504 | 195.186 ug/L | 99 |
| 62) 1-Chlorohexane | 8.533 | 55 | 1571269 | 190.095 ug/L | 95 |
| 63) m,p-Xylene | 8.731 | 106 | 4400849 | 355.940 ug/L | 99 |
| 64) o-Xylene | 9.171 | 106 | 2237034 | 189.905 ug/L | 98 |
| 65) Isopropylbenzene | 9.495 | 105 | 5667995 | 188.586 ug/L | 99 |
| 67) Bromobenzene | 9.913 | 156 | 1384298 | 178.325 ug/L | 99 |
| 68) 1,1,2,2-Tetrachloroethane | 10.008 | 83 | 1403190 | 188.215 ug/L | 99 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 411579 | 180.855 ug/L | 99 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 493010 | 217.278 ug/L | 98 |
| 72) n-Propylbenzene | 9.934 | 91 | 6799457 | 176.364 ug/L | 100 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 4388213 | 181.597 ug/L | 99 |
| 74) 1,3,5-Trimethylbenzene | 10.144 | 105 | 4566396 | 177.867 ug/L | 99 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 4079134 | 182.260 ug/L | 99 |
| 76) tert-Butylbenzene | 10.489 | 119 | 4145373 | 180.806 ug/L | 98 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 4658517 | 180.610 ug/L | 100 |
| 78) sec-Butylbenzene | 10.682 | 105 | 6079645 | 177.581 ug/L | 99 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 2555454 | 179.880 ug/L | 99 |
| 80) p-Isopropyltoluene | 10.844 | 119 | 5070304 | 180.629 ug/L | 98 |
| 81) 1,4-Dichlorobenzene | 11.033 | 146 | 2568578 | 175.630 ug/L | 100 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 2331100 | 181.751 ug/L | 99 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 266241 | 186.335 ug/L | 99 |
| 84) n-Butylbenzene | 11.315 | 91 | 4659494 | 183.179 ug/L | 98 |
| 85) 1,2,4-Trichlorobenzene | 13.214 | 180 | 1640805 | 192.176 ug/L | 100 |
| 86) Hexachlorobutadiene | 13.188 | 225 | 845463 | 184.774 ug/L | 99 |
| 87) Naphthalene | 13.590 | 128 | 3994475 | 194.270 ug/L | 99 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 1435454 | 190.660 ug/L | 99 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081708.D
Acq On : 17 Aug 2017 2:00 pm
Operator :
Sample : CAL8 186 ppb
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 18 13:40:30 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081710.D
Acq On : 17 Aug 2017 3:43 pm
Operator :
Sample : SSCV 46.4 ppb
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 18 13:26:10 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 770028 | 200.00 | ug/L | | 101 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 541896 | 200.00 | ug/L | | 102 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 266556 | 200.00 | ug/L | | 100 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 188767 | 198.21 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 99.11% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 234628 | 195.92 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 97.96% | | | |
| 51) Toluene-d8 | 7.057 | 98 | 729146 | 202.28 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 101.14% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 263423 | 199.50 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 99.75% | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 473529 | 48.410 | ug/L | | 100 |
| 3) Chloromethane | 1.770 | 50 | 477113 | 46.588 | ug/L | | 99 |
| 4) Vinyl chloride | 1.848 | 62 | 423351 | 47.153 | ug/L | | 99 |
| 5) Bromomethane | 2.162 | 94 | 144183 | 47.569 | ug/L | | 99 |
| 6) Chloroethane | 2.287 | 64 | 160350 | 41.735 | ug/L | | 99 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 573627 | 47.676 | ug/L | | 99 |
| 8) Trichlorotrifluoroethane | 2.946 | 101 | 337643 | 43.292 | ug/L | # | 99 |
| 9) Acrolein | 3.208 | 56 | 163810 | 123.460 | ug/L | | 99 |
| 10) Isopropyl Alcohol | 3.381 | 45 | 20544 | 201.267 | ug/L | # | 100 |
| 11) Acetone | 3.464 | 43 | 162503 | 85.636 | ug/L | | 98 |
| 12) Iodomethane | 3.041 | 142 | 333586 | 54.399 | ug/L | | 99 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 347275 | 52.750 | ug/L | | 99 |
| 14) Carbon disulfide | 2.941 | 76 | 2792802 | 125.566 | ug/L | | 100 |
| 15) Methylene chloride | 3.433 | 84 | 328252 | 47.854 | ug/L | | 97 |
| 16) Methyl Acetate | 3.574 | 43 | 308159 | 53.486 | ug/L | | 100 |
| 17) trans-1,2-Dichloroethene | 3.579 | 96 | 348764 | 49.022 | ug/L | | 98 |
| 18) Acrylonitrile | 4.139 | 53 | 265460 | 92.278 | ug/L | | 99 |
| 19) MTBE | 3.658 | 73 | 1001431 | 52.024 | ug/L | | 99 |
| 20) Tert-Butanol | 3.736 | 59 | 116575 | 311.793 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 1344043 | 52.302 | ug/L | | 100 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 657052 | 50.545 | ug/L | | 99 |
| 23) Vinyl acetate | 4.306 | 43 | 1998050 | 123.255 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 1140078 | 52.861 | ug/L | | 100 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 361772 | 46.408 | ug/L | | 99 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 496190 | 51.890 | ug/L | | 98 |
| 27) Bromochloromethane | 4.740 | 128 | 154820 | 46.768 | ug/L | | 98 |
| 28) Cyclohexane | 4.756 | 84 | 650820 | 51.816 | ug/L | | 99 |
| 29) Chloroform | 4.803 | 83 | 618744 | 47.499 | ug/L | | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 503988 | 48.057 | ug/L | | 99 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 537427 | 48.717 | ug/L | | 99 |
| 34) 1,2-Dichloroethane | 5.467 | 62 | 430384 | 46.162 | ug/L | | 99 |
| 35) Benzene | 5.300 | 78 | 1410696 | 47.666 | ug/L | | 99 |
| 36) 2-Butanone | 5.049 | 43 | 372860 | 106.933 | ug/L | | 98 |
| 37) Carbon tetrachloride | 4.934 | 117 | 508402 | 52.837 | ug/L | | 100 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 972854 | 54.287 | ug/L | | 100 |
| 39) Trichloroethene | 5.807 | 130 | 380953 | 48.344 | ug/L | | 97 |
| 40) Methyl Cyclohexane | 5.807 | 55 | 485669 | 37.659 | ug/L | | 98 |
| 41) Dibromomethane | 6.179 | 93 | 198486 | 47.568 | ug/L | | 98 |
| 42) Bromodichloromethane | 6.315 | 83 | 421055 | 49.290 | ug/L | | 100 |
| 43) 1,2-Dichloropropane | 6.257 | 63 | 360327 | 48.701 | ug/L | | 100 |
| 44) 2-Chloroethylvinylether | 6.817 | 63 | 254150 | 48.345 | ug/L | | 99 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 503620 | 47.627 | ug/L | | 99 |

73.82%

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081710.D
Acq On : 17 Aug 2017 3:43 pm
Operator :
Sample : SSCV 46.4 ppb
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 18 13:26:10 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

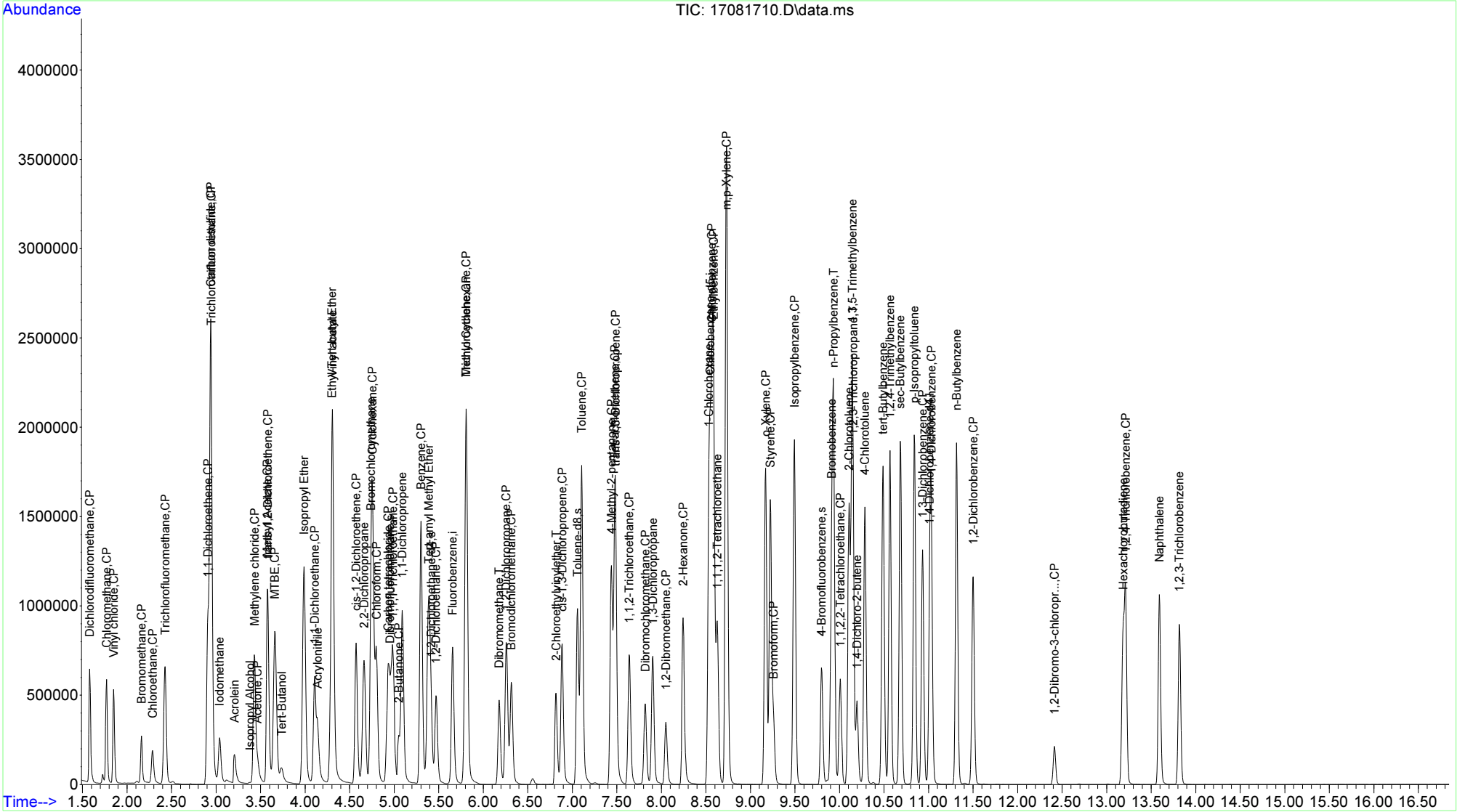
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 431671 | 51.341 | ug/L | 99 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 280433 | 48.608 | ug/L | 100 |
| 48) Toluene | 7.105 | 92 | 886165 | 47.924 | ug/L | 99 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 1024479 | 127.970 | ug/L | 100 |
| 52) 2-Hexanone | 8.245 | 43 | 755885 | 134.122 | ug/L | 98 |
| 53) Dibromochloromethane | 7.821 | 129 | 296480 | 47.850 | ug/L | 99 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 474975 | 45.813 | ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 320415 | 48.014 | ug/L | 100 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 294649 | 48.491 | ug/L | 99 |
| 57) Chlorobenzene | 8.564 | 112 | 900595 | 47.464 | ug/L | 100 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 301814 | 49.906 | ug/L | 99 |
| 59) Ethylbenzene | 8.585 | 106 | 515006 | 48.289 | ug/L | 98 |
| 60) Bromoform | 9.259 | 173 | 197297 | 48.571 | ug/L | 98 |
| 61) Styrene | 9.223 | 104 | 929755 | 50.197 | ug/L | 99 |
| 62) 1-Chlorohexane | 8.532 | 55 | 416929 | 48.491 | ug/L | 99 |
| 63) m,p-Xylene | 8.731 | 106 | 1235934 | 96.097 | ug/L | 99 |
| 64) o-Xylene | 9.170 | 106 | 594340 | 48.504 | ug/L | 99 |
| 65) Isopropylbenzene | 9.495 | 105 | 1579317 | 50.516 | ug/L | 100 |
| 67) Bromobenzene | 9.913 | 156 | 368009 | 46.425 | ug/L | 99 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 357933 | 47.016 | ug/L | 98 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 108959 | 46.886 | ug/L | 99 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 121106 | 52.268 | ug/L | 95 |
| 72) n-Propylbenzene | 9.934 | 91 | 1834746 | 46.604 | ug/L | 99 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 1173638 | 47.562 | ug/L | 99 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 1265059 | 48.255 | ug/L | 99 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 1076361 | 47.097 | ug/L | 100 |
| 76) tert-Butylbenzene | 10.489 | 119 | 1089991 | 46.556 | ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 1232011 | 46.775 | ug/L | 100 |
| 78) sec-Butylbenzene | 10.682 | 105 | 1674266 | 47.891 | ug/L | 99 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 672800 | 46.377 | ug/L | 99 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 1394034 | 48.633 | ug/L | 100 |
| 81) 1,4-Dichlorobenzene | 11.032 | 146 | 682033 | 45.669 | ug/L | 99 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 609665 | 46.549 | ug/L | 99 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 61845 | 49.000 | ug/L | 98 |
| 84) n-Butylbenzene | 11.315 | 91 | 1258186 | 48.438 | ug/L | 99 |
| 85) 1,2,4-Trichlorobenzene | 13.213 | 180 | 417881 | 47.929 | ug/L | 99 |
| 86) Hexachlorobutadiene | 13.187 | 225 | 218022 | 46.661 | ug/L | 99 |
| 87) Naphthalene | 13.590 | 128 | 1018454 | 48.506 | ug/L | 100 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 365558 | 47.548 | ug/L | 99 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081710.D
Acq On : 17 Aug 2017 3:43 pm
Operator :
Sample : SSCV 46.4 ppb
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 18 13:26:10 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081710.D
Acq On : 17 Aug 2017 3:43 pm
Operator :
Sample : SSCV 46.4 ppb
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 18 13:40:34 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

| Compound | R.T. | QIon | Response | Conc | Units | | %Rec |
|---|---|---|---|---|---|---|---|
| Internal Standards | | | | | | | |
| 1) Fluorobenzene | 5.656 | 96 | 770028 | 200.00 | ug/L | | 101 |
| 49) Chlorobenzene-d5 | 8.548 | 117 | 541896 | 200.00 | ug/L | | 102 |
| 66) 1,4-Dichlorobenzene-d4 | 11.012 | 152 | 266556 | 200.00 | ug/L | | 100 |
| System Monitoring Compounds | | | | | | | Dev(Min) |
| 30) Dibromofluoromethane | 4.955 | 113 | 188767 | 198.21 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 99.11% | | | |
| 32) 1,2-Dichloroethane-d4 | 5.415 | 65 | 234628 | 195.92 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 97.96% | | | |
| 51) Toluene-d8 | 7.057 | 98 | 729146 | 202.28 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 101.14% | | | |
| 70) 4-Bromofluorobenzene | 9.798 | 95 | 263423 | 199.50 | ug/L | | 0.00 |
| Spiked Amount 200.000 | | | Recovery = | 99.75% | | | |
| Target Compounds | | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.581 | 85 | 473529 | 48.410 | ug/L | | 100 |
| 3) Chloromethane | 1.770 | 50 | 477113 | 46.588 | ug/L | | 99 |
| 4) Vinyl chloride | 1.848 | 62 | 423351 | 47.153 | ug/L | | 99 |
| 5) Bromomethane | 2.162 | 94 | 144183 | 47.569 | ug/L | | 99 |
| 6) Chloroethane | 2.287 | 64 | 160350 | 41.735 | ug/L | | 99 |
| 7) Trichlorofluoromethane | 2.429 | 101 | 573627 | 47.676 | ug/L | | 99 |
| 8) Trichlorotrifluoroethane | 2.946 | 101 | 337643 | 43.292 | ug/L | # | 99 |
| 9) Acrolein | 3.208 | 56 | 163810 | 123.460 | ug/L | | 99 |
| 10) Isopropyl Alcohol | 3.381 | 45 | 20544 | 201.267 | ug/L | # | 100 |
| 11) Acetone | 3.464 | 43 | 162503 | 85.636 | ug/L | | 98 |
| 12) Iodomethane | 3.041 | 142 | 333586 | 54.399 | ug/L | | 99 |
| 13) 1,1-Dichloroethene | 2.910 | 96 | 347275 | 52.750 | ug/L | | 99 |
| 14) Carbon disulfide | 2.941 | 76 | 2792802 | 125.566 | ug/L | | 100 |
| 15) Methylene chloride | 3.433 | 84 | 328252 | 47.854 | ug/L | | 97 |
| 16) Methyl Acetate | 3.574 | 43 | 308159 | 53.486 | ug/L | | 100 |
| 17) trans-1,2-Dichloroethene | 3.579 | 96 | 348764 | 49.022 | ug/L | | 98 |
| 18) Acrylonitrile | 4.139 | 53 | 265460 | 92.278 | ug/L | | 99 |
| 19) MTBE | 3.658 | 73 | 1001431 | 52.024 | ug/L | | 99 |
| 20) Tert-Butanol | 3.736 | 59 | 116575 | 311.793 | ug/L | # | 100 |
| 21) Isopropyl Ether | 3.987 | 45 | 1344043 | 52.302 | ug/L | | 100 |
| 22) 1,1-Dichloroethane | 4.108 | 63 | 657052 | 50.545 | ug/L | | 99 |
| 23) Vinyl acetate | 4.306 | 43 | 1998050 | 123.255 | ug/L | | 100 |
| 24) Ethyl-Tert-butyl Ether | 4.301 | 59 | 1140078 | 52.861 | ug/L | | 100 |
| 25) cis-1,2-Dichloroethene | 4.573 | 96 | 361772 | 46.408 | ug/L | | 99 |
| 26) 2,2-Dichloropropane | 4.662 | 77 | 496190 | 51.890 | ug/L | | 98 |
| 27) Bromochloromethane | 4.740 | 128 | 154820 | 46.768 | ug/L | | 98 |
| 28) Cyclohexane | 4.756 | 84 | 650820 | 51.816 | ug/L | | 99 |
| 29) Chloroform | 4.803 | 83 | 618744 | 47.499 | ug/L | | 99 |
| 31) 1,1-Dichloropropene | 5.091 | 75 | 503988 | 48.057 | ug/L | | 99 |
| 33) 1,1,1-Trichloroethane | 4.986 | 97 | 537427 | 48.717 | ug/L | | 99 |
| 34) 1,2-Dichloroethane | 5.467 | 62 | 430384 | 46.162 | ug/L | | 99 |
| 35) Benzene | 5.300 | 78 | 1410696 | 47.666 | ug/L | | 99 |
| 36) 2-Butanone | 5.049 | 43 | 372860 | 106.933 | ug/L | | 98 |
| 37) Carbon tetrachloride | 4.934 | 117 | 508402 | 52.837 | ug/L | | 100 |
| 38) Tert-amyl Methyl Ether | 5.389 | 73 | 972854 | 54.287 | ug/L | | 100 |
| 39) Trichloroethene | 5.807 | 130 | 380953 | 48.344 | ug/L | | 97 |
| 40) Methyl Cyclohexane | 5.807 | 55 | 485669 | 37.659 | ug/L | | 98 |
| 41) Dibromomethane | 6.179 | 93 | 198486 | 47.568 | ug/L | | 98 |
| 42) Bromodichloromethane | 6.315 | 83 | 421055 | 49.290 | ug/L | | 100 |
| 43) 1,2-Dichloropropane | 6.257 | 63 | 360327 | 48.701 | ug/L | | 100 |
| 44) 2-Chloroethylvinylether | 6.817 | 63 | 254150 | 48.345 | ug/L | | 99 |
| 45) cis-1,3-Dichloropropene | 6.885 | 75 | 503620 | 47.627 | ug/L | | 99 |

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081710.D
Acq On : 17 Aug 2017 3:43 pm
Operator :
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Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 18 13:40:34 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration

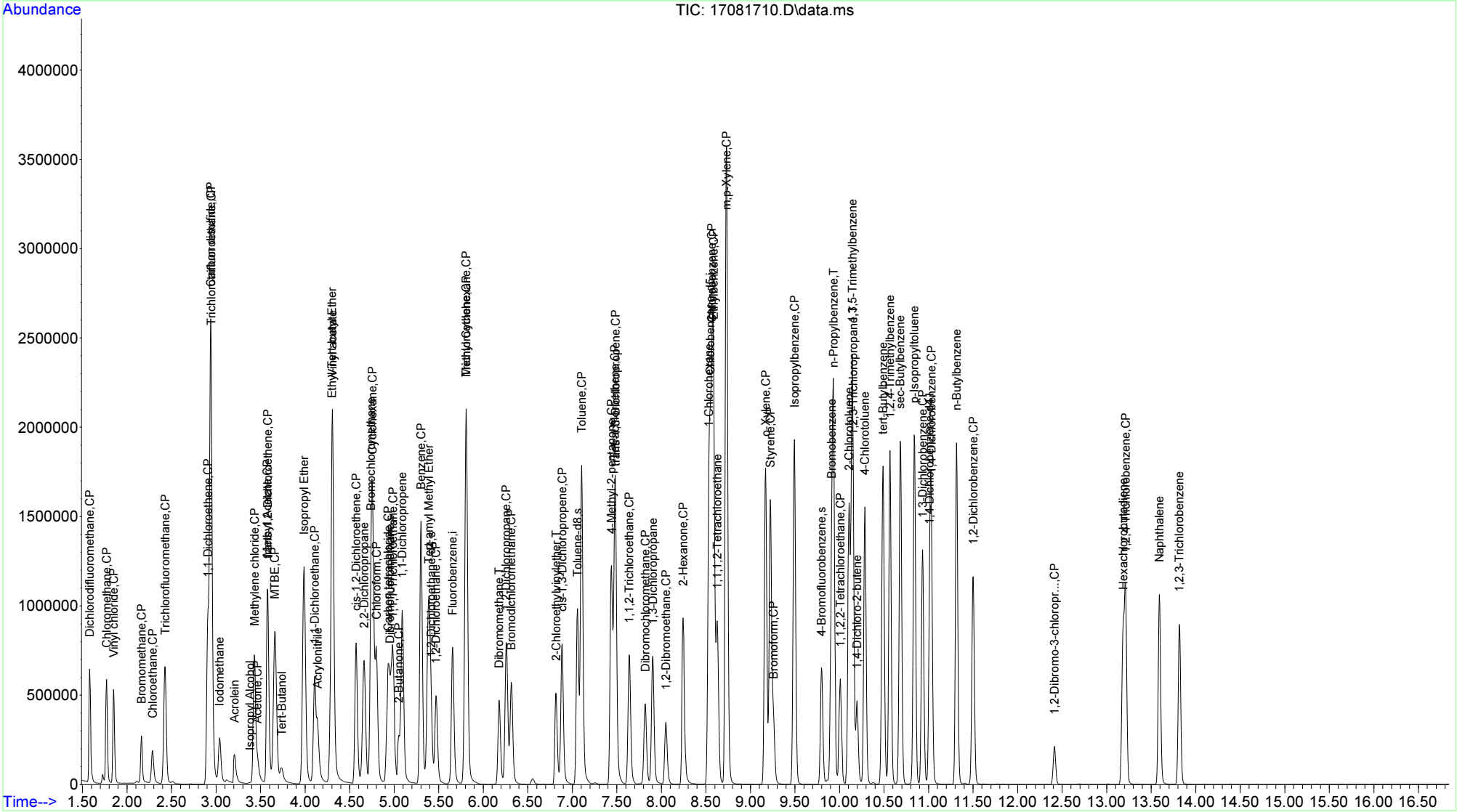
| Compound | R.T. | QIon | Response | Conc | Units | %Rec |
|---|---|---|---|---|---|---|
| 46) trans-1,3-Dichloropropene | 7.486 | 75 | 431671 | 51.341 | ug/L | 99 |
| 47) 1,1,2-Trichloroethane | 7.638 | 97 | 280433 | 48.608 | ug/L | 100 |
| 48) Toluene | 7.105 | 92 | 886165 | 47.924 | ug/L | 99 |
| 50) 4-Methyl-2-pentanone | 7.439 | 43 | 1024479 | 127.970 | ug/L | 100 |
| 52) 2-Hexanone | 8.245 | 43 | 755885 | 134.122 | ug/L | 98 |
| 53) Dibromochloromethane | 7.821 | 129 | 296480 | 47.850 | ug/L | 99 |
| 54) 1,3-Dichloropropane | 7.905 | 76 | 474975 | 45.813 | ug/L | 100 |
| 55) Tetrachloroethene | 7.476 | 164 | 320415 | 48.014 | ug/L | 100 |
| 56) 1,2-Dibromoethane | 8.051 | 107 | 294649 | 48.491 | ug/L | 99 |
| 57) Chlorobenzene | 8.564 | 112 | 900595 | 47.464 | ug/L | 100 |
| 58) 1,1,1,2-Tetrachloroethane | 8.627 | 131 | 301814 | 49.906 | ug/L | 99 |
| 59) Ethylbenzene | 8.585 | 106 | 515006 | 48.289 | ug/L | 98 |
| 60) Bromoform | 9.259 | 173 | 197297 | 48.571 | ug/L | 98 |
| 61) Styrene | 9.223 | 104 | 929755 | 50.197 | ug/L | 99 |
| 62) 1-Chlorohexane | 8.532 | 55 | 416929 | 48.491 | ug/L | 99 |
| 63) m,p-Xylene | 8.731 | 106 | 1235934 | 96.097 | ug/L | 99 |
| 64) o-Xylene | 9.170 | 106 | 594340 | 48.504 | ug/L | 99 |
| 65) Isopropylbenzene | 9.495 | 105 | 1579317 | 50.516 | ug/L | 100 |
| 67) Bromobenzene | 9.913 | 156 | 368009 | 46.425 | ug/L | 99 |
| 68) 1,1,2,2-Tetrachloroethane | 10.007 | 83 | 357933 | 47.016 | ug/L | 98 |
| 69) 1,2,3-Trichloropropane | 10.154 | 110 | 108959 | 46.886 | ug/L | 99 |
| 71) 1,4-Dichloro-2-butene | 10.196 | 53 | 121106 | 52.268 | ug/L | 95 |
| 72) n-Propylbenzene | 9.934 | 91 | 1834746 | 46.604 | ug/L | 99 |
| 73) 2-Chlorotoluene | 10.107 | 91 | 1173638 | 47.562 | ug/L | 99 |
| 74) 1,3,5-Trimethylbenzene | 10.143 | 105 | 1265059 | 48.255 | ug/L | 99 |
| 75) 4-Chlorotoluene | 10.285 | 91 | 1076361 | 47.097 | ug/L | 100 |
| 76) tert-Butylbenzene | 10.489 | 119 | 1089991 | 46.556 | ug/L | 99 |
| 77) 1,2,4-Trimethylbenzene | 10.567 | 105 | 1232011 | 46.775 | ug/L | 100 |
| 78) sec-Butylbenzene | 10.682 | 105 | 1674266 | 47.891 | ug/L | 99 |
| 79) 1,3-Dichlorobenzene | 10.933 | 146 | 672800 | 46.377 | ug/L | 99 |
| 80) p-Isopropyltoluene | 10.839 | 119 | 1394034 | 48.633 | ug/L | 100 |
| 81) 1,4-Dichlorobenzene | 11.032 | 146 | 682033 | 45.669 | ug/L | 99 |
| 82) 1,2-Dichlorobenzene | 11.503 | 146 | 609665 | 46.549 | ug/L | 99 |
| 83) 1,2-Dibromo-3-chloropr... | 12.413 | 75 | 61845 | 49.000 | ug/L | 98 |
| 84) n-Butylbenzene | 11.315 | 91 | 1258186 | 48.438 | ug/L | 99 |
| 85) 1,2,4-Trichlorobenzene | 13.213 | 180 | 417881 | 47.929 | ug/L | 99 |
| 86) Hexachlorobutadiene | 13.187 | 225 | 218022 | 46.661 | ug/L | 99 |
| 87) Naphthalene | 13.590 | 128 | 1018454 | 48.506 | ug/L | 100 |
| 88) 1,2,3-Trichlorobenzene | 13.815 | 180 | 365558 | 47.548 | ug/L | 99 |

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\170817\
Data File : 17081710.D
Acq On : 17 Aug 2017 3:43 pm
Operator :
Sample : SSCV 46.4 ppb
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 18 13:40:34 2017
Quant Method : C:\msdchem\1\methods\170817X.M
Quant Title : M-8260S
QLast Update : Thu Aug 17 14:33:11 2017
Response via : Initial Calibration



# ICP-MS4
# For

# DHL Work Order
# 1709100

# ICP-MS4_170915A
# For

# DHL Work Order
# 1709100

# Lab Data Review Check List
## EPA Method 6020A / 200.8 - Trace Metals by ICP-MS

| PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG | Run ID: ICP-MS4_170915A<br>SOP: MET-ICP-MS-02 | | | |
|---|---|---|---|---|
| **Review Item** | **Yes** | **No** | **N/A** | **2nd Level Review** |
| **Data Folder Contents**<br>1. Is the Prep Batch Report included?<br>***Check the Prep Start/End Dates, Sample Amounts, Bottle #s*** | X | | | x |
| 2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date?<br>***All standard/QC sample preparations shall be documented in LIMS*** | X | | | |
| 3. Is the Run Log and instrument sequence included?<br>***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time*** | X | | | |

## Daily Demonstration of Performance

**QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.**

| Review Item | Frequency | Limits | Pass | Fail (List Batch/Sample) **See Run Log** | 2nd Level Review |
|---|---|---|---|---|---|
| Tune | Before ICAL | RSD ≤ 5% / Peak Width@10% <0.9amu | X | | x |
| Initial Calibration Curve (ICAL) (Blank + Multi-Level CAL STDS) | Prior to samples and when ICV fails | $R^2$ ≥ 0.99 (DoD)<br>R ≥ 0.998 (6020A) | X | | |

**Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions.**

| Review Item | Frequency | Limits | Pass | Fail | N/A | Review |
|---|---|---|---|---|---|---|
| P/A Factor - Performed at least Monthly or After maintenance | After Instrument Maintenance or monthly | Increasing trend | X | | | x |
| ICSA (N/A for Method 200.8+U) | After calibration & every 12 hours | < RL (except Mn & Zn) | X | | | |
| ICSAB (N/A for Method 200.8+U) | After calibration & every 12 hours | 80-120% (correct for ICSA result) | X | | | |
| ICV (Second Source Verification) | After ICAL | 90-110% | X | | | |
| ICB | After calibration | < MDL | X | | | |
| CCV | Every 10 samples | 90-110% | X | | | |
| CCB | Every 10 samples | < MDL (ALL + DoD) | X | | | |
| Internal Standards | Every sample and QC sample | > 70% (6020A)<br>60-125% (200.8)<br>30-120% (DoD) | X | | | |
| LCVL (6020A test code) | After ICAL, every 10 samples and end of run | 70-130% | | X | | |
| LCVL (DoD) | DAILY | 80-120% | | | X | |
| LCVL (All metals test codes except 200.8/6020A) | After ICAL and end of run | 70-130% | | | X | |
| Method Blank (MB) | Every Batch | < MDL / <½ RL (DoD) or <1/10 the sample/reg limit | X | | | |
| Filter/TCLP/SPLP Blank | Filter-Dissolved only TCLP / SPLP | < MDL / <½ RL (DoD) or <1/10 the sample/reg limit | | | X | |
| Lab Control Sample (LCS) | Every Batch | 80-120% | X | | | |
| Lab Control Sample Dup (LCSD) | Every Batch | 80-120% | X | | | |
| LCSD - RPD | Every LCS/LCSD | 15 (H2O) / 20 (Soil) | X | | | |
| Matrix Spike/ Matrix Spike Duplicate (MS/MSD) | Every Batch | 70-130 / 80-120 (6020A) | | X | | |
| MSD - RPD | Every MS/MSD | 15 (H2O) / 20 (Soil) | X | | | |
| Dilution Test (SD) - RPD | Every Batch | 10 | | X | | |
| Post Digestion Spike (PDS) | Every Batch | 75-125 / 80-120 (6020A) | X | | | |

# Lab Data Review Check List
## EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

| Review Item | Criteria | Yes | No | N/A | 2nd Level Review |
|---|---|---|---|---|---|
| **Sample Analysis**<br>1. Are all sample hold times met? | 6 months | X | | | x |
| 2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed? | All results > high point of ICAL must be diluted | X | | | |
| **3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?** | | X | **Confirm with analyst if LIMS result does not match Labcore** | | |

## VARIANCE REPORT

**QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.**

| NON-CONFORMANCES / VARIANCE | Criteria | Yes | No | N/A | 2nd Level |
|---|---|---|---|---|---|
| 1. Are all non-conformances and corrective actions included and noted? | All deviations from the method and SOP that affect data quality | X | | | x |
| 2. Does the variance require approval by the Technical Director/General Manager/QA Manager? | | X | | | |

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

| VARIANCE ITEM | REASON | CORRECTIVE ACTION |
|---|---|---|
| __ CCV out of control (± 10%) | __ Carryover from previous run | __ Reanalyze QC to confirm |
| __ CCB out of control (> MDL / >½ RL) | __ Cross contamination | __ Recalibrate |
| __ MB out of control (> RL / >½ RL) | __ Lab Artifact | __ Reprep/Reanalyze sample |
| __ LCS __ LCSD out of control (± 20%) | __ Prep Spike error (describe) | __ Reprep/Reanalyze Batch |
| __ MS __ MSD out of control (± 20%) | __ Matrix Effect | __ Reanalyze Batch/Sample/QC |
| __ RPD out of control for LCS/LCSD/MS/MSD (15/25) | __ High Levels of Target Metals | __ Verify reagents are clean |
| __ Post Digestion Spike out of control (See Method) | __ Insufficient sample for QC | __ Reanalyze sample to confirm |
| __ Serial Dilution out of control (see Method) | __ Digestion/Prep Error | __ Sample results ND w/ dilution |
| __ Internal Standard(s) out of control (see Method) | __ Analytical Error | __ Client notified and approved |
| __ No MS/MSD prepared - LCS/LCSD used instead | __ Client Request | __ Flag data / Case narrative |
| __ Missing QC (other than MS/MSD) | | __ Accept data |
| __ QC sample(s) was mis-spiked | | __ Cal Std high and sample ND |
| __ ICSA/ICSAB missing or out of control (± 20%) | | |
| __ LCVL out of control (± 30%) | __ Other (describe below) | __ Other (describe below) |
| __ Sample(s) analyzed outside of HT | | |
| __ Other (describe below) | | |

**General Comments and Impact on Data**:

Analyst: _____ Date of Completion: 09/15/2017

Second-Level Review: Janice Whitt Date Stamp: 9/15/2017

REVIEWED BY
By Janice Whitt at 4:34:11 PM, 9/15/2017

# Method 200.8/6020A Calibration Curve – ICP-MS

| CAL LEVEL | RUN LOG ID | | LIMS CAL STD ID | Prep Date | |
|---|---|---|---|---|---|
| MET CAL 1 | BLANK STD 1 | | --- | 09/15/2017 | |
| MET CAL 2 | L2- | 170915 | MET-L2CAL- 170802 | 09/15/2017 | CAL2 - CAL6 |
| MET CAL 3 | L- | 170915 | MET-LCAL- 170802 | 09/15/2017 | MADE FRESH DAILY |
| MET CAL 4 | 10X- | 170915 | MET-LCAL10X- 170802 | 09/15/2017 | |
| MET CAL 5 | 5X- | 170915 | MET-LCAL5X- 170802 | 09/15/2017 | |
| MET CAL 6 | 2X- | 170915 | MET-MCAL- 170802 | 09/15/2017 | |
| MET CAL 7 | H- | 170915 | MET-HCAL-170802 | 08/02/2017 | |
| MET CAL 8 | H2- | 170915 | MET-H2CAL-170802 | 08/02/2017 | |

| Metal | MET CAL 2 | MET CAL 3 | MET CAL 4 | MET CAL 5 | MET CAL 6 | MET CAL 7 | MET CAL 8 |
|---|---|---|---|---|---|---|---|
| | MET-L2CAL (10X OF LCAL) | MET-LCAL (50X OF HCAL) | MET-LCAL10X (10X OF HCAL) | MET-LCAL5X (5X OF HCAL) | MET-MCAL (2X OF HCAL) | MET-HCAL (SEE BELOW) | MET-H2CAL (SEE BELOW) |
| Aluminum | 20 | 200 | 1000 | 2000 | 5000 | 10,000 | --- |
| Antimony | 1 | 10 | 50 | 100 | 250 | 500 | --- |
| Arsenic | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Barium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Beryllium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Boron | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Cadmium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Calcium | 20 | 200 | 1000 | 2000 | 5000 | 10,000 | 2000 |
| Chromium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Cobalt | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Copper | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Iron | 20 | 200 | 1000 | 2000 | 5000 | 10,000 | --- |
| Lead | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Lithium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Magnesium | 20 | 200 | 1000 | 2000 | 5000 | 10,000 | 2000 |
| Manganese | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Molybdenum | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Nickel | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Potassium | 20 | 200 | 1000 | 2000 | 5000 | 10,000 | 25,000 |
| Selenium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Silver | 1 | 10 | 50 | 100 | 250 | 500 | --- |
| Sodium | 20 | 200 | 1000 | 2000 | 5000 | 10,000 | 25,000 |
| Strontium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Thallium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Tin | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Titanium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Uranium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Vanadium | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |
| Zinc | 1 | 10 | 50 | 100 | 250 | 500 | 2000 |

**MET CAL 7:** MET-HCAL-170802

| STOCK | Amount Used | Final Volume (mL) | Final Conc (µg/L) |
|---|---|---|---|
| AL PRIMARY STD 1000 PPM | 500 µL | 50 | 10,000 |
| FE PRIMARY STD 1000 PPM | 500 µL | 50 | 10,000 |
| 2500 PPM NATURALS SPIKE | 200 µL | 50 | 10,000 |
| 50 PPM CUSTOM+Sr,Sn,Ti, | 500 µL | 50 | 2000 |
| Sb + Ag 50 PPM | 500 µL | 50 | 2000 |

**MET CAL 8:** MET-H2CAL-170802

| STOCK | Amount Used | Final Volume (mL) | Final Conc (µg/L) |
|---|---|---|---|
| 1000 PPM STRONTIUM STD | 100 µL | 50 | 2000 |
| 1000 PPM TIN STD | 100 µL | 50 | 2000 |
| 1000 PPM TITANIUM STD | 100 µL | 50 | 2000 |
| 1000 PPM URANIUM STD | 100 µL | 50 | 2000 |
| 1000 PPM BORON STD | 100 µL | 50 | 2000 |
| 1000 PPM LITHIUM STD | 100 µL | 50 | 2000 |
| 1000 PPM MOLYBDENUM | 100 µL | 50 | 2000 |
| 500 PPM CUSTOM MIX STD | 200 µL | 50 | 2000 |
| 2500 PPM NATURALS SPIKE | 500 µL | 50 | 25,000 |

Analyst/Date: 09/15/2017

Second-Level Review/Date: REVIEWED BY By Janice Whitt at 3:59:29 PM, 9/15/2017

**DHL Analytical, Inc.**

**Run ID:** ICP-MS4_170915A **Run No.:** 94175

**Analytical Run Date:** 9/15/2017 **InstrumentID:** ICP-MS4

**Analyst:** Ryan Oliver

| SampID | DF | TestCode | SampType | Batch ID | Analysis Date/Time | Q | Comments |
|---|---|---|---|---|---|---|---|
| BLANK STD 1 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:13:00 AM | | |
| L2-170915 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:15:00 AM | | |
| L-170915 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:17:00 AM | | |
| 10X-170915 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:19:00 AM | | |
| 5X-170915 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:21:00 AM | | |
| 2X-170915 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:23:00 AM | | |
| H-170915 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:24:00 AM | | |
| H2-170915 | 1 | 6020A_W | CAL | R94175 | 9/15/2017 10:26:00 AM | | |
| ICSA-170915 | 1 | 6020A_W | ICSA | R94175 | 9/15/2017 10:32:00 AM | | |
| ICSAB-170915 | 1 | 6020A_W | ICSB | R94175 | 9/15/2017 10:34:00 AM | | |
| ICV-170915 | 1 | 6020A_W | ICV | R94175 | 9/15/2017 10:40:00 AM | | |
| LCVL-170915 | 1 | 6020A_W | LCVL | R94175 | 9/15/2017 10:50:00 AM | | |
| ICB-170915 | 1 | 6020A_W | ICB | R94175 | 9/15/2017 10:54:00 AM | | |
| MB-82353 | 5 | 6020A_S | MBLK | 82353 | 9/15/2017 10:56:00 AM | | |
| LCS-82353 | 5 | 6020A_S | LCS | 82353 | 9/15/2017 10:58:00 AM | | |
| LCSD-82353 | 5 | 6020A_S | LCSD | 82353 | 9/15/2017 11:00:00 AM | | |
| 1709034-02C | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:04:00 AM | | |
| 1709034-02C SD | 25 | 6020A_S | SD | 82353 | 9/15/2017 11:05:00 AM | | R-flag Se, Zn; PDS passes |
| 1709083-02A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:07:00 AM | | |
| 1709085-02A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:09:00 AM | | |
| 1709098-01A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:11:00 AM | | |
| 1709108-04B | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:13:00 AM | | |
| 1709034-04C | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:15:00 AM | | |
| 1709034-06C | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:17:00 AM | | |
| 1709034-08C | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:19:00 AM | | |
| 1709034-10C | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:20:00 AM | | |
| 1709092-01A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:22:00 AM | | |
| 1709034-02C PDS | 5 | 6020A_S | PDS | 82353 | 9/15/2017 11:24:00 AM | | |
| 1709034-02C MS | 5 | 6020A_S | MS | 82353 | 9/15/2017 11:26:00 AM | | |
| 1709034-02C MSD | 5 | 6020A_S | MSD | 82353 | 9/15/2017 11:28:00 AM | | |

| Std ID | Std Name | Type | Exp. Date |
|---|---|---|---|
| MET-CCV-170802 | ICPMS CCV 200/5000 PPB | CCV | 02/03/2018 |
| MET-H2CAL-170802 | ICPMS High Cal2 2000ppb std 8 | CAL | 02/03/2018 |
| MET-HCAL-170802 | ICPMS High Cal 500ppb/10ppm std | CAL | 02/03/2018 |
| MET-ICV-170802 | ICPMS ICV 100 ppb | ICV | 02/03/2018 |
| MET-IS-170530 | INTERNAL STANDARD 1 PPM | CAL | 11/28/2017 |
| MET-L2CAL-170802 | ICPMS Low Cal2 1/20ppb std 2 | CAL | 02/03/2018 |
| MET-LCAL-170802 | ICPMS Low Cal 10/200ppb std 3 | CAL | 02/03/2018 |
| MET-LCAL10X-1708 | ICPMS Low Cal 50/1000ppb std 4 | CAL | 02/03/2018 |
| MET-LCAL5X-17080 | ICPMS Low Cal 100/2000ppb std 5 | CAL | 02/03/2018 |
| MET-MCAL-170802 | ICPMS Mid Cal 250/5000ppb std 6 | CAL | 02/03/2018 |
| MET-PA-170417 | ICPMS PA FACTOR SOLUTION | CAL | 10/17/2017 |
| MET-PDS-170814-1 | 10 PPM Ag+Sb PDS | CAL | 02/14/2018 |
| MET-PDS-170814-2 | 10 PPM CUSTOM PDS SOLUTION | PDS | 02/14/2018 |
| MET-PDS-170814-3 | 250 PPM Naturals+Al+Fe PDS | PDS | 02/14/2018 |
| MET-TUNECHK-170 | 100ppb TUNE CHECK SOLUTION | TUNE | 09/18/2017 |

**DHL Analytical, Inc.**

**Run ID: ICP-MS4_170915A** **Run No.:** 94175

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CCV1-170915 | 1 | 6020A_W | CCV | R94175 | 9/15/2017 11:30:00 AM | | |
| LCVL1-170915 | 1 | 6020A_W | LCVL | R94175 | 9/15/2017 11:35:00 AM | | |
| CCB1-170915 | 1 | 6020A_W | CCB | R94175 | 9/15/2017 11:40:00 AM | | |
| 1709092-02A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:42:00 AM | | |
| 1709092-03A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:44:00 AM | | |
| 1709092-04A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:45:00 AM | | |
| 1709092-05A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:47:00 AM | | |
| 1709092-06A | 5 | 6020A_S | SAMP | 82353 | 9/15/2017 11:49:00 AM | | |
| CCV2-170915 | 1 | 6020A_W | CCV | R94175 | 9/15/2017 11:51:00 AM | | |
| LCVL2-170915 | 1 | 6020A_W | LCVL | R94175 | 9/15/2017 11:57:00 AM | | |
| CCB2-170915 | 1 | 6020A_W | CCB | R94175 | 9/15/2017 12:03:00 PM | | |
| CCV3-170915 | 1 | 6020A_W | CCV | R94175 | 9/15/2017 12:36:00 PM | | |
| LCVL3-170915 | 1 | 6020A_W | LCVL | R94175 | 9/15/2017 12:42:00 PM | | |
| CCB3-170915 | 1 | 6020A_W | CCB | R94175 | 9/15/2017 12:44:00 PM | | |
| MB-82354 | 1 | 6020A_W | MBLK | 82354 | 9/15/2017 12:46:00 PM | | |
| LCS-82354 | 1 | 6020A_W | LCS | 82354 | 9/15/2017 12:48:00 PM | | |
| LCSD-82354 | 1 | 6020A_W | LCSD | 82354 | 9/15/2017 12:50:00 PM | | |
| 1709087-01A | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 12:54:00 PM | | |
| 1709087-01A SD | 5 | 6020A_W | SD | 82354 | 9/15/2017 12:56:00 PM | | |
| 1709083-01A | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 12:58:00 PM | | |
| 1709084-01A | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:00:00 PM | | |
| 1709085-01A | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:02:00 PM | | |
| 1709099-01B | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:04:00 PM | | |
| 1709100-01B | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:05:00 PM | | Int Std. Bi-low, does not effect reported |
| 1709108-02B | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:07:00 PM | | compound. jw 9/15/2017 |
| 1709089-01B | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:09:00 PM | | DNR; Reran @ dilution |
| 1709089-02B | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:11:00 PM | | DNR; Reran @ dilution |
| 1709089-03B | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 1:13:00 PM | | DNR; Reran @ dilution |
| 1709087-01A PDS | 1 | 6020A_W | PDS | 82354 | 9/15/2017 1:15:00 PM | | |
| 1709087-01A MS | 1 | 6020A_W | MS | 82354 | 9/15/2017 1:17:00 PM | | S-flag Na- Low |
| 1709087-01A MSD | 1 | 6020A_W | MSD | 82354 | 9/15/2017 1:19:00 PM | | S-flag Na- Low |
| CCV4-170915 | 1 | 6020A_W | CCV | R94175 | 9/15/2017 1:24:00 PM | | |
| LCVL4-170915 | 1 | 6020A_W | LCVL | R94175 | 9/15/2017 1:46:00 PM | | S-flag Na; Associated samples are clsoer to CCV level; CCV/CCB pass |
| CCB4-170915 | 1 | 6020A_W | CCB | R94175 | 9/15/2017 1:48:00 PM | | |
| 1709087-01A | 10 | 6020A_W | SAMP | 82354 | 9/15/2017 1:50:00 PM | | |

| Std ID | Std Name | Type | Exp. Date |
|---|---|---|---|
| MET-CCV-170802 | ICPMS CCV 200/5000 PPB | CCV | 02/03/2018 |
| MET-H2CAL-170802 | ICPMS High Cal2 2000ppb std 8 | CAL | 02/03/2018 |
| MET-HCAL-170802 | ICPMS High Cal 500ppb/10ppm std | CAL | 02/03/2018 |
| MET-ICV-170802 | ICPMS ICV 100 ppb | ICV | 02/03/2018 |
| MET-IS-170530 | INTERNAL STANDARD 1 PPM | CAL | 11/28/2017 |
| MET-L2CAL-170802 | ICPMS Low Cal2 1/20ppb std 2 | CAL | 02/03/2018 |
| MET-LCAL-170802 | ICPMS Low Cal 10/200ppb std 3 | CAL | 02/03/2018 |
| MET-LCAL10X-1708 | ICPMS Low Cal 50/1000ppb std 4 | CAL | 02/03/2018 |
| MET-LCAL5X-17080 | ICPMS Low Cal 100/2000ppb std 5 | CAL | 02/03/2018 |
| MET-MCAL-170802 | ICPMS Mid Cal 250/5000ppb std 6 | CAL | 02/03/2018 |
| MET-PA-170417 | ICPMS PA FACTOR SOLUTION | CAL | 10/17/2017 |
| MET-PDS-170814-1 | 10 PPM Ag+Sb PDS | CAL | 02/14/2018 |
| MET-PDS-170814-2 | 10 PPM CUSTOM PDS SOLUTION | PDS | 02/14/2018 |
| MET-PDS-170814-3 | 250 PPM Naturals+Al+Fe PDS | PDS | 02/14/2018 |
| MET-TUNECHK-170 | 100ppb TUNE CHECK SOLUTION | TUNE | 09/18/2017 |

**DHL Analytical, Inc.**

**Run ID: ICP-MS4_170915A** **Run No.:** 94175

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1709087-01A SD | 50 | 6020A_W | SD | 82354 | 9/15/2017 1:52:00 PM | | |
| 1709087-01A PDS | 10 | 6020A_W | PDS | 82354 | 9/15/2017 1:54:00 PM | | |
| 1709089-01B | 50 | 6020A_W | SAMP | 82354 | 9/15/2017 1:56:00 PM | | |
| 1709089-02B | 50 | 6020A_W | SAMP | 82354 | 9/15/2017 1:58:00 PM | | |
| 1709089-03B | 50 | 6020A_W | SAMP | 82354 | 9/15/2017 2:00:00 PM | | |
| 1709087-02A | 10 | 6020A_W | SAMP | 82354 | 9/15/2017 2:02:00 PM | | |
| 1709087-03A | 10 | 6020A_W | SAMP | 82354 | 9/15/2017 2:04:00 PM | | |
| 1709087-02A | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 2:06:00 PM | | |
| 1709087-03A | 1 | 6020A_W | SAMP | 82354 | 9/15/2017 2:08:00 PM | | |
| CCV5-170915 | 1 | 6020A_W | CCV | R94175 | 9/15/2017 2:13:00 PM | | |
| LCVL5-170915 | 1 | 6020A_W | LCVL | R94175 | 9/15/2017 2:18:00 PM | | |
| CCB5-170915 | 1 | 6020A_W | CCB | R94175 | 9/15/2017 2:28:00 PM | | |

| Std ID | Std Name | Type | Exp. Date |
|---|---|---|---|
| MET-CCV-170802 | ICPMS CCV 200/5000 PPB | CCV | 02/03/2018 |
| MET-H2CAL-170802 | ICPMS High Cal2 2000ppb std 8 | CAL | 02/03/2018 |
| MET-HCAL-170802 | ICPMS High Cal 500ppb/10ppm std | CAL | 02/03/2018 |
| MET-ICV-170802 | ICPMS ICV 100 ppb | ICV | 02/03/2018 |
| MET-IS-170530 | INTERNAL STANDARD 1 PPM | CAL | 11/28/2017 |
| MET-L2CAL-170802 | ICPMS Low Cal2 1/20ppb std 2 | CAL | 02/03/2018 |
| MET-LCAL-170802 | ICPMS Low Cal 10/200ppb std 3 | CAL | 02/03/2018 |
| MET-LCAL10X-1708 | ICPMS Low Cal 50/1000ppb std 4 | CAL | 02/03/2018 |
| MET-LCAL5X-17080 | ICPMS Low Cal 100/2000ppb std 5 | CAL | 02/03/2018 |
| MET-MCAL-170802 | ICPMS Mid Cal 250/5000ppb std 6 | CAL | 02/03/2018 |
| MET-PA-170417 | ICPMS PA FACTOR SOLUTION | CAL | 10/17/2017 |
| MET-PDS-170814-1 | 10 PPM Ag+Sb PDS | CAL | 02/14/2018 |
| MET-PDS-170814-2 | 10 PPM CUSTOM PDS SOLUTION | PDS | 02/14/2018 |
| MET-PDS-170814-3 | 250 PPM Naturals+Al+Fe PDS | PDS | 02/14/2018 |
| MET-TUNECHK-170 | 100ppb TUNE CHECK SOLUTION | TUNE | 09/18/2017 |

# Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\170915.b

## Acquisition Order

| # | Sequence Flow |
|---|---|
| 1 | Calibration Standards |
| 2 | Unknown Samples |
| 3 | Blank Samples |

**Calibration Standards:**

| # | Skip | Sample Type | Sample Name | Comment | Vial# | Level | Total Dil. |
|---|---|---|---|---|---|---|---|
| 1 | | CCB | | CAL 6020A_W | 1101 | | |
| 2 | | CCB | | CAL 6020A_W | 1101 | | |
| 3 | | CCB | | CAL 6020A_W | 1102 | | |
| 4 | | CCB | | CAL 6020A_W | 1102 | | |
| 5 | | CCB | | CAL 6020A_W | 1102 | | |
| 6 | | CCB | | CAL 6020A_W | 1103 | | |
| 7 | | CCB | | CAL 6020A_W | 1103 | | |
| 8 | | CCB | | CAL 6020A_W | 1103 | | |
| 9 | | CalBlk | BLANK STD 1 | CAL 6020A_W | 2101 | 1 | |
| 10 | | CalStd | L2-170915 | CAL 6020A_W | 2102 | 2 | |
| 11 | | CalStd | L-170915 | CAL 6020A_W | 2103 | 3 | |
| 12 | | CalStd | 10X-170915 | CAL 6020A_W | 2104 | 4 | |
| 13 | | CalStd | 5X-170915 | CAL 6020A_W | 2105 | 5 | |
| 14 | | CalStd | 2X-170915 | CAL 6020A_W | 2106 | 6 | |
| 15 | | CalStd | H-170915 | CAL 6020A_W | 2107 | 7 | |
| 16 | | CalStd | H2-170915 | CAL 6020A_W | 2108 | 8 | |
| 17 | | ICB | BLANK | CCB 6020A_W | 1101 | | |
| 18 | | ICB | BLANK | CCB 6020A_W | 1102 | | |
| 19 | | ICSA | ICSA-170915 | ICSA6020A_W | 2109 | | |
| 20 | | ICSB | ICSAB-170915 | ICSB6020A_W | 2110 | | |
| 21 | | ICB | BLANK | CCB 6020A_W | 1101 | | |
| 22 | | ICB | BLANK | CCB 6020A_W | 1102 | | |
| 23 | | ICV | ICV-170915 | ICV 6020A_W | 2111 | | |
| 24 | | ICB | ICB-170915 | ICB 6020A_W | 1101 | | |
| 25 | | LLICV | LCVL-170915 | LCVL6020A_W | 2112 | | |
| 26 | | ICB | ICB-170915 | ICB 6020A_W | 1102 | | |
| 27 | | ICB | ICB-170915 | ICB 6020A_W | 1103 | | |
| 28 | | PB | MB-82353 | MBLK6020A_S | 2201 | | 5 |
| 29 | | LCS_S | LCS-82353 | LCS 6020A_S | 2202 | | 5 |
| 30 | | LCS_S | LCSD-82353 | LCSD6020A_S | 2203 | | 5 |
| 31 | | CCB | RINSE | CCB 6020A_W | 1101 | | |
| 32 | | AllRef | 1709034-02C | SAMP6020A_S | 2204 | | 5 |
| 33 | | SD | 1709034-02C SD | SD 6020A_S | 2205 | | 25 |
| 34 | | Sample | 1709083-02A | SAMP6020A_S | 2206 | | 5 |
| 35 | | Sample | 1709085-02A | SAMP6020A_S | 2207 | | 5 |
| 36 | | Sample | 1709098-01A | SAMP6020A_S | 2208 | | 5 |
| 37 | | Sample | 1709108-04B | SAMP6020A_S | 2209 | | 5 |
| 38 | | Sample | 1709034-04C | SAMP6020A_S | 2210 | | 5 |
| 39 | | Sample | 1709034-06C | SAMP6020A_S | 2211 | | 5 |
| 40 | | Sample | 1709034-08C | SAMP6020A_S | 2212 | | 5 |
| 41 | | Sample | 1709034-10C | SAMP6020A_S | 2301 | | 5 |
| 42 | | Sample | 1709092-01A | SAMP6020A_S | 2302 | | 5 |
| 43 | | PDS | 1709034-02C PDS | PDS 6020A_S | 2303 | | 5 |
| 44 | | MS_S | 1709034-02C MS | MS 6020A_S | 2304 | | 5 |
| 45 | | MS_S | 1709034-02C MSD | MSD 6020A_S | 2305 | | 5 |
| 46 | | CCV | CCV1-170915 | CCV 6020A_W | 1207 | | |
| 47 | | CCB | CCB1-170915 | CCB 6020A_W | 1102 | | |
| 48 | | LLCCV | LCVL1-170915 | LCVL6020A_W | 2112 | | |

# Sample List

| | | | | | |
|---|---|---|---|---|---|
| 49 | CCB | CCB1-170915 | CCB 6020A_W | 1103 | |
| 50 | Sample | 1709092-02A | SAMP6020A_S | 2306 | 5 |
| 51 | Sample | 1709092-03A | SAMP6020A_S | 2307 | 5 |
| 52 | Sample | 1709092-04A | SAMP6020A_S | 2308 | 5 |
| 53 | Sample | 1709092-05A | SAMP6020A_S | 2309 | 5 |
| 54 | Sample | 1709092-06A | SAMP6020A_S | 2310 | 5 |
| 55 | CCV | CCV2-170915 | CCV 6020A_W | 1207 | |
| 56 | CCB | CCB2-170915 | CCB 6020A_W | 1102 | |
| 57 | LLCCV | LCVL2-170915 | LCVL6020A_W | 2112 | |
| 58 | CCB | CCB2-170915 | CCB 6020A_W | 1103 | |
| 59 | PB_W | MB-82355 | MBLKTCLP_MET | 3101 | 1 |
| 60 | PB_W | MB-82348-TCLP | MBLKTCLP_MET | 3102 | 1 |
| 61 | LCS_W | LCS-82355 | LCS TCLP_MET | 3103 | 1 |
| 62 | LCS_W | LCSD-82355 | LCSDTCLP_MET | 3104 | 1 |
| 63 | CCB | RINSE | CCB 6020A_W | 1101 | |
| 64 | AllRef | 1709077-02A | SAMPTCLP_MET | 3105 | 1 |
| 65 | SD | 1709077-02A SD | SD TCLP_MET | 3106 | 5 |
| 66 | SAMP_W | 1709093-01A | SAMPTCLP_MET | 3107 | 1 |
| 67 | SAMP_W | 1709094-01A | SAMPTCLP_MET | 3108 | 1 |
| 68 | SAMP_W | 1709077-01A | SAMPTCLP_MET | 3109 | 1 |
| 69 | SAMP_W | 1709048-01A | SAMPTCLP_MET | 3110 | 1 |
| 70 | PDS | 1709077-02A PDS | PDS TCLP_MET | 3111 | 1 |
| 71 | MS_W | 1709077-02A MS | MS TCLP_MET | 3112 | 1 |
| 72 | MS_W | 1709077-02A MSD | MSD TCLP_MET | 3201 | 1 |
| 73 | CCB | RINSE | CCB 6020A_W | 1102 | |
| 74 | CCB | RINSE | CCB 6020A_W | 1103 | |
| 75 | CCV | CCV3-170915 | CCV 6020A_W | 1207 | |
| 76 | CCB | CCB3-170915 | CCB 6020A_W | 1102 | |
| 77 | LLCCV | LCVL3-170915 | LCVL6020A_W | 2512 | |
| 78 | CCB | CCB3-170915 | CCB 6020A_W | 1103 | |
| 79 | PB_W | MB-82354 | MBLK6020A_W | 4101 | 1 |
| 80 | LCS_W | LCS-82354 | LCS 6020A_W | 4102 | 1 |
| 81 | LCS_W | LCSD-82354 | LCSD6020A_W | 4103 | 1 |
| 82 | CCB | RINSE | CCB 6020A_W | 1101 | |
| 83 | AllRef | 1709087-01A | SAMP6020A_W | 4104 | 1 |
| 84 | SD | 1709087-01A SD | SD 6020A_W | 4105 | 5 |
| 85 | SAMP_W | 1709083-01A | SAMP6020A_W | 4106 | 1 |
| 86 | SAMP_W | 1709084-01A | SAMP6020A_W | 4107 | 1 |
| 87 | SAMP_W | 1709085-01A | SAMP6020A_W | 4108 | 1 |
| 88 | SAMP_W | 1709099-01B | SAMP6020A_W | 4109 | 1 |
| 89 | SAMP_W | 1709100-01B | SAMP6020A_W | 4110 | 1 |
| 90 | SAMP_W | 1709108-02B | SAMP6020A_W | 4111 | 1 |
| 91 | SAMP_W | 1709089-01B | SAMP6020A_W | 4112 | 1 |
| 92 | SAMP_W | 1709089-02B | SAMP6020A_W | 4201 | 1 |
| 93 | SAMP_W | 1709089-03B | SAMP6020A_W | 4202 | 1 |
| 94 | PDS | 1709087-01A PDS | PDS 6020A_W | 4203 | 1 |
| 95 | MS_W | 1709087-01A MS | MS 6020A_W | 4204 | 1 |
| 96 | MS_W | 1709087-01A MSD | MSD 6020A_W | 4205 | 1 |
| 97 | CCB | RINSE | CCB 6020A_W | 1102 | |
| 98 | CCB | RINSE | CCB 6020A_W | 1103 | |
| 99 | CCV | CCV4-170915 | CCV 6020A_W | 1207 | |
| 100 | CCB | CCB4-170915 | CCB 6020A_W | 1102 | |
| 101 | CCB | CCB4-170915 | CCB 6020A_W | 1102 | |
| 102 | CCB | CCB4-170915 | CCB 6020A_W | 1103 | |
| 103 | CCB | CCB4-170915 | CCB 6020A_W | 1103 | |
| 104 | LLCCV | LCVL4-170915 | LCVL6020A_W | 2512 | |
| 105 | CCB | CCB4-170915 | CCB 6020A_W | 1103 | |
| 106 | AllRef | 1709087-01A | SAMP6020A_W | 4301 | 1 |
| 107 | SD | 1709087-01A SD | SD 6020A_W | 4302 | 50 |

# Sample List

| | | | | | |
|---|---|---|---|---|---|
| 108 | PDS | 1709087-01A PDS | PDS 6020A_W | 4303 | 10 |
| 109 | SAMP_W | 1709089-01B | SAMP6020A_W | 4304 | 50 |
| 110 | SAMP_W | 1709089-02B | SAMP6020A_W | 4305 | 50 |
| 111 | SAMP_W | 1709089-03B | SAMP6020A_W | 4306 | 50 |
| 112 | SAMP_W | 1709087-02A | SAMP6020A_W | 4307 | 10 |
| 113 | SAMP_W | 1709087-03A | SAMP6020A_W | 4308 | 10 |
| 114 | SAMP_W | 1709087-02A | SAMP6020A_W | 4206 | 1 |
| 115 | SAMP_W | 1709087-03A | SAMP6020A_W | 4207 | 1 |
| 116 | CCB | RINSE | CCB 6020A_W | 1102 | |
| 117 | CCB | RINSE | CCB 6020A_W | 1103 | |
| 118 | CCV | CCV5-170915 | CCV 6020A_W | 1207 | |
| 119 | CCB | CCB5-170915 | CCB 6020A_W | 1102 | |
| 120 | LLCCV | LCVL5-170915 | LCVL6020A_W | 2511 | |
| 121 | CCB | CCB5-170915 | CCB 6020A_W | 1102 | |
| 122 | CCB | CCB5-170915 | CCB 6020A_W | 1102 | |
| 123 | CCB | CCB5-170915 | CCB 6020A_W | 1102 | |
| 124 | CCB | CCB5-170915 | CCB 6020A_W | 1103 | |
| 125 | CCB | CCB5-170915 | CCB 6020A_W | 1103 | |

**Unknown Samples:**

| # | Skip | Sample Type | Sample Name | Comment | Vial# | Level | Total Dil. |
|---|---|---|---|---|---|---|---|

**Blank Samples:**

| # | Skip | Sample Type | Sample Name | Comment | Vial# | Level | Total Dil. |
|---|---|---|---|---|---|---|---|

## Periodic Block

| # | Block Name | Period | Unit | Reset By |
|---|---|---|---|---|

## Sublist

# DHL Analytical, Inc.

# PREP BATCH REPORT



Prep Start Date: **9/14/2017 8:20:55 AM**
Digestion:
Prep End Date:

Prep Batch **82354** Prep Code: **3005A** Technician: **Sydney Powers**

Prep Factor Units: **mL/mL**

**Equipment List**

- Hot Block #3
- Thermometer #60
- Pipette #P-40-Spikes
- Pipette #P-41 Samples

| Sample ID | Matrix | pH | SampAmt | Fin Vol | Factor | Bottle # | Vessel | Cleanup |
|---|---|---|---|---|---|---|---|---|
| 1709083-01A | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709084-01A | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709085-01A | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709087-01A MS/MSD | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709087-02A | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709087-03A | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709089-01B | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709089-02B | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709089-03B | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709099-01B | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| 1709100-01B | Aqueous | | 50 | 50 | 1.000 | 1 of 1 | | |
| LCS-82354 | Aqueous | | 50 | 50 | 1.000 | of | | |
| LCSD-82354 | Aqueous | | 50 | 50 | 1.000 | of | | |
| MB-82354 | Aqueous | | 50 | 50 | 1.000 | of | | |
| 1709108-023 | | | 50 | 50 | | | | |

Sample added to batch 11:30 - 16:30

| Number | Reagent Name | Amt | Units | Exp. Da |
|---|---|---|---|---|
| 11490 | Hydrochloric Acid (trace metal grade) | 1 | ml | 12/15/2019 |
| 11594 | Digestion Vessels | 1 | ml | 01/10/2018 |
| 11661 | Nitric Acid (Trace Metal Grade) | 1 | ml | 04/05/2019 |

8:45 - 13:45

| Spk ID | Spike Name | SampType | Amt (mL or g) | Exp. Date |
|---|---|---|---|---|
| MET-161107-1 | AL PRIMARY STD 1000 PPM | LCS/MS/MSD | 0.25 | 04/27/2018 |
| MET-161107-4 | FE PRIMARY STD 1000 PPM | LCS/MS/MSD | 0.25 | 04/27/2018 |
| MET-SPIKE-170803-3 | 2500 PPM Naturals Spike | LCS/MS/MSD | 0.1 | 02/04/2018 |
| MET-SPIKE-170815-1 | Sb+Ag 50 PPM | LCS/MS/MSD | 0.2 | 02/16/2018 |
| MET-SPIKE-170815-2 | 50 PPM Custom+Sr,Sn,Ti,U,B,Li,Mo | LCS/MS/MSD | 0.2 | 02/16/2018 |

**REVIEWED BY**
By Janice Whitt at 4:01:42 PM, 9/15/2017

9/14/17

# DHL Analytical, Inc.

# PREP BATCH REPORT



Prep Start Date: **9/14/2017 8:20:55 AM**
Digestion: **Start: 9/14/2017 8:45:00 AM / Stop: 9/14/2017 4:30:00 PM**
Prep End Date: **9/14/2017 4:40:01 PM**

Prep Batch **82354** Prep Code: **3005A** Technician: **Sydney Powers**

Prep Factor Units: **mL/mL**

**Equipment List**

Hot Block #3
Thermometer #60
Pipette #P-40-Spikes
Pipette #P-41 Samples

| Sample ID | Matrix | pH | SampAmt | Fin Vol | Factor | Bottle # | | | Vessel | Cleanup |
|---|---|---|---|---|---|---|---|---|---|---|
| 1709083-01A | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709084-01A | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709085-01A | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709087-01A | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709087-01A MS | Aqueous | | 50 | 50 | 1.000 | | of | | | |
| 1709087-01A MSD | Aqueous | | 50 | 50 | 1.000 | | of | | | |
| 1709087-01A PDS | Aqueous | | 50 | 50 | 1.000 | | of | | | |
| 1709087-01A SD | Aqueous | | 50 | 50 | 1.000 | | of | | | |
| 1709087-02A | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709087-03A | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709089-01B | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709089-02B | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709089-03B | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709099-01B | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709100-01B | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| 1709108-02B | Aqueous | | 50 | 50 | 1.000 | 1 | of | 1 | | |
| LCS-82354 | Aqueous | | 50 | 50 | 1.000 | | of | | | |
| LCSD-82354 | Aqueous | | 50 | 50 | 1.000 | | of | | | |
| MB-82354 | Aqueous | | 50 | 50 | 1.000 | | of | | | |

| Number | Reagent Name | Amt | Units | Exp. Da |
|---|---|---|---|---|
| 11490 | Hydrochloric Acid (trace metal grade) | 1 | ml | 12/15/2019 |
| 11594 | Digestion Vessels | 1 | ml | 01/10/2018 |
| 11661 | Nitric Acid (Trace Metal Grade) | 1 | ml | 04/05/2019 |

| Spk ID | Spike Name | SampType | Amt (mL or g) | Exp. Date |
|---|---|---|---|---|
| MET-161107-1 | AL PRIMARY STD 1000 PPM | LCS/MS/MSD | 0.25 | 04/27/2018 |
| MET-161107-4 | FE PRIMARY STD 1000 PPM | LCS/MS/MSD | 0.25 | 04/27/2018 |
| MET-SPIKE-170803-3 | 2500 PPM Naturals Spike | LCS/MS/MSD | 0.1 | 02/04/2018 |
| MET-SPIKE-170815-1 | Sb+Ag 50 PPM | LCS/MS/MSD | 0.2 | 02/16/2018 |
| MET-SPIKE-170815-2 | 50 PPM Custom+Sr,Sn,Ti,U,B,Li,Mo | LCS/MS/MSD | 0.2 | 02/16/2018 |

**REVIEWED BY**
*By Janice Whitt at 4:01:45 PM, 9/15/2017*

# Calibration Summary Report

**Date Acquired** 9/15/2017 10:13
**Data Batch** 170915.b

| Level | Calibration File Name |
|---|---|
| 1 | 009CALB.d |
| 2 | 010CALS.d |
| 3 | 011CALS.d |
| 4 | 012CALS.d |
| 5 | 013CALS.d |
| 6 | 014CALS.d |
| 7 | 015CALS.d |
| 8 | 016CALS.d |

**Calibration Table**

| Ele | Corr Coef | Curve Equation |
|---|---|---|
| As | 1.0000 | y = 0.0010 * x + 7.3156E-005 |
| Be | 1.0000 | y = 5.6311E-005 * x + 3.2017E-006 |
| B | 1.0000 | y = 2.7014E-005 * x + 1.4393E-004 |
| Na | 1.0000 | y = 8.8950E-004 * x + 0.0117 |
| Mg | 1.0000 | y = 4.5827E-004 * x + 6.8230E-004 |
| Al | 1.0000 | y = 1.6600E-004 * x + 0.0030 |
| K | 1.0000 | y = 3.7298E-004 * x + 0.0219 |
| Ca | 0.9999 | y = 2.2621E-005 * x + 2.1985E-004 |
| Ti | 1.0000 | y = 1.5173E-004 * x + 5.3271E-006 |
| V | 1.0000 | y = 0.0053 * x + 0.0015 |
| Cr | 1.0000 | y = 0.0065 * x + 7.2060E-004 |
| Mn | 1.0000 | y = 0.0036 * x + 2.4518E-004 |
| Fe | 1.0000 | y = 0.0051 * x + 0.0122 |
| Co | 1.0000 | y = 0.0157 * x + 3.1758E-004 |
| Ni | 1.0000 | y = 0.0043 * x + 0.0092 |
| Cu | 1.0000 | y = 0.0114 * x + 0.0011 |
| Zn | 1.0000 | y = 0.0016 * x + 3.8393E-004 |
| Se | 1.0000 | y = 7.8292E-005 * x + 2.3638E-005 |
| Sr | 0.9999 | y = 6.4939E-004 * x + 4.4438E-005 |
| Mo | 0.9999 | y = 6.6341E-004 * x + 1.1809E-005 |
| Ag | 1.0000 | y = 0.0021 * x + 6.0912E-006 |
| Cd | 1.0000 | y = 2.9286E-004 * x + 1.1432E-006 |
| Sn | 1.0000 | y = 6.1354E-004 * x + 4.9535E-005 |
| Sb | 1.0000 | y = 7.5183E-004 * x + 1.7406E-005 |
| Tl | 1.0000 | y = 0.0018 * x + 1.4377E-005 |
| Ba | 1.0000 | y = 2.7386E-004 * x + 7.7499E-006 |
| Pb | 1.0000 | y = 0.0024 * x + 6.4623E-005 |

REVIEWED BY
By Janice Whitt at 4:01:48 PM, 9/15/2017

# Calibration Summary Report

**Level 7 Cal**

| Ele | Conc | Calc | %Rec |
|---|---|---|---|
| As | 500 | 494.78 | 99 |
| Be | 500 | 505.93 | 101 |
| B | 500 | 503.17 | 101 |
| Na | 10000 | 10036.69 | 100 |
| Mg | 10000 | 10012.74 | 100 |
| Al | 10000 | 9968.45 | 100 |
| K | 10000 | 9907.37 | 99 |
| Ca | 10000 | 9782.04 | 98 |
| Ti | 500 | 491.45 | 98 |
| V | 500 | 489.06 | 98 |
| Cr | 500 | 495.28 | 99 |
| Mn | 500 | 493.63 | 99 |
| Fe | 10000 | 9982.26 | 100 |
| Co | 500 | 506.19 | 101 |
| Ni | 500 | 499.77 | 100 |
| Cu | 500 | 502.58 | 101 |
| Zn | 500 | 507.70 | 102 |
| Se | 500 | 497.43 | 99 |
| Sr | 500 | 477.89 | 96 |
| Mo | 500 | 481.75 | 96 |
| Ag | 500 | 499.29 | 100 |
| Cd | 500 | 502.13 | 100 |
| Sn | 500 | 485.73 | 97 |
| Sb | 500 | 500.64 | 100 |
| Tl | 500 | 501.65 | 100 |
| Ba | 500 | 496.16 | 99 |
| Pb | 500 | 498.72 | 100 |

**Level 8 Cal**

| Ele | Conc | Calc | %Rec |
|---|---|---|---|
| As | 2000 | 2001.25 | 100 |
| Be | 2000 | 1997.97 | 100 |
| B | 2000 | 1999.11 | 100 |
| Na | 25000 | 24974.86 | 100 |
| Mg | 25000 | 24984.29 | 100 |
| K | 25000 | 25036.65 | 100 |
| Ca | 25000 | 25115.64 | 100 |
| Ti | 2000 | 2002.20 | 100 |
| V | 2000 | 2003.48 | 100 |
| Cr | 2000 | 2001.33 | 100 |
| Mn | 2000 | 2001.89 | 100 |
| Co | 2000 | 1997.69 | 100 |
| Ni | 2000 | 1999.24 | 100 |
| Cu | 2000 | 1998.16 | 100 |
| Zn | 2000 | 1996.61 | 100 |
| Se | 2000 | 1999.72 | 100 |
| Sr | 2000 | 2007.46 | 100 |
| Mo | 2000 | 2006.30 | 100 |
| Cd | 2000 | 1999.36 | 100 |
| Sn | 2000 | 2004.80 | 100 |
| Tl | 2000 | 1999.89 | 100 |
| Ba | 2000 | 2001.66 | 100 |
| Pb | 2000 | 2000.81 | 100 |

REVIEWED BY
By Janice Whitt at 4:01:53 PM, 9/15/2017

# Current Signal

[Helium]

| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 63 | 500 | 231 | 274.2 | 6.74 |
| 59 | 20000 | 15716 | 16054.3 | 1.85 |
| 89 | 20000 | 14380 | 14131.9 | 1.71 |
| 140 | 50000 | 40946 | 42132.3 | 1.44 |
| 205 | 50000 | 45304 | 44230.7 | 1.57 |
| 156/140 | 1 | 0.432 % | 0.410 % | 7.21 |
| 51 | 100 | 82 | 76.4 | 12.65 |
| 56 | 5000 | 2214 | 2292.1 | 2.90 |
| 75 | 20 | 3 | 1.8 | 103.19 |
| 78 | 20 | 3 | 2.9 | 66.36 |
| **Integration Time [sec]** | | 0.10 | | |

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1550 | W | Nebulizer Pump | 0.10 | rps |
| RF Matching | 1.90 | V | S/C Temp | 2 | ℃ |
| Smpl Depth | 8.0 | mm | Gas Switch | Dilution Gas | |
| Carrier Gas | 0.70 | L/min | Makeup/Dilution Gas | 0.40 | L/min |
| Option Gas | 0.0 | % | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Cell Entrance | -40 | V |
| Extract 2 | -180.0 | V | Cell Exit | -58 | V |
| Omega Bias | -80 | V | Deflect | 0.8 | V |
| Omega Lens | 8.1 | V | Plate Bias | -60 | V |

**## Cell Parameters ##**

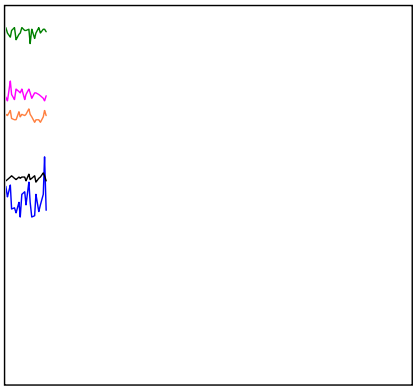
| | | | | | |
|---|---|---|---|---|---|
| Use Gas | Yes | | OctP RF | 200 | V |
| He Flow | 5.0 | mL/min | Energy Discrimination | 3.0 | V |
| OctP Bias | -19.0 | V | | | |

**Meters**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| IF/BK Press | 2.16E+2 | Pa | Carrier Gas(BP) | 3.06E+2 | kPa | Forward Power | 1549 | W |
| Analyzer Press | 1.57E-4 | Pa | Reflected Power | 6 | W | | | |

# Current Signal

[No Gas]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 63 | 500 | 229 | 243.4 | 7.83 |
| 59 | 20000 | 18686 | 18634.2 | 1.22 |
| 89 | 50000 | 35582 | 35446.6 | 1.42 |
| 140 | 50000 | 38148 | 38334.8 | 1.69 |
| 205 | 50000 | 26942 | 27267.5 | 1.19 |
| 156/140 | 2 | 1.694 % | 1.684 % | 7.11 |
| 51 | 20000 | 15615 | 15787.7 | 1.74 |
| 56 | 200000 | 187317 | 184571.7 | 1.09 |
| 75 | 2000 | 1344 | 1310.3 | 2.91 |
| 78 | 1000 | 766 | 747.7 | 5.12 |
| **Integration Time [sec]** | | 0.10 | | |

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1550 | W | Nebulizer Pump | 0.10 | rps |
| RF Matching | 1.90 | V | S/C Temp | 2 | ℃ |
| Smpl Depth | 8.0 | mm | Gas Switch | Dilution Gas | |
| Carrier Gas | 0.70 | L/min | Makeup/Dilution Gas | 0.40 | L/min |
| Option Gas | 0.0 | % | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Cell Entrance | -40 | V |
| Extract 2 | -180.0 | V | Cell Exit | -58 | V |
| Omega Bias | -80 | V | Deflect | 1.4 | V |
| Omega Lens | 8.1 | V | Plate Bias | -60 | V |

**## Cell Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Use Gas | No | | OctP RF | 200 | V |
| He Flow | 5.0 | mL/min | Energy Discrimination | 3.0 | V |
| OctP Bias | -19.0 | V | | | |

**Meters**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| IF/BK Press | 2.14E+2 | Pa | Carrier Gas(BP) | 3.07E+2 | kPa | Forward Power | 1550 | W |
| Analyzer Press | 9.16E-5 | Pa | Reflected Power | 6 | W | | | |

# US EPA Tune Check Sample Report

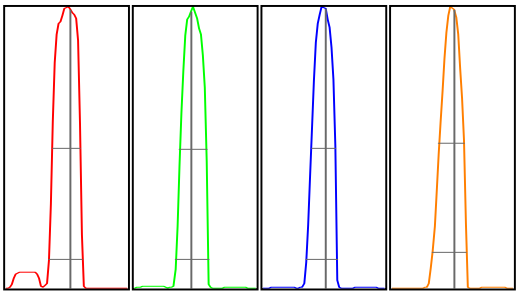
**Batch Folder** C:\Agilent\ICPMH\1\DATA\DHL Li+U TEMPLATE.b
**Report Comment**
**Instrument Name** ICPMS4 JP12361998

**[No Gas]**

| Mass | Count (Mean) | RSD% (Actual) | RSD% (Required) | RSD% (Flag) |
|---|---|---|---|---|
| 7 | 61408 | 1.08 | 5.00 | |
| 59 | 99129 | 1.45 | 5.00 | |
| 115 | 171779 | 0.69 | 5.00 | |
| 205 | 152674 | 1.73 | 5.00 | |

| Mass | Replicate 1 Count | Replicate 2 Count | Replicate 3 Count | Replicate 4 Count | Replicate 5 Count |
|---|---|---|---|---|---|
| 7 | 60430 | 61091 | 61712 | 61654 | 62154 |
| 59 | 97394 | 98287 | 99038 | 99784 | 101144 |
| 115 | 170564 | 170724 | 171651 | 173266 | 172688 |
| 205 | 157175 | 152529 | 151506 | 151840 | 150320 |

**Integration Time [sec] =** 0.1



| Mass | Peak Height | Axis (Actual) | Axis (Required) | Axis (Flag) | Width-X% (Actual) | Width-X% (Required) | Width-X% (Flag) |
|---|---|---|---|---|---|---|---|
| 7 | 92502 | 7.10 | 6.9 - 7.1 | | 0.823 | 0.850 | |
| 59 | 164712 | 58.95 | 58.9 - 59.1 | | 0.779 | 0.850 | |
| 115 | 310214 | 115.05 | 114.9 - 115.1 | | 0.739 | 0.850 | |
| 205 | 268334 | 205.05 | 204.9 - 205.1 | | 0.826 | 0.850 | |

**X% =** 10 **Int Time [sec] =** 0.1 **Acq Time [sec] =** 135.05 **Y Axis =** Linear

**Tune Parameters**

**## Plasma Paramters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|
| RF Power | 1550 | W | Nebulizer Pump | 0.10 | rps |
| RF Matching | 1.90 | V | S/C Temp | 2 | ℃ |
| Smpl Depth | 8.0 | mm | Gas Switch | Dilution Gas | |
| Carrier Gas | 0.70 | L/min | Makeup/Dilution Gas | 0.40 | L/min |
| Option Gas | 0.0 | % | | | |

**## Lenses Parameters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Cell Entrance | -40 | V |
| Extract 2 | -180.0 | V | Cell Exit | -58 | V |
| Omega Bias | -80 | V | Deflect | 1.4 | V |
| Omega Lens | 8.1 | V | Plate Bias | -60 | V |

REVIEWED BY
By Janice Whitt at 4:01:59 PM, 9/15/2017

**## Cell Parameters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|
| Use Gas | No | | OctP RF | 200 | V |
| He Flow | 0.0 | mL/min | Energy Discrimination | 3.0 | V |
| OctP Bias | -19.0 | V | | | |

# P/A Factor Tuning Report

## Current Sample

Sample Name: CCB5-170915
Data File: 125_CCB.d
Acquired: 9/15/2017 2:28:33 PM

## Detector Parameters and P/A Factors

Discriminator: 4.5 mV
AnalogHV: 1749 V
PulseHV: 1599 V

Acquired: 9/15/2017 9:45:42 AM

| Mass[u] | Element | P/A Factor |
|---|---|---|
| 9 | Be | 0.113003 |
| 23 | Na | 0.122552 |
| 24 | Mg | 0.126948 |
| 27 | Al | 0.129958 |
| 39 | K | 0.129614 |
| 45 | Sc | 0.131300 |
| 47 | Ti | 0.131591 |
| 51 | V | 0.133373 |
| 52 | Cr | 0.136613 |
| 55 | Mn | 0.137790 |
| 56 | Fe | 0.127408 |
| 59 | Co | 0.140729 |
| 60 | Ni | 0.143352 |
| 63 | Cu | 0.143655 |
| 66 | Zn | 0.144294 |
| 72 | Ge | 0.143603 |
| 75 | As | 0.142607 |
| 88 | Sr | 0.143128 |
| 95 | Mo | 0.142943 |
| 111 | Cd | 0.148672 |
| 115 | In | 0.147425 |
| 118 | Sn | 0.147647 |
| 121 | Sb | 0.147920 |
| 137 | Ba | 0.147565 |
| 205 | Tl | 0.153376 |
| 206 | [Pb] | 0.154559 |
| 207 | [Pb] | 0.154913 |
| 208 | Pb | 0.153893 |
| 209 | Bi | 0.155715 |
| 238 | U | 0.153388 |
| 7 | Li | Signal too low |
| 11 | B | Signal too low |
| 44 | Ca | Signal too low |
| 78 | Se | Signal too low |
| 107 | Ag | Signal too low |

Created: 9/15/2017 2:30:06 PM

REVIEWED BY
By Janice Whitt at 4:02:04 PM, 9/15/2017

# Calibration Blank Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:13 | Sample Name | BLANK STD 1 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 009CALB.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 4 | 66.14 |
| 11 | B | 45 | 180 | 16.04 |
| 23 | Na | 45 | 14654 | 2.14 |
| 24 | Mg | 45 | 853 | 0.78 |
| 27 | Al | 45 | 3716 | 4.31 |
| 39 | K | 45 | 27409 | 0.93 |
| 44 | Ca | 45 | 275 | 4.31 |
| 47 | Ti | 45 | 7 | 50.03 |
| 51 | V | 45 | 1868 | 5.16 |
| 52 | Cr | 45 | 901 | 7.35 |
| 55 | Mn | 45 | 307 | 9.96 |
| 56 | Fe | 45 | 15248 | 8.19 |
| 59 | Co | 72 | 277 | 6.26 |
| 60 | Ni | 72 | 7984 | 4.29 |
| 63 | Cu | 72 | 1000 | 3.33 |
| 66 | Zn | 72 | 334 | 14.52 |
| 75 | As | 72 | 64 | 36.17 |
| 78 | Se | 72 | 21 | 16.49 |
| 88 | Sr | 115 | 389 | 8.59 |
| 95 | Mo | 115 | 103 | 3.23 |
| 107 | Ag | 115 | 53 | 21.65 |
| 111 | Cd | 115 | 10 | 57.75 |
| 118 | Sn | 115 | 433 | 8.03 |
| 121 | Sb | 115 | 152 | 11.02 |
| 137 | Ba | 115 | 68 | 15.02 |
| 205 | Tl | 209 | 351 | 10.24 |
| 208 | Pb | 209 | 1578 | 3.58 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD |
|---|---|---|---|
| 45 | Sc | 1250708 | 0.29 |
| 72 | Ge | 871265 | 0.22 |
| 115 | In | 8749493 | 0.75 |
| 209 | Bi | 24417425 | 0.76 |

# Calibration Standard Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:15 | Sample Name | L2-170915 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 010CALS.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 73 | 22.37 |
| 11 | B | 45 | 186 | 8.49 |
| 23 | Na | 45 | 35864 | 0.58 |
| 24 | Mg | 45 | 11593 | 2.99 |
| 27 | Al | 45 | 7190 | 1.98 |
| 39 | K | 45 | 36290 | 0.08 |
| 44 | Ca | 45 | 884 | 5.49 |
| 47 | Ti | 45 | 199 | 17.92 |
| 51 | V | 45 | 7978 | 2.62 |
| 52 | Cr | 45 | 8607 | 2.81 |
| 55 | Mn | 45 | 4218 | 1.12 |
| 56 | Fe | 45 | 144403 | 0.98 |
| 59 | Co | 72 | 13213 | 1.39 |
| 60 | Ni | 72 | 8887 | 4.46 |
| 63 | Cu | 72 | 10558 | 1.66 |
| 66 | Zn | 72 | 1781 | 2.68 |
| 75 | As | 72 | 901 | 3.99 |
| 78 | Se | 72 | 83 | 19.75 |
| 88 | Sr | 115 | 5270 | 0.16 |
| 95 | Mo | 115 | 5268 | 1.56 |
| 107 | Ag | 115 | 16455 | 0.22 |
| 111 | Cd | 115 | 2502 | 3.32 |
| 118 | Sn | 115 | 5282 | 2.08 |
| 121 | Sb | 115 | 6297 | 3.32 |
| 137 | Ba | 115 | 2338 | 3.19 |
| 205 | Tl | 209 | 39434 | 0.26 |
| 208 | Pb | 209 | 54048 | 0.82 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1248235 | 0.18 | 1250708 | 99.80 | 70 | 120 | |
| 72 | Ge | 864404 | 0.44 | 871265 | 99.21 | 70 | 120 | |
| 115 | In | 8713584 | 0.55 | 8749493 | 99.59 | 70 | 120 | |
| 209 | Bi | 24339058 | 0.32 | 24417425 | 99.68 | 70 | 120 | |

# Calibration Standard Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:17 | Sample Name | L-170915 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 011CALS.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 650 | 4.44 |
| 11 | B | 45 | 476 | 20.03 |
| 23 | Na | 45 | 226118 | 0.49 |
| 24 | Mg | 45 | 109996 | 0.32 |
| 27 | Al | 45 | 42337 | 0.72 |
| 39 | K | 45 | 114328 | 0.59 |
| 44 | Ca | 45 | 5395 | 1.98 |
| 47 | Ti | 45 | 1833 | 7.41 |
| 51 | V | 45 | 62521 | 0.91 |
| 52 | Cr | 45 | 77210 | 0.94 |
| 55 | Mn | 45 | 41887 | 0.14 |
| 56 | Fe | 45 | 1328508 | 0.09 |
| 59 | Co | 72 | 131584 | 0.07 |
| 60 | Ni | 72 | 40690 | 0.75 |
| 63 | Cu | 72 | 98119 | 0.31 |
| 66 | Zn | 72 | 14224 | 1.79 |
| 75 | As | 72 | 8516 | 0.55 |
| 78 | Se | 72 | 655 | 3.38 |
| 88 | Sr | 115 | 50639 | 0.86 |
| 95 | Mo | 115 | 50614 | 2.00 |
| 107 | Ag | 115 | 169828 | 0.71 |
| 111 | Cd | 115 | 24136 | 1.95 |
| 118 | Sn | 115 | 48390 | 0.81 |
| 121 | Sb | 115 | 60762 | 0.73 |
| 137 | Ba | 115 | 22381 | 1.23 |
| 205 | Tl | 209 | 393373 | 0.23 |
| 208 | Pb | 209 | 524931 | 0.61 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1237485 | 0.27 | 1250708 | 98.94 | 70 | 120 | |
| 72 | Ge | 860474 | 0.57 | 871265 | 98.76 | 70 | 120 | |
| 115 | In | 8627296 | 0.47 | 8749493 | 98.60 | 70 | 120 | |
| 209 | Bi | 24187184 | 0.80 | 24417425 | 99.06 | 70 | 120 | |

# Calibration Standard Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:19 | Sample Name | 10X-170915 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 012CALS.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 3491 | 2.55 |
| 11 | B | 45 | 1841 | 5.77 |
| 23 | Na | 45 | 1118337 | 0.84 |
| 24 | Mg | 45 | 572829 | 0.41 |
| 27 | Al | 45 | 208673 | 0.50 |
| 39 | K | 45 | 485581 | 0.34 |
| 44 | Ca | 45 | 27584 | 2.72 |
| 47 | Ti | 45 | 9304 | 1.21 |
| 51 | V | 45 | 317374 | 0.39 |
| 52 | Cr | 45 | 400305 | 0.47 |
| 55 | Mn | 45 | 219702 | 0.47 |
| 56 | Fe | 45 | 6409706 | 0.69 |
| 59 | Co | 72 | 685961 | 0.62 |
| 60 | Ni | 72 | 191708 | 0.39 |
| 63 | Cu | 72 | 508461 | 0.22 |
| 66 | Zn | 72 | 72207 | 0.81 |
| 75 | As | 72 | 44447 | 0.26 |
| 78 | Se | 72 | 3421 | 1.86 |
| 88 | Sr | 115 | 263580 | 0.62 |
| 95 | Mo | 115 | 265182 | 0.51 |
| 107 | Ag | 115 | 880356 | 0.68 |
| 111 | Cd | 115 | 126267 | 0.34 |
| 118 | Sn | 115 | 252981 | 0.88 |
| 121 | Sb | 115 | 319158 | 0.46 |
| 137 | Ba | 115 | 114658 | 0.10 |
| 205 | Tl | 209 | 2084678 | 0.56 |
| 208 | Pb | 209 | 2756131 | 0.19 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1223741 | 0.68 | 1250708 | 97.84 | 70 | 120 | |
| 72 | Ge | 849091 | 0.50 | 871265 | 97.46 | 70 | 120 | |
| 115 | In | 8506204 | 1.22 | 8749493 | 97.22 | 70 | 120 | |
| 209 | Bi | 23946791 | 1.12 | 24417425 | 98.07 | 70 | 120 | |

# Calibration Standard Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:21 | Sample Name | 5X-170915 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 013CALS.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 6918 | 0.75 |
| 11 | B | 45 | 3554 | 5.29 |
| 23 | Na | 45 | 2191793 | 0.11 |
| 24 | Mg | 45 | 1121032 | 0.33 |
| 27 | Al | 45 | 407182 | 0.21 |
| 39 | K | 45 | 923703 | 0.47 |
| 44 | Ca | 45 | 53060 | 2.78 |
| 47 | Ti | 45 | 18012 | 0.09 |
| 51 | V | 45 | 627690 | 0.69 |
| 52 | Cr | 45 | 786770 | 0.25 |
| 55 | Mn | 45 | 429678 | 0.61 |
| 56 | Fe | 45 | 12507167 | 0.95 |
| 59 | Co | 72 | 1344490 | 0.28 |
| 60 | Ni | 72 | 371789 | 0.72 |
| 63 | Cu | 72 | 992761 | 0.33 |
| 66 | Zn | 72 | 142038 | 0.48 |
| 75 | As | 72 | 87259 | 0.29 |
| 78 | Se | 72 | 6684 | 1.88 |
| 88 | Sr | 115 | 515705 | 0.31 |
| 95 | Mo | 115 | 526333 | 0.29 |
| 107 | Ag | 115 | 1737639 | 0.30 |
| 111 | Cd | 115 | 247000 | 0.39 |
| 118 | Sn | 115 | 499348 | 0.10 |
| 121 | Sb | 115 | 625371 | 0.50 |
| 137 | Ba | 115 | 225420 | 1.07 |
| 205 | Tl | 209 | 4085072 | 0.57 |
| 208 | Pb | 209 | 5448691 | 0.42 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1197123 | 0.47 | 1250708 | 95.72 | 70 | 120 | |
| 72 | Ge | 832821 | 0.38 | 871265 | 95.59 | 70 | 120 | |
| 115 | In | 8416150 | 0.74 | 8749493 | 96.19 | 70 | 120 | |
| 209 | Bi | 23429880 | 0.44 | 24417425 | 95.96 | 70 | 120 | |

# Calibration Standard Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:23 | Sample Name | 2X-170915 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 014CALS.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 16952 | 0.53 |
| 11 | B | 45 | 8163 | 2.11 |
| 23 | Na | 45 | 5333260 | 0.55 |
| 24 | Mg | 45 | 2741822 | 0.30 |
| 27 | Al | 45 | 999732 | 0.25 |
| 39 | K | 45 | 2241310 | 0.48 |
| 44 | Ca | 45 | 131491 | 1.71 |
| 47 | Ti | 45 | 45057 | 1.70 |
| 51 | V | 45 | 1533676 | 0.62 |
| 52 | Cr | 45 | 1919519 | 0.74 |
| 55 | Mn | 45 | 1052050 | 0.69 |
| 56 | Fe | 45 | 30407258 | 0.48 |
| 59 | Co | 72 | 3266991 | 0.49 |
| 60 | Ni | 72 | 896477 | 0.62 |
| 63 | Cu | 72 | 2394772 | 0.60 |
| 66 | Zn | 72 | 344438 | 0.35 |
| 75 | As | 72 | 213423 | 0.42 |
| 78 | Se | 72 | 16444 | 0.47 |
| 88 | Sr | 115 | 1270621 | 0.46 |
| 95 | Mo | 115 | 1307427 | 0.61 |
| 107 | Ag | 115 | 4248217 | 0.45 |
| 111 | Cd | 115 | 605069 | 0.59 |
| 118 | Sn | 115 | 1223347 | 0.65 |
| 121 | Sb | 115 | 1544737 | 0.69 |
| 137 | Ba | 115 | 554290 | 0.23 |
| 205 | Tl | 209 | 10371279 | 1.18 |
| 208 | Pb | 209 | 13491778 | 0.68 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1188502 | 0.13 | 1250708 | 95.03 | 70 | 120 | |
| 72 | Ge | 818511 | 0.11 | 871265 | 93.95 | 70 | 120 | |
| 115 | In | 8243314 | 0.85 | 8749493 | 94.21 | 70 | 120 | |
| 209 | Bi | 23189830 | 0.80 | 24417425 | 94.97 | 70 | 120 | |

# Calibration Standard Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:24 | Sample Name | H-170915 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 015CALS.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 33854 | 0.57 |
| 11 | B | 45 | 16321 | 1.10 |
| 23 | Na | 45 | 10621261 | 0.42 |
| 24 | Mg | 45 | 5452558 | 0.84 |
| 27 | Al | 45 | 1969665 | 0.29 |
| 39 | K | 45 | 4416485 | 0.41 |
| 44 | Ca | 45 | 263175 | 0.99 |
| 47 | Ti | 45 | 88605 | 1.21 |
| 51 | V | 45 | 3063489 | 0.33 |
| 52 | Cr | 45 | 3825343 | 0.11 |
| 55 | Mn | 45 | 2097540 | 0.09 |
| 56 | Fe | 45 | 60526866 | 0.55 |
| 59 | Co | 72 | 6536201 | 0.49 |
| 60 | Ni | 72 | 1759077 | 0.27 |
| 63 | Cu | 72 | 4709490 | 0.43 |
| 66 | Zn | 72 | 678440 | 0.21 |
| 75 | As | 72 | 424687 | 0.36 |
| 78 | Se | 72 | 32103 | 0.55 |
| 88 | Sr | 115 | 2535161 | 0.28 |
| 95 | Mo | 115 | 2610558 | 0.21 |
| 107 | Ag | 115 | 8369936 | 0.89 |
| 111 | Cd | 115 | 1201105 | 0.38 |
| 118 | Sn | 115 | 2434534 | 0.20 |
| 121 | Sb | 115 | 3074519 | 0.68 |
| 137 | Ba | 115 | 1109885 | 0.42 |
| 205 | Tl | 209 | 20580440 | 0.20 |
| 208 | Pb | 209 | 26849457 | 0.59 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1188147 | 0.32 | 1250708 | 95.00 | 70 | 120 | |
| 72 | Ge | 823834 | 0.54 | 871265 | 94.56 | 70 | 120 | |
| 115 | In | 8167907 | 0.35 | 8749493 | 93.35 | 70 | 120 | |
| 209 | Bi | 22846020 | 0.64 | 24417425 | 93.56 | 70 | 120 | |

# Calibration Standard Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:26 | Sample Name | H2-170915 |
| Data Batch | 170915.b | Comment | CAL 6020A_W |
| Data File Name | 016CALS.d | Dilution | 1 |

| Mass | Name | IS | CPS | %RSD |
|---|---|---|---|---|
| 9 | Be | 45 | 131794 | 0.31 |
| 11 | B | 45 | 63428 | 1.40 |
| 23 | Na | 45 | 26036036 | 0.85 |
| 24 | Mg | 45 | 13412482 | 0.40 |
| 27 | Al | 45 | 5202 | 9.51 |
| 39 | K | 45 | 10964266 | 0.58 |
| 44 | Ca | 45 | 665769 | 0.96 |
| 47 | Ti | 45 | 355863 | 0.48 |
| 51 | V | 45 | 12367398 | 0.44 |
| 52 | Cr | 45 | 15237028 | 0.24 |
| 55 | Mn | 45 | 8385521 | 0.25 |
| 56 | Fe | 45 | 75523 | 21.20 |
| 59 | Co | 72 | 25423776 | 1.07 |
| 60 | Ni | 72 | 6913209 | 1.04 |
| 63 | Cu | 72 | 18451454 | 1.46 |
| 66 | Zn | 72 | 2628807 | 0.23 |
| 75 | As | 72 | 1692852 | 0.22 |
| 78 | Se | 72 | 127141 | 0.27 |
| 88 | Sr | 115 | 10444814 | 0.77 |
| 95 | Mo | 115 | 10663561 | 1.04 |
| 107 | Ag | 115 | 5937 | 26.92 |
| 111 | Cd | 115 | 4690982 | 0.30 |
| 118 | Sn | 115 | 9855174 | 0.62 |
| 121 | Sb | 115 | 4676 | 9.49 |
| 137 | Ba | 115 | 4391835 | 0.15 |
| 205 | Tl | 209 | 80414012 | 0.82 |
| 208 | Pb | 209 | 105568657 | 0.46 |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1171386 | 0.23 | 1250708 | 93.66 | 70 | 120 | |
| 72 | Ge | 811979 | 0.52 | 871265 | 93.20 | 70 | 120 | |
| 115 | In | 8012001 | 0.93 | 8749493 | 91.57 | 70 | 120 | |
| 209 | Bi | 22391125 | 0.08 | 24417425 | 91.70 | 70 | 120 | |

# Interference Check Solution A (ICS-A) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:32 | Sample Name | ICSA-170915 |
| Data Batch | 170915.b | Comment | ICSA6020A_W |
| Data File Name | 019ICSA.d | Dilution | 1 |

| Mass | Name | Conc | CPS | %RSD | MDL S | MDL Aq | QC Flag |
|---|---|---|---|---|---|---|---|
| 9 | Be | 0.103 | 11 | 51.6 | 1.2 | 0.8 | |
| 11 | B | 5.452 | 344 | 20.4 | 30 | 30 | |
| 51 | V | 0.057 | 2123 | 3.0 | 10 | 10 | |
| 52 | Cr | 0.346 | 3510 | 4.9 | 8 | 5 | |
| 55 | Mn | 1.709 | 7517 | 1.4 | 8 | 10 | |
| 59 | Co | 0.463 | 6027 | 3.8 | 8 | 10 | |
| 60 | Ni | 0.725 | 9737 | 3.7 | 8 | 10 | |
| 63 | Cu | 0.549 | 5872 | 3.0 | 8 | 10 | |
| 66 | Zn | 2.505 | 3534 | 9.7 | 10 | 5 | |
| 75 | As | 0.212 | 233 | 11.0 | 4 | 5 | |
| 78 | Se | 0.465 | 48 | 20.6 | 2 | 5 | |
| 88 | Sr | 3.489 | 18109 | 0.6 | 10 | 10 | |
| 107 | Ag | 0.212 | 3460 | 8.8 | 0.8 | 2 | |
| 111 | Cd | 0.676 | 1561 | 4.2 | 1.2 | 1 | |
| 118 | Sn | 0.330 | 1975 | 4.9 | 10 | 10 | |
| 121 | Sb | 0.632 | 3861 | 3.6 | 4 | 2.5 | |
| 137 | Ba | 0.344 | 799 | 14.4 | 8 | 10 | |
| 205 | Tl | 0.244 | 9330 | 5.8 | 4 | 1.5 | |
| 208 | Pb | 0.353 | 18486 | 4.1 | 1.2 | 1 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1182895 | 0.34 | 1250708 | 94.58 | 70 | 120 | |
| 72 | Ge | 794987 | 0.20 | 871265 | 91.25 | 70 | 120 | |
| 115 | In | 7837889 | 0.38 | 8749493 | 89.58 | 70 | 120 | |
| 209 | Bi | 20597515 | 1.03 | 24417425 | 84.36 | 70 | 120 | |

# Interference Check Solution AB (ICS-AB) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:34 | Sample Name | ICSAB-170915 |
| Data Batch | 170915.b | Comment | ICSB6020A_W |
| Data File Name | 020ICSB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 51 | V | 45 | 39.487 | 249612 | 1.00 | 40 | 98.7 | 80 | 120 | |
| 52 | Cr | 45 | 20.651 | 160726 | 0.75 | 20 | 103.3 | 80 | 120 | |
| 55 | Mn | 45 | 19.338 | 82660 | 0.83 | 20 | 96.7 | 80 | 120 | |
| 59 | Co | 72 | 40.625 | 510612 | 0.29 | 40 | 101.6 | 80 | 120 | |
| 60 | Ni | 72 | 37.701 | 135898 | 1.20 | 40 | 94.3 | 80 | 120 | |
| 63 | Cu | 72 | 20.631 | 188971 | 0.56 | 20 | 103.2 | 80 | 120 | |
| 66 | Zn | 72 | 20.487 | 26931 | 1.00 | 20 | 102.4 | 80 | 120 | |
| 75 | As | 72 | 20.902 | 17511 | 0.64 | 20 | 104.5 | 80 | 120 | |
| 78 | Se | 72 | 20.296 | 1293 | 2.56 | 20 | 101.5 | 80 | 120 | |
| 107 | Ag | 115 | 19.068 | 309683 | 0.22 | 20 | 95.3 | 80 | 120 | |
| 111 | Cd | 115 | 10.256 | 23771 | 1.13 | 10 | 102.6 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1191154 | 0.21 | 1250708 | 95.24 | 70 | 120 | |
| 72 | Ge | 801518 | 0.31 | 871265 | 91.99 | 70 | 120 | |
| 115 | In | 7912095 | 0.63 | 8749493 | 90.43 | 70 | 120 | |
| 209 | Bi | 20724579 | 1.21 | 24417425 | 84.88 | 70 | 120 | |

# Initial Calibration Verification (ICV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:40 | Sample Name | ICV-170915 |
| Data Batch | 170915.b | Comment | ICV 6020A_W |
| Data File Name | 023_ICV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 99.461 | 7045 | 0.97 | 100 | 99.5 | 90 | 110 | |
| 11 | B | 45 | 103.911 | 3709 | 5.90 | 100 | 103.9 | 90 | 110 | |
| 23 | Na | 45 | 2603.276 | 2925915 | 0.78 | 2500 | 104.1 | 90 | 110 | |
| 24 | Mg | 45 | 2587.464 | 1491541 | 0.73 | 2500 | 103.5 | 90 | 110 | |
| 27 | Al | 45 | 2457.935 | 516678 | 0.81 | 2500 | 98.3 | 90 | 110 | |
| 39 | K | 45 | 2563.114 | 1229390 | 0.42 | 2500 | 102.5 | 90 | 110 | |
| 44 | Ca | 45 | 2432.736 | 69460 | 0.99 | 2500 | 97.3 | 90 | 110 | |
| 47 | Ti | 45 | 100.611 | 19199 | 2.29 | 100 | 100.6 | 90 | 110 | |
| 51 | V | 45 | 100.390 | 666873 | 0.54 | 100 | 100.4 | 90 | 110 | |
| 52 | Cr | 45 | 103.457 | 846219 | 0.48 | 100 | 103.5 | 90 | 110 | |
| 55 | Mn | 45 | 99.882 | 449323 | 0.19 | 100 | 99.9 | 90 | 110 | |
| 56 | Fe | 45 | 2490.020 | 15987243 | 0.88 | 2500 | 99.6 | 90 | 110 | |
| 59 | Co | 72 | 104.153 | 1419082 | 0.30 | 100 | 104.2 | 90 | 110 | |
| 60 | Ni | 72 | 103.440 | 390428 | 0.86 | 100 | 103.4 | 90 | 110 | |
| 63 | Cu | 72 | 105.316 | 1041941 | 0.70 | 100 | 105.3 | 90 | 110 | |
| 66 | Zn | 72 | 105.420 | 148887 | 0.52 | 100 | 105.4 | 90 | 110 | |
| 75 | As | 72 | 101.811 | 92246 | 0.38 | 100 | 101.8 | 90 | 110 | |
| 78 | Se | 72 | 101.441 | 6923 | 2.00 | 100 | 101.4 | 90 | 110 | |
| 88 | Sr | 115 | 96.946 | 554931 | 0.27 | 100 | 96.9 | 90 | 110 | |
| 95 | Mo | 115 | 94.866 | 554463 | 0.59 | 100 | 94.9 | 90 | 110 | |
| 107 | Ag | 115 | 103.832 | 1877139 | 0.24 | 100 | 103.8 | 90 | 110 | |
| 111 | Cd | 115 | 101.056 | 260695 | 0.74 | 100 | 101.1 | 90 | 110 | |
| 118 | Sn | 115 | 99.307 | 537117 | 0.41 | 100 | 99.3 | 90 | 110 | |
| 121 | Sb | 115 | 102.973 | 682084 | 0.32 | 100 | 103.0 | 90 | 110 | |
| 137 | Ba | 115 | 99.526 | 240157 | 1.33 | 100 | 99.5 | 90 | 110 | |
| 205 | Tl | 209 | 96.720 | 4236581 | 0.20 | 100 | 96.7 | 90 | 110 | |
| 208 | Pb | 209 | 98.951 | 5688546 | 0.31 | 100 | 99.0 | 90 | 110 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1257207 | 0.74 | 1250708 | 100.52 | 70 | 120 | |
| 72 | Ge | 869141 | 0.23 | 871265 | 99.76 | 70 | 120 | |
| 115 | In | 8808371 | 0.34 | 8749493 | 100.67 | 70 | 120 | |
| 209 | Bi | 24390963 | 0.70 | 24417425 | 99.89 | 70 | 120 | |

# Low Level Calibration Verification (LLCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:50 | Sample Name | LCVL-170915 |
| Data Batch | 170915.b | Comment | LCVL6020A_W |
| Data File Name | 025LICV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 1.005 | 74 | 3.58 | 1 | 100.5 | 70 | 130 | |
| 11 | B | 45 | 18.202 | 787 | 5.87 | 20 | 91.0 | 70 | 130 | |
| 23 | Na | 45 | 93.470 | 117418 | 0.49 | 100 | 93.5 | 70 | 130 | |
| 24 | Mg | 45 | 91.384 | 52683 | 0.80 | 100 | 91.4 | 70 | 130 | |
| 27 | Al | 45 | 88.139 | 21790 | 2.15 | 100 | 88.1 | 70 | 130 | |
| 39 | K | 45 | 90.476 | 68900 | 1.53 | 100 | 90.5 | 70 | 130 | |
| 44 | Ca | 45 | 90.660 | 2811 | 1.56 | 100 | 90.7 | 70 | 130 | |
| 47 | Ti | 45 | 4.776 | 903 | 10.97 | 5 | 95.5 | 70 | 130 | |
| 51 | V | 45 | 0.916 | 7826 | 1.08 | 1 | 91.6 | 70 | 130 | |
| 52 | Cr | 45 | 4.744 | 39054 | 0.85 | 5 | 94.9 | 70 | 130 | |
| 55 | Mn | 45 | 4.789 | 21500 | 0.10 | 5 | 95.8 | 70 | 130 | |
| 56 | Fe | 45 | 102.763 | 664099 | 1.10 | 100 | 102.8 | 70 | 130 | |
| 59 | Co | 72 | 4.796 | 65517 | 0.55 | 5 | 95.9 | 70 | 130 | |
| 60 | Ni | 72 | 3.801 | 21987 | 1.91 | 5 | 76.0 | 70 | 130 | |
| 63 | Cu | 72 | 4.931 | 49662 | 1.43 | 5 | 98.6 | 70 | 130 | |
| 66 | Zn | 72 | 5.094 | 7502 | 2.84 | 5 | 101.9 | 70 | 130 | |
| 75 | As | 72 | 4.720 | 4331 | 2.06 | 5 | 94.4 | 70 | 130 | |
| 78 | Se | 72 | 4.887 | 353 | 4.73 | 5 | 97.7 | 70 | 130 | |
| 88 | Sr | 115 | 4.544 | 25947 | 2.13 | 5 | 90.9 | 70 | 130 | |
| 95 | Mo | 115 | 4.398 | 25376 | 0.76 | 5 | 88.0 | 70 | 130 | |
| 107 | Ag | 115 | 1.945 | 34639 | 2.15 | 2 | 97.3 | 70 | 130 | |
| 111 | Cd | 115 | 0.977 | 2488 | 5.15 | 1 | 97.7 | 70 | 130 | |
| 118 | Sn | 115 | 4.643 | 25106 | 2.22 | 5 | 92.9 | 70 | 130 | |
| 121 | Sb | 115 | 1.857 | 12247 | 2.41 | 2 | 92.9 | 70 | 130 | |
| 137 | Ba | 115 | 4.697 | 11210 | 1.13 | 5 | 93.9 | 70 | 130 | |
| 205 | Tl | 209 | 0.933 | 40844 | 1.16 | 1 | 93.3 | 70 | 130 | |
| 208 | Pb | 209 | 0.924 | 54162 | 0.20 | 1 | 92.4 | 70 | 130 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1237840 | 0.62 | 1250708 | 98.97 | 70 | 120 | |
| 72 | Ge | 867935 | 0.61 | 871265 | 99.62 | 70 | 120 | |
| 115 | In | 8662802 | 0.28 | 8749493 | 99.01 | 70 | 120 | |
| 209 | Bi | 24171187 | 0.59 | 24417425 | 98.99 | 70 | 120 | |

# Initial Calibration Blank (ICB) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:54 | Sample Name | ICB-170915 |
| Data Batch | 170915.b | Comment | ICB 6020A_W |
| Data File Name | 027_ICB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | MDL S | MDL Aq | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.010 | 5 | 24.7 | 0.4 | 0.3 | |
| 11 | B | 45 | 1.206 | 218 | 3.2 | 10 | 10 | |
| 23 | Na | 45 | 1.741 | 16368 | 2.3 | 50 | 100 | |
| 24 | Mg | 45 | -0.440 | 593 | 6.7 | 50 | 100 | |
| 27 | Al | 45 | -4.780 | 2687 | 4.8 | 50 | 10 | |
| 39 | K | 45 | -0.846 | 26653 | 1.6 | 50 | 100 | |
| 44 | Ca | 45 | -1.225 | 237 | 11.9 | 50 | 100 | |
| 47 | Ti | 45 | -0.005 | 6 | 124.9 | 4 | 3 | |
| 51 | V | 45 | 0.011 | 1911 | 2.2 | 4 | 3 | |
| 52 | Cr | 45 | -0.043 | 542 | 6.1 | 2 | 2 | |
| 55 | Mn | 45 | -0.023 | 200 | 12.0 | 2 | 3 | |
| 56 | Fe | 45 | -0.666 | 10854 | 1.5 | 50 | 50 | |
| 59 | Co | 72 | -0.008 | 160 | 8.3 | 2 | 3 | |
| 60 | Ni | 72 | -0.719 | 5265 | 2.6 | 2 | 3 | |
| 63 | Cu | 72 | -0.021 | 786 | 3.7 | 2 | 2 | |
| 66 | Zn | 72 | 0.258 | 691 | 4.3 | 4 | 2 | |
| 75 | As | 72 | 0.003 | 66 | 7.9 | 2 | 2 | |
| 78 | Se | 72 | 0.095 | 27 | 13.8 | 1 | 2 | |
| 88 | Sr | 115 | 0.001 | 392 | 14.5 | 4 | 3 | |
| 95 | Mo | 115 | 0.057 | 433 | 21.4 | 2 | 2 | |
| 107 | Ag | 115 | 0.003 | 108 | 48.1 | 0.4 | 1 | |
| 111 | Cd | 115 | -0.002 | 6 | 34.7 | 0.4 | 0.3 | |
| 118 | Sn | 115 | 0.026 | 567 | 2.4 | 4 | 3 | |
| 121 | Sb | 115 | -0.004 | 124 | 10.1 | 2 | 0.8 | |
| 137 | Ba | 115 | 0.009 | 89 | 24.1 | 2 | 3 | |
| 205 | Tl | 209 | 0.024 | 1399 | 7.2 | 2 | 0.5 | |
| 208 | Pb | 209 | 0.001 | 1602 | 5.4 | 0.4 | 0.3 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1233903 | 0.24 | 1250708 | 98.66 | 70 | 120 | |
| 72 | Ge | 862382 | 0.16 | 871265 | 98.98 | 70 | 120 | |
| 115 | In | 8674896 | 1.04 | 8749493 | 99.15 | 70 | 120 | |
| 209 | Bi | 24275692 | 0.93 | 24417425 | 99.42 | 70 | 120 | |

# Method Blank Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/17 10:56 AM | Sample Name | MB-82353 |
| Data Batch | 170915.b | Comment | MBLK6020A_S |
| Data File Name | 028_PB.d | Dilution | 5 |

| Mass | Name | IS | Conc (ppb) | CPS | %RSD | High Limit | Flag |
|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | -0.005 | 4 | 41.66 | | |
| 11 | B | 45 | -0.246 | 172 | 22.60 | | |
| 23 | Na | 45 | 10.219 | 26094 | 2.31 | | |
| 24 | Mg | 45 | 2.571 | 2334 | 3.98 | | |
| 27 | Al | 45 | -0.975 | 3524 | 6.16 | | |
| 39 | K | 45 | 7.231 | 30867 | 2.35 | | |
| 44 | Ca | 45 | 13.984 | 673 | 11.81 | | |
| 47 | Ti | 45 | 0.035 | 13 | 25.01 | | |
| 51 | V | 45 | -0.012 | 1793 | 10.89 | | |
| 52 | Cr | 45 | 0.048 | 1297 | 7.13 | | |
| 55 | Mn | 45 | 0.029 | 439 | 10.99 | | |
| 56 | Fe | 45 | 2.362 | 30405 | 1.66 | | |
| 59 | Co | 72 | -0.002 | 247 | 16.61 | | |
| 60 | Ni | 72 | -0.563 | 5878 | 1.67 | | |
| 63 | Cu | 72 | 0.052 | 1513 | 11.66 | | |
| 66 | Zn | 72 | 1.130 | 1925 | 3.52 | | |
| 75 | As | 72 | 0.011 | 73 | 16.09 | | |
| 78 | Se | 72 | 0.078 | 26 | 15.34 | | |
| 88 | Sr | 115 | 0.031 | 573 | 10.29 | | |
| 95 | Mo | 115 | 0.067 | 499 | 10.03 | | |
| 107 | Ag | 115 | 0.002 | 82 | 10.20 | | |
| 111 | Cd | 115 | 0.001 | 12 | 56.76 | | |
| 118 | Sn | 115 | 4.709 | 26015 | 2.07 | | J |
| 121 | Sb | 115 | -0.002 | 139 | 43.62 | | |
| 137 | Ba | 115 | 0.018 | 113 | 17.65 | | |
| 205 | Tl | 209 | 0.030 | 1669 | 3.30 | | |
| 208 | Pb | 209 | 0.017 | 2592 | 2.03 | | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1254099 | 0.27 | 1250708 | 100.27 | 70 | 120 | |
| 72 | Ge | 868311 | 0.21 | 871265 | 99.66 | 70 | 120 | |
| 115 | In | 8853886 | 0.92 | 8749493 | 101.19 | 70 | 120 | |
| 209 | Bi | 24774282 | 0.19 | 24417425 | 101.46 | 70 | 120 | |

# Laboratory Control Sample (LCS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 10:58 | Sample Name | LCS-82353 |
| Data Batch | 170915.b | Comment | LCS 6020A_S |
| Data File Name | 029_LS.d | Dilution | 5 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 195.107 | 13795 | 0.82 | 200 | 97.6 | 80 | 120 | |
| 11 | B | 45 | 195.593 | 6814 | 3.35 | 200 | 97.8 | 80 | 120 | |
| 23 | Na | 45 | 4964.759 | 5557821 | 0.95 | 1000 | 496.5 | 80 | 120 | Fail |
| 24 | Mg | 45 | 4964.667 | 2856563 | 0.33 | 1000 | 496.5 | 80 | 120 | Fail |
| 27 | Al | 45 | 990.689 | 210162 | 0.53 | 1000 | 99.1 | 80 | 120 | |
| 39 | K | 45 | 5031.709 | 2383187 | 0.38 | 1000 | 503.2 | 80 | 120 | Fail |
| 44 | Ca | 45 | 4898.457 | 139364 | 0.79 | 1000 | 489.8 | 80 | 120 | Fail |
| 47 | Ti | 45 | 200.911 | 38268 | 1.22 | 200 | 100.5 | 80 | 120 | |
| 51 | V | 45 | 197.516 | 1308220 | 0.53 | 200 | 98.8 | 80 | 120 | |
| 52 | Cr | 45 | 201.396 | 1643782 | 0.62 | 200 | 100.7 | 80 | 120 | |
| 55 | Mn | 45 | 199.336 | 894972 | 0.57 | 200 | 99.7 | 80 | 120 | |
| 56 | Fe | 45 | 1012.338 | 6498315 | 0.31 | 1000 | 101.2 | 80 | 120 | |
| 59 | Co | 72 | 203.568 | 2758619 | 0.28 | 200 | 101.8 | 80 | 120 | |
| 60 | Ni | 72 | 204.485 | 759988 | 0.22 | 200 | 102.2 | 80 | 120 | |
| 63 | Cu | 72 | 205.995 | 2026267 | 0.15 | 200 | 103.0 | 80 | 120 | |
| 66 | Zn | 72 | 200.265 | 281052 | 0.66 | 200 | 100.1 | 80 | 120 | |
| 75 | As | 72 | 198.474 | 178816 | 0.28 | 200 | 99.2 | 80 | 120 | |
| 78 | Se | 72 | 195.728 | 13269 | 1.33 | 200 | 97.9 | 80 | 120 | |
| 88 | Sr | 115 | 196.344 | 1110387 | 0.58 | 200 | 98.2 | 80 | 120 | |
| 95 | Mo | 115 | 192.239 | 1110363 | 0.53 | 200 | 96.1 | 80 | 120 | |
| 107 | Ag | 115 | 205.885 | 3678665 | 0.28 | 200 | 102.9 | 80 | 120 | |
| 111 | Cd | 115 | 197.947 | 504669 | 0.62 | 200 | 99.0 | 80 | 120 | |
| 118 | Sn | 115 | 203.122 | 1085366 | 0.28 | 200 | 101.6 | 80 | 120 | |
| 121 | Sb | 115 | 203.201 | 1330133 | 0.02 | 200 | 101.6 | 80 | 120 | |
| 137 | Ba | 115 | 199.193 | 474966 | 0.47 | 200 | 99.6 | 80 | 120 | |
| 205 | Tl | 209 | 203.284 | 8786571 | 1.35 | 200 | 101.6 | 80 | 120 | |
| 208 | Pb | 209 | 199.995 | 11343287 | 0.49 | 200 | 100.0 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1255256 | 0.87 | 1250708 | 100.36 | 70 | 120 | |
| 72 | Ge | 864563 | 0.75 | 871265 | 99.23 | 70 | 120 | |
| 115 | In | 8705713 | 0.43 | 8749493 | 99.50 | 70 | 120 | |
| 209 | Bi | 24069973 | 1.29 | 24417425 | 98.58 | 70 | 120 | |

# Laboratory Control Sample (LCS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:00 | Sample Name | LCSD-82353 |
| Data Batch | 170915.b | Comment | LCSD6020A_S |
| Data File Name | 030_LS.d | Dilution | 5 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 194.752 | 13717 | 1.33 | 200 | 97.4 | 80 | 120 | |
| 11 | B | 45 | 205.179 | 7110 | 2.03 | 200 | 102.6 | 80 | 120 | |
| 23 | Na | 45 | 4979.729 | 5552998 | 0.66 | 1000 | 498.0 | 80 | 120 | Fail |
| 24 | Mg | 45 | 4968.420 | 2847681 | 0.07 | 1000 | 496.8 | 80 | 120 | Fail |
| 27 | Al | 45 | 982.942 | 207735 | 1.01 | 1000 | 98.3 | 80 | 120 | |
| 39 | K | 45 | 4986.069 | 2352612 | 0.08 | 1000 | 498.6 | 80 | 120 | Fail |
| 44 | Ca | 45 | 4876.066 | 138189 | 1.11 | 1000 | 487.6 | 80 | 120 | Fail |
| 47 | Ti | 45 | 198.582 | 37683 | 2.14 | 200 | 99.3 | 80 | 120 | |
| 51 | V | 45 | 195.493 | 1289781 | 0.23 | 200 | 97.7 | 80 | 120 | |
| 52 | Cr | 45 | 198.522 | 1614062 | 0.71 | 200 | 99.3 | 80 | 120 | |
| 55 | Mn | 45 | 197.453 | 883092 | 0.59 | 200 | 98.7 | 80 | 120 | |
| 56 | Fe | 45 | 1010.144 | 6459150 | 0.49 | 1000 | 101.0 | 80 | 120 | |
| 59 | Co | 72 | 204.364 | 2757055 | 0.28 | 200 | 102.2 | 80 | 120 | |
| 60 | Ni | 72 | 203.655 | 753557 | 0.19 | 200 | 101.8 | 80 | 120 | |
| 63 | Cu | 72 | 205.867 | 2015965 | 0.45 | 200 | 102.9 | 80 | 120 | |
| 66 | Zn | 72 | 200.429 | 280019 | 0.25 | 200 | 100.2 | 80 | 120 | |
| 75 | As | 72 | 198.070 | 177651 | 0.35 | 200 | 99.0 | 80 | 120 | |
| 78 | Se | 72 | 193.780 | 13078 | 0.48 | 200 | 96.9 | 80 | 120 | |
| 88 | Sr | 115 | 194.132 | 1097531 | 0.25 | 200 | 97.1 | 80 | 120 | |
| 95 | Mo | 115 | 189.549 | 1094454 | 0.15 | 200 | 94.8 | 80 | 120 | |
| 107 | Ag | 115 | 204.359 | 3650058 | 0.52 | 200 | 102.2 | 80 | 120 | |
| 111 | Cd | 115 | 196.210 | 500074 | 0.19 | 200 | 98.1 | 80 | 120 | |
| 118 | Sn | 115 | 200.304 | 1069958 | 0.21 | 200 | 100.2 | 80 | 120 | |
| 121 | Sb | 115 | 201.523 | 1318690 | 0.40 | 200 | 100.8 | 80 | 120 | |
| 137 | Ba | 115 | 196.328 | 467964 | 0.77 | 200 | 98.2 | 80 | 120 | |
| 205 | Tl | 209 | 201.957 | 8733914 | 0.73 | 200 | 101.0 | 80 | 120 | |
| 208 | Pb | 209 | 198.419 | 11261501 | 0.14 | 200 | 99.2 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1250354 | 0.61 | 1250708 | 99.97 | 70 | 120 | |
| 72 | Ge | 860685 | 0.51 | 871265 | 98.79 | 70 | 120 | |
| 115 | In | 8703210 | 0.92 | 8749493 | 99.47 | 70 | 120 | |
| 209 | Bi | 24083685 | 0.83 | 24417425 | 98.63 | 70 | 120 | |

# Dilution Sample (Dil) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:05 | Sample Name | 1709034-02C SD |
| Data Batch | 170915.b | Comment | SD 6020A_S |
| Data File Name | 033_SD.d | Dilution | 25 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Value | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.277 | 23 | 8.70 | 1.1 | 126.7 | 110 | 90 | |
| 11 | B | 45 | 19.207 | 811 | 8.71 | 68.5 | 140.2 | 110 | 90 | |
| 23 | Na | 45 | 256.372 | 293429 | 1.22 | 1183.5 | 108.3 | 110 | 90 | Good |
| 24 | Mg | 45 | 2950.645 | 1655687 | 0.55 | 13629.0 | 108.2 | 110 | 90 | Good |
| 27 | Al | 45 | 5850.394 | 1192195 | 0.26 | 27779.0 | 105.3 | 110 | 90 | Good |
| 39 | K | 45 | 1614.391 | 763734 | 0.83 | 7911.1 | 102.0 | 110 | 90 | Good |
| 44 | Ca | 45 | 251064.983 | 6950742 | 0.61 | 1212835.5 | 103.5 | 110 | 90 | Good |
| 47 | Ti | 45 | 68.357 | 12699 | 2.45 | 324.9 | 105.2 | 110 | 90 | Good |
| 51 | V | 45 | 16.516 | 108328 | 0.40 | 78.4 | 105.3 | 110 | 90 | Good |
| 52 | Cr | 45 | 6.944 | 56110 | 1.40 | 32.4 | 107.0 | 110 | 90 | Good |
| 55 | Mn | 45 | 385.299 | 1686436 | 0.08 | 1842.5 | 104.6 | 110 | 90 | Good |
| 56 | Fe | 45 | 4315.787 | 26963050 | 0.59 | 19552.3 | 110.4 | 110 | 90 | |
| 59 | Co | 72 | 3.034 | 39152 | 1.42 | 14.6 | 104.1 | 110 | 90 | Good |
| 60 | Ni | 72 | 6.579 | 30383 | 0.61 | 33.5 | 98.2 | 110 | 90 | Good |
| 63 | Cu | 72 | 2.853 | 27472 | 0.51 | 13.0 | 109.5 | 110 | 90 | Good |
| 66 | Zn | 72 | 21.386 | 28671 | 1.18 | 93.1 | 114.8 | 110 | 90 | |
| 75 | As | 72 | 1.827 | 1616 | 2.63 | 8.9 | 102.7 | 110 | 90 | Good |
| 78 | Se | 72 | 0.795 | 70 | 3.22 | 3.3 | 122.2 | 110 | 90 | |
| 88 | Sr | 115 | 425.096 | 2313683 | 0.84 | 2239.2 | 94.9 | 110 | 90 | Good |
| 95 | Mo | 115 | 0.237 | 1417 | 8.09 | 0.9 | 132.4 | 110 | 90 | |
| 107 | Ag | 115 | 0.022 | 427 | 13.69 | 0.0 | 234.1 | 110 | 90 | |
| 111 | Cd | 115 | 0.113 | 288 | 5.71 | 0.5 | 114.4 | 110 | 90 | |
| 118 | Sn | 115 | 1.521 | 8238 | 4.04 | 7.2 | 104.9 | 110 | 90 | Good |
| 121 | Sb | 115 | 0.078 | 638 | 4.86 | 0.4 | 108.4 | 110 | 90 | Good |
| 137 | Ba | 115 | 14.386 | 33075 | 1.04 | 70.0 | 102.8 | 110 | 90 | Good |
| 205 | Tl | 209 | 0.096 | 4186 | 3.72 | 0.4 | 132.1 | 110 | 90 | |
| 208 | Pb | 209 | 1.724 | 92415 | 0.58 | 8.4 | 102.1 | 110 | 90 | Good |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1223827 | 0.30 | 1250708 | 97.85 | 70 | 120 | |
| 72 | Ge | 817835 | 0.22 | 871265 | 93.87 | 70 | 120 | |
| 115 | In | 8380211 | 1.21 | 8749493 | 95.78 | 70 | 120 | |
| 209 | Bi | 22399159 | 0.34 | 24417425 | 91.73 | 70 | 120 | |

# Post Digestion Spike Sample (PDS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:24 | Sample Name | 1709034-02C PDS |
| Data Batch | 170915.b | Comment | PDS 6020A_S |
| Data File Name | 043_PDS.d | Dilution | 5 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Conc | Spk Amt | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 163.963 | 11422 | 1.87 | 1.1 | 200 | 81.4 | 75 | 125 | |
| 11 | B | 45 | 226.560 | 7746 | 4.45 | 68.5 | 200 | 79.0 | 75 | 125 | |
| 23 | Na | 45 | 6059.837 | 6680203 | 0.86 | 1183.5 | 5000 | 97.5 | 75 | 125 | |
| 24 | Mg | 45 | 17990.714 | 10196213 | 1.17 | 13629.0 | 5000 | 87.2 | 75 | 125 | |
| 27 | Al | 45 | 32808.248 | 6738601 | 1.28 | 27779.0 | 5000 | 100.6 | 75 | 125 | |
| 39 | K | 45 | 13144.823 | 6089870 | 0.62 | 7911.1 | 5000 | 104.7 | 75 | 125 | |
| 44 | Ca | 45 | ######## | 34650367 | 0.19 | 1212835.5 | 5000 | 517.2 | 75 | 125 | Fail |
| 47 | Ti | 45 | 528.489 | 99167 | 0.65 | 324.9 | 200 | 101.8 | 75 | 125 | |
| 51 | V | 45 | 269.808 | 1759870 | 0.33 | 78.4 | 200 | 95.7 | 75 | 125 | |
| 52 | Cr | 45 | 220.564 | 1773592 | 1.18 | 32.4 | 200 | 94.1 | 75 | 125 | |
| 55 | Mn | 45 | 2049.338 | 9062302 | 0.11 | 1842.5 | 200 | 103.4 | 75 | 125 | |
| 56 | Fe | 45 | 24207.850 | 152751683 | 0.90 | 19552.3 | 5000 | 93.1 | 75 | 125 | |
| 59 | Co | 72 | 206.972 | 2539148 | 0.47 | 14.6 | 200 | 96.2 | 75 | 125 | |
| 60 | Ni | 72 | 218.215 | 733724 | 0.11 | 33.5 | 200 | 92.4 | 75 | 125 | |
| 63 | Cu | 72 | 190.099 | 1692882 | 0.21 | 13.0 | 200 | 88.5 | 75 | 125 | |
| 66 | Zn | 72 | 268.159 | 340581 | 0.68 | 93.1 | 200 | 87.5 | 75 | 125 | |
| 75 | As | 72 | 212.233 | 173096 | 0.18 | 8.9 | 200 | 101.7 | 75 | 125 | |
| 78 | Se | 72 | 192.969 | 11843 | 3.45 | 3.3 | 200 | 94.9 | 75 | 125 | |
| 88 | Sr | 115 | 2514.933 | 12749326 | 0.30 | 2239.2 | 200 | 137.9 | 75 | 125 | Fail |
| 95 | Mo | 115 | 188.146 | 974461 | 0.28 | 0.9 | 200 | 93.6 | 75 | 125 | |
| 107 | Ag | 115 | 173.559 | 2780708 | 0.57 | 0.0 | 200 | 86.8 | 75 | 125 | |
| 111 | Cd | 115 | 179.106 | 409467 | 0.41 | 0.5 | 200 | 89.3 | 75 | 125 | |
| 118 | Sn | 115 | 200.111 | 958814 | 0.11 | 7.2 | 200 | 96.4 | 75 | 125 | |
| 121 | Sb | 115 | 190.892 | 1120488 | 0.34 | 0.4 | 200 | 95.3 | 75 | 125 | |
| 137 | Ba | 115 | 264.735 | 566023 | 0.40 | 70.0 | 200 | 97.4 | 75 | 125 | |
| 205 | Tl | 209 | 203.089 | 6761329 | 0.89 | 0.4 | 200 | 101.4 | 75 | 125 | |
| 208 | Pb | 209 | 204.749 | 8945946 | 0.13 | 8.4 | 200 | 98.2 | 75 | 125 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1236622 | 0.31 | 1250708 | 98.87 | 70 | 120 | |
| 72 | Ge | 782651 | 0.30 | 871265 | 89.83 | 70 | 120 | |
| 115 | In | 7806276 | 0.08 | 8749493 | 89.22 | 70 | 120 | |
| 209 | Bi | 18540726 | 0.93 | 24417425 | 75.93 | 70 | 120 | |

# Matrix Spike Sample (MS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:26 | Sample Name | 1709034-02C MS |
| Data Batch | 170915.b | Comment | MS 6020A_S |
| Data File Name | 044_MSS.d | Dilution | 5 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Conc | Spk Amt | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 166.249 | 11538 | 0.39 | 1.1 | 200 | 82.6 | 80 | 120 | |
| 11 | B | 45 | 237.189 | 8072 | 1.61 | 68.5 | 200 | 84.3 | 80 | 120 | |
| 23 | Na | 45 | 6135.882 | 6738996 | 0.82 | 1183.5 | 1000 | 495.2 | 80 | 120 | Fail |
| 24 | Mg | 45 | 18657.700 | 10535266 | 0.39 | 13629.0 | 1000 | 502.9 | 80 | 120 | Fail |
| 27 | Al | 45 | 31997.574 | 6548084 | 0.54 | 27779.0 | 1000 | 421.9 | 80 | 120 | Fail |
| 39 | K | 45 | 13959.478 | 6441868 | 0.32 | 7911.1 | 1000 | 604.8 | 80 | 120 | Fail |
| 44 | Ca | 45 | ######## | 34131899 | 0.46 | 1212835.5 | 1000 | 1184.6 | 80 | 120 | Fail |
| 47 | Ti | 45 | 547.177 | 102293 | 1.15 | 324.9 | 200 | 111.1 | 80 | 120 | |
| 51 | V | 45 | 275.550 | 1790622 | 0.58 | 78.4 | 200 | 98.6 | 80 | 120 | |
| 52 | Cr | 45 | 220.388 | 1765581 | 0.53 | 32.4 | 200 | 94.0 | 80 | 120 | |
| 55 | Mn | 45 | 2043.888 | 9004945 | 0.44 | 1842.5 | 200 | 100.7 | 80 | 120 | |
| 56 | Fe | 45 | 22219.039 | 139685199 | 0.55 | 19552.3 | 1000 | 266.7 | 80 | 120 | Fail |
| 59 | Co | 72 | 208.275 | 2543270 | 0.41 | 14.6 | 200 | 96.8 | 80 | 120 | |
| 60 | Ni | 72 | 223.690 | 748460 | 0.34 | 33.5 | 200 | 95.1 | 80 | 120 | |
| 63 | Cu | 72 | 194.037 | 1719858 | 0.36 | 13.0 | 200 | 90.5 | 80 | 120 | |
| 66 | Zn | 72 | 274.978 | 347600 | 0.71 | 93.1 | 200 | 90.9 | 80 | 120 | |
| 75 | As | 72 | 214.910 | 174460 | 0.50 | 8.9 | 200 | 103.0 | 80 | 120 | |
| 78 | Se | 72 | 200.285 | 12234 | 1.26 | 3.3 | 200 | 98.5 | 80 | 120 | |
| 88 | Sr | 115 | 2450.323 | 12384473 | 0.12 | 2239.2 | 200 | 105.5 | 80 | 120 | |
| 95 | Mo | 115 | 190.072 | 981468 | 0.06 | 0.9 | 200 | 94.6 | 80 | 120 | |
| 107 | Ag | 115 | 177.700 | 2838494 | 0.47 | 0.0 | 200 | 88.8 | 80 | 120 | |
| 111 | Cd | 115 | 179.740 | 409669 | 0.75 | 0.5 | 200 | 89.6 | 80 | 120 | |
| 118 | Sn | 115 | 200.654 | 958524 | 0.15 | 7.2 | 200 | 96.7 | 80 | 120 | |
| 121 | Sb | 115 | 180.239 | 1054784 | 0.19 | 0.4 | 200 | 89.9 | 80 | 120 | |
| 137 | Ba | 115 | 269.743 | 574980 | 0.64 | 70.0 | 200 | 99.9 | 80 | 120 | |
| 205 | Tl | 209 | 210.471 | 6930874 | 0.53 | 0.4 | 200 | 105.1 | 80 | 120 | |
| 208 | Pb | 209 | 209.810 | 9067331 | 0.28 | 8.4 | 200 | 100.7 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1232081 | 0.53 | 1250708 | 98.51 | 70 | 120 | |
| 72 | Ge | 779033 | 0.73 | 871265 | 89.41 | 70 | 120 | |
| 115 | In | 7782930 | 0.53 | 8749493 | 88.95 | 70 | 120 | |
| 209 | Bi | 18338151 | 0.68 | 24417425 | 75.10 | 70 | 120 | |

# Matrix Spike Sample (MS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:28 | Sample Name | 1709034-02C MSD |
| Data Batch | 170915.b | Comment | MSD 6020A_S |
| Data File Name | 045_MSS.d | Dilution | 5 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Conc | Spk Amt | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 164.842 | 11486 | 1.11 | 1.1 | 200 | 81.9 | 80 | 120 | |
| 11 | B | 45 | 236.262 | 8073 | 1.98 | 68.5 | 200 | 83.9 | 80 | 120 | |
| 23 | Na | 45 | 6134.995 | 6764831 | 1.17 | 1183.5 | 1000 | 495.2 | 80 | 120 | Fail |
| 24 | Mg | 45 | 18364.296 | 10411205 | 1.50 | 13629.0 | 1000 | 473.5 | 80 | 120 | Fail |
| 27 | Al | 45 | 28946.756 | 5947798 | 1.29 | 27779.0 | 1000 | 116.8 | 80 | 120 | |
| 39 | K | 45 | 13537.669 | 6272875 | 0.39 | 7911.1 | 1000 | 562.7 | 80 | 120 | Fail |
| 44 | Ca | 45 | ######## | 34740910 | 0.42 | 1212835.5 | 1000 | 2873.9 | 80 | 120 | Fail |
| 47 | Ti | 45 | 533.659 | 100165 | 0.54 | 324.9 | 200 | 104.4 | 80 | 120 | |
| 51 | V | 45 | 270.891 | 1767425 | 0.42 | 78.4 | 200 | 96.2 | 80 | 120 | |
| 52 | Cr | 45 | 219.453 | 1765119 | 0.47 | 32.4 | 200 | 93.5 | 80 | 120 | |
| 55 | Mn | 45 | 2057.132 | 9099331 | 0.78 | 1842.5 | 200 | 107.3 | 80 | 120 | |
| 56 | Fe | 45 | 21109.801 | 133240581 | 0.32 | 19552.3 | 1000 | 155.7 | 80 | 120 | Fail |
| 59 | Co | 72 | 210.632 | 2563493 | 0.44 | 14.6 | 200 | 98.0 | 80 | 120 | |
| 60 | Ni | 72 | 224.027 | 747090 | 0.26 | 33.5 | 200 | 95.3 | 80 | 120 | |
| 63 | Cu | 72 | 195.748 | 1729289 | 0.46 | 13.0 | 200 | 91.4 | 80 | 120 | |
| 66 | Zn | 72 | 274.345 | 345661 | 0.55 | 93.1 | 200 | 90.6 | 80 | 120 | |
| 75 | As | 72 | 217.814 | 176234 | 0.69 | 8.9 | 200 | 104.5 | 80 | 120 | |
| 78 | Se | 72 | 200.579 | 12211 | 0.10 | 3.3 | 200 | 98.7 | 80 | 120 | |
| 88 | Sr | 115 | 2503.531 | 12753276 | 0.72 | 2239.2 | 200 | 132.2 | 80 | 120 | Fail |
| 95 | Mo | 115 | 190.987 | 993959 | 0.19 | 0.9 | 200 | 95.0 | 80 | 120 | |
| 107 | Ag | 115 | 178.651 | 2876116 | 0.63 | 0.0 | 200 | 89.3 | 80 | 120 | |
| 111 | Cd | 115 | 180.434 | 414496 | 0.40 | 0.5 | 200 | 90.0 | 80 | 120 | |
| 118 | Sn | 115 | 201.034 | 967895 | 0.25 | 7.2 | 200 | 96.9 | 80 | 120 | |
| 121 | Sb | 115 | 182.268 | 1075055 | 0.30 | 0.4 | 200 | 91.0 | 80 | 120 | |
| 137 | Ba | 115 | 267.576 | 574866 | 0.33 | 70.0 | 200 | 98.8 | 80 | 120 | |
| 205 | Tl | 209 | 213.494 | 7052622 | 0.45 | 0.4 | 200 | 106.6 | 80 | 120 | |
| 208 | Pb | 209 | 211.281 | 9159553 | 0.12 | 8.4 | 200 | 101.4 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1236977 | 0.36 | 1250708 | 98.90 | 70 | 120 | |
| 72 | Ge | 776439 | 0.43 | 871265 | 89.12 | 70 | 120 | |
| 115 | In | 7844200 | 0.44 | 8749493 | 89.65 | 70 | 120 | |
| 209 | Bi | 18396212 | 0.75 | 24417425 | 75.34 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:30 | Sample Name | CCV1-170915 |
| Data Batch | 170915.b | Comment | CCV 6020A_W |
| Data File Name | 046_CCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 187.600 | 13092 | 1.01 | 200 | 93.8 | 90 | 110 | |
| 11 | B | 45 | 193.275 | 6647 | 1.86 | 200 | 96.6 | 90 | 110 | |
| 23 | Na | 45 | 4733.776 | 5231483 | 0.63 | 5000 | 94.7 | 90 | 110 | |
| 24 | Mg | 45 | 4707.853 | 2673896 | 0.33 | 5000 | 94.2 | 90 | 110 | |
| 27 | Al | 45 | 4969.232 | 1025722 | 0.35 | 5000 | 99.4 | 90 | 110 | |
| 39 | K | 45 | 4757.132 | 2225495 | 0.67 | 5000 | 95.1 | 90 | 110 | |
| 44 | Ca | 45 | 5266.015 | 147862 | 6.14 | 5000 | 105.3 | 90 | 110 | |
| 47 | Ti | 45 | 196.146 | 36879 | 0.86 | 200 | 98.1 | 90 | 110 | |
| 51 | V | 45 | 191.878 | 1254482 | 0.11 | 200 | 95.9 | 90 | 110 | |
| 52 | Cr | 45 | 195.076 | 1571710 | 0.24 | 200 | 97.5 | 90 | 110 | |
| 55 | Mn | 45 | 194.547 | 862215 | 0.56 | 200 | 97.3 | 90 | 110 | |
| 56 | Fe | 45 | 5008.406 | 31674118 | 0.97 | 5000 | 100.2 | 90 | 110 | |
| 59 | Co | 72 | 197.094 | 2643417 | 0.63 | 200 | 98.5 | 90 | 110 | |
| 60 | Ni | 72 | 198.056 | 728763 | 0.72 | 200 | 99.0 | 90 | 110 | |
| 63 | Cu | 72 | 200.484 | 1951768 | 0.20 | 200 | 100.2 | 90 | 110 | |
| 66 | Zn | 72 | 198.621 | 275867 | 0.63 | 200 | 99.3 | 90 | 110 | |
| 75 | As | 72 | 196.104 | 174858 | 0.53 | 200 | 98.1 | 90 | 110 | |
| 78 | Se | 72 | 196.336 | 13172 | 0.72 | 200 | 98.2 | 90 | 110 | |
| 88 | Sr | 115 | 190.649 | 1074051 | 0.27 | 200 | 95.3 | 90 | 110 | |
| 95 | Mo | 115 | 184.428 | 1061155 | 0.20 | 200 | 92.2 | 90 | 110 | |
| 107 | Ag | 115 | 199.599 | 3552639 | 0.39 | 200 | 99.8 | 90 | 110 | |
| 111 | Cd | 115 | 192.305 | 488406 | 0.40 | 200 | 96.2 | 90 | 110 | |
| 118 | Sn | 115 | 190.372 | 1013344 | 0.25 | 200 | 95.2 | 90 | 110 | |
| 121 | Sb | 115 | 198.083 | 1291666 | 0.67 | 200 | 99.0 | 90 | 110 | |
| 137 | Ba | 115 | 192.386 | 456986 | 0.69 | 200 | 96.2 | 90 | 110 | |
| 205 | Tl | 209 | 195.238 | 8381200 | 0.55 | 200 | 97.6 | 90 | 110 | |
| 208 | Pb | 209 | 191.741 | 10802279 | 0.09 | 200 | 95.9 | 90 | 110 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1238981 | 0.35 | 1250708 | 99.06 | 70 | 120 | |
| 72 | Ge | 855619 | 0.14 | 871265 | 98.20 | 70 | 120 | |
| 115 | In | 8672229 | 0.32 | 8749493 | 99.12 | 70 | 120 | |
| 209 | Bi | 23906243 | 0.84 | 24417425 | 97.91 | 70 | 120 | |

# Low Level Calibration Verification (LLCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:35 | Sample Name | LCVL1-170915 |
| Data Batch | 170915.b | Comment | LCVL6020A_W |
| Data File Name | 048LCCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 1.045 | 77 | 19.19 | 1 | 104.5 | 70 | 130 | |
| 11 | B | 45 | 21.687 | 910 | 3.26 | 20 | 108.4 | 70 | 130 | |
| 23 | Na | 45 | 96.188 | 121308 | 1.20 | 100 | 96.2 | 70 | 130 | |
| 24 | Mg | 45 | 91.142 | 52937 | 0.76 | 100 | 91.1 | 70 | 130 | |
| 27 | Al | 45 | 90.116 | 22361 | 0.37 | 100 | 90.1 | 70 | 130 | |
| 39 | K | 45 | 91.833 | 70043 | 0.41 | 100 | 91.8 | 70 | 130 | |
| 44 | Ca | 45 | 108.220 | 3327 | 5.39 | 100 | 108.2 | 70 | 130 | |
| 47 | Ti | 45 | 4.545 | 867 | 3.08 | 5 | 90.9 | 70 | 130 | |
| 51 | V | 45 | 0.928 | 7961 | 1.46 | 1 | 92.8 | 70 | 130 | |
| 52 | Cr | 45 | 4.739 | 39305 | 1.15 | 5 | 94.8 | 70 | 130 | |
| 55 | Mn | 45 | 4.750 | 21489 | 0.64 | 5 | 95.0 | 70 | 130 | |
| 56 | Fe | 45 | 102.820 | 669400 | 0.14 | 100 | 102.8 | 70 | 130 | |
| 59 | Co | 72 | 4.853 | 66316 | 0.39 | 5 | 97.1 | 70 | 130 | |
| 60 | Ni | 72 | 4.040 | 22879 | 1.68 | 5 | 80.8 | 70 | 130 | |
| 63 | Cu | 72 | 4.967 | 50045 | 0.92 | 5 | 99.3 | 70 | 130 | |
| 66 | Zn | 72 | 4.735 | 6999 | 2.22 | 5 | 94.7 | 70 | 130 | |
| 75 | As | 72 | 4.779 | 4386 | 1.49 | 5 | 95.6 | 70 | 130 | |
| 78 | Se | 72 | 4.931 | 356 | 6.47 | 5 | 98.6 | 70 | 130 | |
| 88 | Sr | 115 | 4.561 | 26363 | 1.48 | 5 | 91.2 | 70 | 130 | |
| 95 | Mo | 115 | 4.459 | 26044 | 0.48 | 5 | 89.2 | 70 | 130 | |
| 107 | Ag | 115 | 1.904 | 34312 | 0.59 | 2 | 95.2 | 70 | 130 | |
| 111 | Cd | 115 | 0.963 | 2482 | 2.41 | 1 | 96.3 | 70 | 130 | |
| 118 | Sn | 115 | 4.676 | 25589 | 0.68 | 5 | 93.5 | 70 | 130 | |
| 121 | Sb | 115 | 1.913 | 12764 | 1.14 | 2 | 95.7 | 70 | 130 | |
| 137 | Ba | 115 | 4.628 | 11182 | 1.93 | 5 | 92.6 | 70 | 130 | |
| 205 | Tl | 209 | 0.934 | 41134 | 1.65 | 1 | 93.4 | 70 | 130 | |
| 208 | Pb | 209 | 0.911 | 53775 | 0.76 | 1 | 91.1 | 70 | 130 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1247050 | 0.29 | 1250708 | 99.71 | 70 | 120 | |
| 72 | Ge | 868268 | 0.87 | 871265 | 99.66 | 70 | 120 | |
| 115 | In | 8768469 | 0.33 | 8749493 | 100.22 | 70 | 120 | |
| 209 | Bi | 24309971 | 0.85 | 24417425 | 99.56 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:40 | Sample Name | CCB1-170915 |
| Data Batch | 170915.b | Comment | CCB 6020A_W |
| Data File Name | 049_CCB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | MDL S | MDL Aq | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.023 | 6 | 36.7 | 0.4 | 0.3 | |
| 11 | B | 45 | 1.189 | 221 | 13.9 | 10 | 10 | |
| 23 | Na | 45 | 4.755 | 20018 | 2.2 | 50 | 100 | |
| 24 | Mg | 45 | -0.765 | 417 | 2.9 | 50 | 100 | |
| 27 | Al | 45 | -3.144 | 3075 | 4.7 | 50 | 10 | |
| 39 | K | 45 | 0.314 | 27658 | 1.1 | 50 | 100 | |
| 44 | Ca | 45 | 4.599 | 407 | 4.8 | 50 | 100 | |
| 47 | Ti | 45 | 0.006 | 8 | 24.7 | 4 | 3 | |
| 51 | V | 45 | 0.023 | 2025 | 5.3 | 4 | 3 | |
| 52 | Cr | 45 | -0.056 | 449 | 3.5 | 2 | 2 | |
| 55 | Mn | 45 | -0.013 | 248 | 10.3 | 2 | 3 | |
| 56 | Fe | 45 | -0.828 | 10003 | 2.7 | 50 | 50 | |
| 59 | Co | 72 | -0.008 | 167 | 7.2 | 2 | 3 | |
| 60 | Ni | 72 | -0.815 | 4917 | 2.3 | 2 | 3 | |
| 63 | Cu | 72 | -0.020 | 797 | 5.5 | 2 | 2 | |
| 66 | Zn | 72 | 0.063 | 420 | 18.7 | 4 | 2 | |
| 75 | As | 72 | 0.009 | 71 | 4.8 | 2 | 2 | |
| 78 | Se | 72 | 0.128 | 29 | 25.8 | 1 | 2 | |
| 88 | Sr | 115 | 0.007 | 430 | 10.1 | 4 | 3 | |
| 95 | Mo | 115 | 0.026 | 256 | 6.4 | 2 | 2 | |
| 107 | Ag | 115 | 0.009 | 216 | 24.2 | 0.4 | 1 | |
| 111 | Cd | 115 | -0.003 | 3 | 173.2 | 0.4 | 0.3 | |
| 118 | Sn | 115 | 0.022 | 557 | 5.8 | 4 | 3 | |
| 121 | Sb | 115 | 0.039 | 408 | 8.7 | 2 | 0.8 | |
| 137 | Ba | 115 | 0.005 | 81 | 17.1 | 2 | 3 | |
| 205 | Tl | 209 | 0.035 | 1885 | 6.1 | 2 | 0.5 | |
| 208 | Pb | 209 | -0.002 | 1478 | 2.5 | 0.4 | 0.3 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1255377 | 0.46 | 1250708 | 100.37 | 70 | 120 | |
| 72 | Ge | 863247 | 0.08 | 871265 | 99.08 | 70 | 120 | |
| 115 | In | 8796854 | 1.21 | 8749493 | 100.54 | 70 | 120 | |
| 209 | Bi | 24298126 | 0.31 | 24417425 | 99.51 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:51 | Sample Name | CCV2-170915 |
| Data Batch | 170915.b | Comment | CCV 6020A_W |
| Data File Name | 055_CCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 181.438 | 12584 | 0.48 | 200 | 90.7 | 90 | 110 | |
| 11 | B | 45 | 187.902 | 6428 | 1.72 | 200 | 94.0 | 90 | 110 | |
| 23 | Na | 45 | 4636.826 | 5092901 | 0.18 | 5000 | 92.7 | 90 | 110 | |
| 24 | Mg | 45 | 4636.922 | 2617364 | 0.18 | 5000 | 92.7 | 90 | 110 | |
| 27 | Al | 45 | 4923.584 | 1010005 | 0.99 | 5000 | 98.5 | 90 | 110 | |
| 39 | K | 45 | 4740.362 | 2204007 | 0.42 | 5000 | 94.8 | 90 | 110 | |
| 44 | Ca | 45 | 5101.077 | 142319 | 5.05 | 5000 | 102.0 | 90 | 110 | |
| 47 | Ti | 45 | 196.959 | 36804 | 0.67 | 200 | 98.5 | 90 | 110 | |
| 51 | V | 45 | 190.271 | 1236344 | 0.92 | 200 | 95.1 | 90 | 110 | |
| 52 | Cr | 45 | 192.395 | 1540557 | 0.37 | 200 | 96.2 | 90 | 110 | |
| 55 | Mn | 45 | 191.958 | 845497 | 0.23 | 200 | 96.0 | 90 | 110 | |
| 56 | Fe | 45 | 5010.145 | 31490074 | 0.13 | 5000 | 100.2 | 90 | 110 | |
| 59 | Co | 72 | 196.011 | 2623858 | 0.21 | 200 | 98.0 | 90 | 110 | |
| 60 | Ni | 72 | 195.944 | 719700 | 0.89 | 200 | 98.0 | 90 | 110 | |
| 63 | Cu | 72 | 198.174 | 1925626 | 0.91 | 200 | 99.1 | 90 | 110 | |
| 66 | Zn | 72 | 197.094 | 273225 | 0.48 | 200 | 98.5 | 90 | 110 | |
| 75 | As | 72 | 194.546 | 173137 | 0.42 | 200 | 97.3 | 90 | 110 | |
| 78 | Se | 72 | 195.165 | 13069 | 1.06 | 200 | 97.6 | 90 | 110 | |
| 88 | Sr | 115 | 189.830 | 1062559 | 0.06 | 200 | 94.9 | 90 | 110 | |
| 95 | Mo | 115 | 183.414 | 1048554 | 0.26 | 200 | 91.7 | 90 | 110 | |
| 107 | Ag | 115 | 197.285 | 3488890 | 0.20 | 200 | 98.6 | 90 | 110 | |
| 111 | Cd | 115 | 190.862 | 481633 | 0.74 | 200 | 95.4 | 90 | 110 | |
| 118 | Sn | 115 | 189.581 | 1002685 | 0.57 | 200 | 94.8 | 90 | 110 | |
| 121 | Sb | 115 | 196.232 | 1271388 | 0.47 | 200 | 98.1 | 90 | 110 | |
| 137 | Ba | 115 | 191.999 | 453121 | 0.30 | 200 | 96.0 | 90 | 110 | |
| 205 | Tl | 209 | 195.722 | 8202532 | 0.52 | 200 | 97.9 | 90 | 110 | |
| 208 | Pb | 209 | 191.594 | 10537657 | 0.21 | 200 | 95.8 | 90 | 110 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1231366 | 0.74 | 1250708 | 98.45 | 70 | 120 | |
| 72 | Ge | 853985 | 0.18 | 871265 | 98.02 | 70 | 120 | |
| 115 | In | 8616986 | 1.00 | 8749493 | 98.49 | 70 | 120 | |
| 209 | Bi | 23340146 | 1.32 | 24417425 | 95.59 | 70 | 120 | |

# Low Level Calibration Verification (LLCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 11:57 | Sample Name | LCVL2-170915 |
| Data Batch | 170915.b | Comment | LCVL6020A_W |
| Data File Name | 057LCCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.828 | 62 | 9.12 | 1 | 82.8 | 70 | 130 | |
| 11 | B | 45 | 18.219 | 796 | 13.00 | 20 | 91.1 | 70 | 130 | |
| 23 | Na | 45 | 94.857 | 120206 | 1.19 | 100 | 94.9 | 70 | 130 | |
| 24 | Mg | 45 | 89.276 | 52034 | 0.89 | 100 | 89.3 | 70 | 130 | |
| 27 | Al | 45 | 91.219 | 22660 | 1.10 | 100 | 91.2 | 70 | 130 | |
| 39 | K | 45 | 93.080 | 70845 | 1.15 | 100 | 93.1 | 70 | 130 | |
| 44 | Ca | 45 | 95.599 | 2980 | 6.07 | 100 | 95.6 | 70 | 130 | |
| 47 | Ti | 45 | 5.116 | 978 | 5.46 | 5 | 102.3 | 70 | 130 | |
| 51 | V | 45 | 0.957 | 8174 | 0.97 | 1 | 95.7 | 70 | 130 | |
| 52 | Cr | 45 | 4.653 | 38731 | 1.31 | 5 | 93.1 | 70 | 130 | |
| 55 | Mn | 45 | 4.712 | 21386 | 1.23 | 5 | 94.2 | 70 | 130 | |
| 56 | Fe | 45 | 102.598 | 670086 | 0.59 | 100 | 102.6 | 70 | 130 | |
| 59 | Co | 72 | 4.871 | 66355 | 1.33 | 5 | 97.4 | 70 | 130 | |
| 60 | Ni | 72 | 3.994 | 22640 | 2.49 | 5 | 79.9 | 70 | 130 | |
| 63 | Cu | 72 | 4.936 | 49582 | 1.22 | 5 | 98.7 | 70 | 130 | |
| 66 | Zn | 72 | 4.699 | 6927 | 2.28 | 5 | 94.0 | 70 | 130 | |
| 75 | As | 72 | 4.804 | 4395 | 1.22 | 5 | 96.1 | 70 | 130 | |
| 78 | Se | 72 | 4.795 | 345 | 1.80 | 5 | 95.9 | 70 | 130 | |
| 88 | Sr | 115 | 4.564 | 26508 | 1.19 | 5 | 91.3 | 70 | 130 | |
| 95 | Mo | 115 | 4.360 | 25594 | 0.62 | 5 | 87.2 | 70 | 130 | |
| 107 | Ag | 115 | 1.908 | 34566 | 2.59 | 2 | 95.4 | 70 | 130 | |
| 111 | Cd | 115 | 0.943 | 2445 | 2.52 | 1 | 94.3 | 70 | 130 | |
| 118 | Sn | 115 | 4.578 | 25185 | 1.07 | 5 | 91.6 | 70 | 130 | |
| 121 | Sb | 115 | 1.841 | 12353 | 0.34 | 2 | 92.1 | 70 | 130 | |
| 137 | Ba | 115 | 4.667 | 11332 | 0.55 | 5 | 93.3 | 70 | 130 | |
| 205 | Tl | 209 | 0.928 | 40239 | 0.79 | 1 | 92.8 | 70 | 130 | |
| 208 | Pb | 209 | 0.904 | 52536 | 1.24 | 1 | 90.4 | 70 | 130 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1250971 | 0.26 | 1250708 | 100.02 | 70 | 120 | |
| 72 | Ge | 865646 | 0.45 | 871265 | 99.36 | 70 | 120 | |
| 115 | In | 8812559 | 0.79 | 8749493 | 100.72 | 70 | 120 | |
| 209 | Bi | 23933410 | 1.39 | 24417425 | 98.02 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 12:03 | Sample Name | CCB2-170915 |
| Data Batch | 170915.b | Comment | CCB 6020A_W |
| Data File Name | 058_CCB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | MDL S | MDL Aq | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | -0.023 | 2 | 137.8 | 0.4 | 0.3 | |
| 11 | B | 45 | 1.076 | 216 | 9.9 | 10 | 10 | |
| 23 | Na | 45 | 4.021 | 19061 | 1.7 | 50 | 100 | |
| 24 | Mg | 45 | -0.847 | 367 | 9.2 | 50 | 100 | |
| 27 | Al | 45 | -3.081 | 3066 | 4.7 | 50 | 10 | |
| 39 | K | 45 | 1.143 | 27846 | 1.3 | 50 | 100 | |
| 44 | Ca | 45 | 4.190 | 392 | 20.3 | 50 | 100 | |
| 47 | Ti | 45 | -0.017 | 3 | 100.1 | 4 | 3 | |
| 51 | V | 45 | 0.032 | 2070 | 3.4 | 4 | 3 | |
| 52 | Cr | 45 | -0.063 | 388 | 3.9 | 2 | 2 | |
| 55 | Mn | 45 | -0.022 | 206 | 8.3 | 2 | 3 | |
| 56 | Fe | 45 | -0.769 | 10307 | 2.1 | 50 | 50 | |
| 59 | Co | 72 | -0.011 | 132 | 8.1 | 2 | 3 | |
| 60 | Ni | 72 | -0.843 | 4837 | 0.8 | 2 | 3 | |
| 63 | Cu | 72 | -0.035 | 649 | 8.4 | 2 | 2 | |
| 66 | Zn | 72 | 0.033 | 380 | 3.8 | 4 | 2 | |
| 75 | As | 72 | -0.004 | 60 | 2.8 | 2 | 2 | |
| 78 | Se | 72 | 0.092 | 27 | 30.7 | 1 | 2 | |
| 88 | Sr | 115 | 0.004 | 414 | 14.7 | 4 | 3 | |
| 95 | Mo | 115 | 0.010 | 160 | 13.0 | 2 | 2 | |
| 107 | Ag | 115 | 0.006 | 154 | 15.2 | 0.4 | 1 | |
| 111 | Cd | 115 | -0.002 | 4 | 43.4 | 0.4 | 0.3 | |
| 118 | Sn | 115 | -0.007 | 397 | 23.4 | 4 | 3 | |
| 121 | Sb | 115 | 0.004 | 181 | 4.2 | 2 | 0.8 | |
| 137 | Ba | 115 | -0.005 | 57 | 27.0 | 2 | 3 | |
| 205 | Tl | 209 | 0.022 | 1298 | 12.5 | 2 | 0.5 | |
| 208 | Pb | 209 | -0.012 | 894 | 2.7 | 0.4 | 0.3 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1246401 | 0.52 | 1250708 | 99.66 | 70 | 120 | |
| 72 | Ge | 867599 | 0.34 | 871265 | 99.58 | 70 | 120 | |
| 115 | In | 8751818 | 0.07 | 8749493 | 100.03 | 70 | 120 | |
| 209 | Bi | 24080146 | 0.62 | 24417425 | 98.62 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 12:36 | Sample Name | CCV3-170915 |
| Data Batch | 170915.b | Comment | CCV 6020A_W |
| Data File Name | 075_CCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 184.206 | 12950 | 1.04 | 200 | 92.1 | 90 | 110 | |
| 11 | B | 45 | 191.785 | 6646 | 2.67 | 200 | 95.9 | 90 | 110 | |
| 23 | Na | 45 | 4773.292 | 5313747 | 0.60 | 5000 | 95.5 | 90 | 110 | |
| 24 | Mg | 45 | 4663.307 | 2668058 | 0.35 | 5000 | 93.3 | 90 | 110 | |
| 27 | Al | 45 | 4949.428 | 1029164 | 0.90 | 5000 | 99.0 | 90 | 110 | |
| 39 | K | 45 | 4788.420 | 2256407 | 0.75 | 5000 | 95.8 | 90 | 110 | |
| 44 | Ca | 45 | 4605.168 | 130289 | 0.40 | 5000 | 92.1 | 90 | 110 | |
| 47 | Ti | 45 | 195.588 | 37045 | 0.26 | 200 | 97.8 | 90 | 110 | |
| 51 | V | 45 | 191.205 | 1259267 | 0.32 | 200 | 95.6 | 90 | 110 | |
| 52 | Cr | 45 | 193.089 | 1567128 | 0.15 | 200 | 96.5 | 90 | 110 | |
| 55 | Mn | 45 | 194.174 | 866886 | 0.11 | 200 | 97.1 | 90 | 110 | |
| 56 | Fe | 45 | 5061.680 | 32246631 | 0.63 | 5000 | 101.2 | 90 | 110 | |
| 59 | Co | 72 | 198.509 | 2672300 | 0.41 | 200 | 99.3 | 90 | 110 | |
| 60 | Ni | 72 | 197.971 | 731176 | 0.37 | 200 | 99.0 | 90 | 110 | |
| 63 | Cu | 72 | 198.652 | 1941212 | 0.48 | 200 | 99.3 | 90 | 110 | |
| 66 | Zn | 72 | 198.802 | 277154 | 0.53 | 200 | 99.4 | 90 | 110 | |
| 75 | As | 72 | 195.695 | 175140 | 0.50 | 200 | 97.8 | 90 | 110 | |
| 78 | Se | 72 | 198.552 | 13371 | 1.18 | 200 | 99.3 | 90 | 110 | |
| 88 | Sr | 115 | 188.365 | 1075737 | 0.21 | 200 | 94.2 | 90 | 110 | |
| 95 | Mo | 115 | 181.255 | 1057171 | 0.69 | 200 | 90.6 | 90 | 110 | |
| 107 | Ag | 115 | 196.085 | 3537905 | 0.42 | 200 | 98.0 | 90 | 110 | |
| 111 | Cd | 115 | 190.052 | 489310 | 0.51 | 200 | 95.0 | 90 | 110 | |
| 118 | Sn | 115 | 187.776 | 1013255 | 0.41 | 200 | 93.9 | 90 | 110 | |
| 121 | Sb | 115 | 194.667 | 1286798 | 0.21 | 200 | 97.3 | 90 | 110 | |
| 137 | Ba | 115 | 190.479 | 458655 | 0.48 | 200 | 95.2 | 90 | 110 | |
| 205 | Tl | 209 | 193.953 | 8353146 | 0.38 | 200 | 97.0 | 90 | 110 | |
| 208 | Pb | 209 | 189.995 | 10739586 | 0.68 | 200 | 95.0 | 90 | 110 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1248080 | 0.24 | 1250708 | 99.79 | 70 | 120 | |
| 72 | Ge | 858855 | 0.83 | 871265 | 98.58 | 70 | 120 | |
| 115 | In | 8791246 | 0.57 | 8749493 | 100.48 | 70 | 120 | |
| 209 | Bi | 23986312 | 1.41 | 24417425 | 98.23 | 70 | 120 | |

# Low Level Calibration Verification (LLCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 12:42 | Sample Name | LCVL3-170915 |
| Data Batch | 170915.b | Comment | LCVL6020A_W |
| Data File Name | 077LCCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.970 | 73 | 7.51 | 1 | 97.0 | 70 | 130 | |
| 11 | B | 45 | 17.750 | 791 | 6.55 | 20 | 88.8 | 70 | 130 | |
| 23 | Na | 45 | 119.013 | 149203 | 0.70 | 100 | 119.0 | 70 | 130 | |
| 24 | Mg | 45 | 89.942 | 53170 | 1.08 | 100 | 89.9 | 70 | 130 | |
| 27 | Al | 45 | 90.070 | 22743 | 1.67 | 100 | 90.1 | 70 | 130 | |
| 39 | K | 45 | 93.306 | 71971 | 0.61 | 100 | 93.3 | 70 | 130 | |
| 44 | Ca | 45 | 91.113 | 2894 | 7.13 | 100 | 91.1 | 70 | 130 | |
| 47 | Ti | 45 | 4.841 | 939 | 1.82 | 5 | 96.8 | 70 | 130 | |
| 51 | V | 45 | 0.981 | 8452 | 3.00 | 1 | 98.1 | 70 | 130 | |
| 52 | Cr | 45 | 4.654 | 39293 | 2.03 | 5 | 93.1 | 70 | 130 | |
| 55 | Mn | 45 | 4.678 | 21539 | 1.46 | 5 | 93.6 | 70 | 130 | |
| 56 | Fe | 45 | 101.709 | 673968 | 1.16 | 100 | 101.7 | 70 | 130 | |
| 59 | Co | 72 | 4.840 | 66938 | 0.46 | 5 | 96.8 | 70 | 130 | |
| 60 | Ni | 72 | 4.074 | 23282 | 0.84 | 5 | 81.5 | 70 | 130 | |
| 63 | Cu | 72 | 4.954 | 50510 | 0.98 | 5 | 99.1 | 70 | 130 | |
| 66 | Zn | 72 | 4.982 | 7433 | 3.59 | 5 | 99.6 | 70 | 130 | |
| 75 | As | 72 | 4.777 | 4437 | 0.58 | 5 | 95.5 | 70 | 130 | |
| 78 | Se | 72 | 5.318 | 387 | 3.71 | 5 | 106.4 | 70 | 130 | |
| 88 | Sr | 115 | 4.563 | 27050 | 0.54 | 5 | 91.3 | 70 | 130 | |
| 95 | Mo | 115 | 4.341 | 26009 | 1.78 | 5 | 86.8 | 70 | 130 | |
| 107 | Ag | 115 | 1.874 | 34654 | 0.19 | 2 | 93.7 | 70 | 130 | |
| 111 | Cd | 115 | 0.910 | 2407 | 1.57 | 1 | 91.0 | 70 | 130 | |
| 118 | Sn | 115 | 4.597 | 25818 | 1.35 | 5 | 91.9 | 70 | 130 | |
| 121 | Sb | 115 | 1.857 | 12713 | 2.65 | 2 | 92.9 | 70 | 130 | |
| 137 | Ba | 115 | 4.555 | 11290 | 0.63 | 5 | 91.1 | 70 | 130 | |
| 205 | Tl | 209 | 0.926 | 41041 | 1.13 | 1 | 92.6 | 70 | 130 | |
| 208 | Pb | 209 | 0.897 | 53313 | 0.96 | 1 | 89.7 | 70 | 130 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1268963 | 0.23 | 1250708 | 101.46 | 70 | 120 | |
| 72 | Ge | 878724 | 0.95 | 871265 | 100.86 | 70 | 120 | |
| 115 | In | 8995132 | 0.82 | 8749493 | 102.81 | 70 | 120 | |
| 209 | Bi | 24478912 | 1.11 | 24417425 | 100.25 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 12:44 | Sample Name | CCB3-170915 |
| Data Batch | 170915.b | Comment | CCB 6020A_W |
| Data File Name | 078_CCB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | MDL S | MDL Aq | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.003 | 4 | 35.3 | 0.4 | 0.3 | |
| 11 | B | 45 | 1.250 | 228 | 10.8 | 10 | 10 | |
| 23 | Na | 45 | 25.789 | 44412 | 0.3 | 50 | 100 | |
| 24 | Mg | 45 | -0.912 | 339 | 7.9 | 50 | 100 | |
| 27 | Al | 45 | -3.629 | 3036 | 3.4 | 50 | 10 | |
| 39 | K | 45 | 0.566 | 28354 | 1.9 | 50 | 100 | |
| 44 | Ca | 45 | -0.808 | 258 | 7.6 | 50 | 100 | |
| 47 | Ti | 45 | -0.035 | 0 | #DIV/0! | 4 | 3 | |
| 51 | V | 45 | 0.022 | 2061 | 4.3 | 4 | 3 | |
| 52 | Cr | 45 | -0.056 | 459 | 14.8 | 2 | 2 | |
| 55 | Mn | 45 | -0.020 | 222 | 7.7 | 2 | 3 | |
| 56 | Fe | 45 | -1.022 | 8941 | 1.5 | 50 | 50 | |
| 59 | Co | 72 | -0.003 | 234 | 12.9 | 2 | 3 | |
| 60 | Ni | 72 | -0.886 | 4777 | 3.4 | 2 | 3 | |
| 63 | Cu | 72 | -0.023 | 782 | 4.1 | 2 | 2 | |
| 66 | Zn | 72 | 0.060 | 427 | 12.3 | 4 | 2 | |
| 75 | As | 72 | 0.014 | 78 | 16.4 | 2 | 2 | |
| 78 | Se | 72 | 0.085 | 27 | 2.1 | 1 | 2 | |
| 88 | Sr | 115 | -0.003 | 387 | 13.3 | 4 | 3 | |
| 95 | Mo | 115 | 0.021 | 234 | 21.3 | 2 | 2 | |
| 107 | Ag | 115 | 0.011 | 251 | 23.8 | 0.4 | 1 | |
| 111 | Cd | 115 | -0.001 | 9 | 78.1 | 0.4 | 0.3 | |
| 118 | Sn | 115 | 0.001 | 453 | 6.0 | 4 | 3 | |
| 121 | Sb | 115 | 0.025 | 324 | 10.0 | 2 | 0.8 | |
| 137 | Ba | 115 | 0.000 | 71 | 13.5 | 2 | 3 | |
| 205 | Tl | 209 | 0.030 | 1667 | 3.1 | 2 | 0.5 | |
| 208 | Pb | 209 | -0.013 | 866 | 5.3 | 0.4 | 0.3 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1281510 | 0.27 | 1250708 | 102.46 | 70 | 120 | |
| 72 | Ge | 885633 | 0.56 | 871265 | 101.65 | 70 | 120 | |
| 115 | In | 9038963 | 0.15 | 8749493 | 103.31 | 70 | 120 | |
| 209 | Bi | 24649887 | 0.19 | 24417425 | 100.95 | 70 | 120 | |

# Method Blank Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/17 12:46 PM | Sample Name | MB-82354 |
| Data Batch | 170915.b | Comment | MBLK6020A_W |
| Data File Name | 079_LRB.d | Dilution | 1 |

| Mass | Name | IS | Conc (ppb) | CPS | %RSD | High Limit | Flag |
|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.003 | 4 | 93.26 | | |
| 11 | B | 45 | 3.904 | 320 | 16.17 | | |
| 23 | Na | 45 | 29.317 | 48517 | 0.13 | | |
| 24 | Mg | 45 | 1.410 | 1706 | 6.09 | | |
| 27 | Al | 45 | 6.411 | 5180 | 4.90 | | |
| 39 | K | 45 | 2.024 | 29102 | 0.76 | | |
| 44 | Ca | 45 | 22.828 | 945 | 3.78 | | |
| 47 | Ti | 45 | 0.033 | 13 | 25.01 | | |
| 51 | V | 45 | 0.048 | 2241 | 7.67 | | |
| 52 | Cr | 45 | -0.041 | 579 | 10.87 | | |
| 55 | Mn | 45 | -0.004 | 294 | 7.19 | | |
| 56 | Fe | 45 | -0.199 | 14350 | 1.17 | | |
| 59 | Co | 72 | -0.005 | 216 | 3.89 | | |
| 60 | Ni | 72 | -0.841 | 4943 | 5.22 | | |
| 63 | Cu | 72 | -0.003 | 989 | 7.15 | | |
| 66 | Zn | 72 | 1.284 | 2181 | 5.04 | | |
| 75 | As | 72 | 0.010 | 74 | 9.56 | | |
| 78 | Se | 72 | 0.019 | 22 | 35.64 | | |
| 88 | Sr | 115 | 0.124 | 1142 | 2.36 | | |
| 95 | Mo | 115 | 0.024 | 256 | 7.18 | | |
| 107 | Ag | 115 | 0.012 | 278 | 12.02 | | |
| 111 | Cd | 115 | -0.002 | 6 | 91.64 | | |
| 118 | Sn | 115 | 0.013 | 523 | 15.46 | | |
| 121 | Sb | 115 | 0.028 | 352 | 4.86 | | |
| 137 | Ba | 115 | 0.024 | 131 | 7.34 | | |
| 205 | Tl | 209 | 0.024 | 1445 | 2.24 | | |
| 208 | Pb | 209 | -0.009 | 1110 | 12.30 | | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1283712 | 0.37 | 1250708 | 102.64 | 70 | 120 | |
| 72 | Ge | 884718 | 0.44 | 871265 | 101.54 | 70 | 120 | |
| 115 | In | 9128722 | 0.74 | 8749493 | 104.33 | 70 | 120 | |
| 209 | Bi | 25067441 | 1.07 | 24417425 | 102.66 | 70 | 120 | |

# Laboratory Control Sample (LCS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 12:48 | Sample Name | LCS-82354 |
| Data Batch | 170915.b | Comment | LCS 6020A_W |
| Data File Name | 080_LFB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 190.452 | 13336 | 1.46 | 200 | 95.2 | 80 | 120 | |
| 11 | B | 45 | 195.319 | 6738 | 3.14 | 200 | 97.7 | 80 | 120 | |
| 23 | Na | 45 | 4658.033 | 5165137 | 1.47 | 5000 | 93.2 | 80 | 120 | |
| 24 | Mg | 45 | 4596.806 | 2619537 | 0.71 | 5000 | 91.9 | 80 | 120 | |
| 27 | Al | 45 | 4983.419 | 1032071 | 0.70 | 5000 | 99.7 | 80 | 120 | |
| 39 | K | 45 | 4655.975 | 2186003 | 0.90 | 5000 | 93.1 | 80 | 120 | |
| 44 | Ca | 45 | 4564.881 | 128638 | 0.60 | 5000 | 91.3 | 80 | 120 | |
| 47 | Ti | 45 | 197.297 | 37220 | 1.19 | 200 | 98.6 | 80 | 120 | |
| 51 | V | 45 | 192.996 | 1265980 | 0.26 | 200 | 96.5 | 80 | 120 | |
| 52 | Cr | 45 | 195.103 | 1577150 | 0.43 | 200 | 97.6 | 80 | 120 | |
| 55 | Mn | 45 | 194.787 | 866142 | 0.82 | 200 | 97.4 | 80 | 120 | |
| 56 | Fe | 45 | 5055.539 | 32078908 | 0.40 | 5000 | 101.1 | 80 | 120 | |
| 59 | Co | 72 | 201.845 | 2688611 | 0.27 | 200 | 100.9 | 80 | 120 | |
| 60 | Ni | 72 | 200.694 | 733309 | 0.40 | 200 | 100.3 | 80 | 120 | |
| 63 | Cu | 72 | 203.399 | 1966594 | 0.15 | 200 | 101.7 | 80 | 120 | |
| 66 | Zn | 72 | 201.978 | 278606 | 0.45 | 200 | 101.0 | 80 | 120 | |
| 75 | As | 72 | 199.249 | 176445 | 0.56 | 200 | 99.6 | 80 | 120 | |
| 78 | Se | 72 | 198.817 | 13248 | 1.08 | 200 | 99.4 | 80 | 120 | |
| 88 | Sr | 115 | 191.472 | 1083657 | 0.68 | 200 | 95.7 | 80 | 120 | |
| 95 | Mo | 115 | 184.231 | 1064909 | 0.63 | 200 | 92.1 | 80 | 120 | |
| 107 | Ag | 115 | 198.467 | 3548722 | 0.53 | 200 | 99.2 | 80 | 120 | |
| 111 | Cd | 115 | 193.834 | 494549 | 0.61 | 200 | 96.9 | 80 | 120 | |
| 118 | Sn | 115 | 190.286 | 1017552 | 0.12 | 200 | 95.1 | 80 | 120 | |
| 121 | Sb | 115 | 196.596 | 1287866 | 0.11 | 200 | 98.3 | 80 | 120 | |
| 137 | Ba | 115 | 193.061 | 460694 | 0.10 | 200 | 96.5 | 80 | 120 | |
| 205 | Tl | 209 | 195.903 | 8460312 | 0.26 | 200 | 98.0 | 80 | 120 | |
| 208 | Pb | 209 | 191.307 | 10842401 | 0.52 | 200 | 95.7 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1243105 | 0.35 | 1250708 | 99.39 | 70 | 120 | |
| 72 | Ge | 849771 | 0.25 | 871265 | 97.53 | 70 | 120 | |
| 115 | In | 8712117 | 0.23 | 8749493 | 99.57 | 70 | 120 | |
| 209 | Bi | 24048774 | 0.72 | 24417425 | 98.49 | 70 | 120 | |

# Laboratory Control Sample (LCS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 12:50 | Sample Name | LCSD-82354 |
| Data Batch | 170915.b | Comment | LCSD6020A_W |
| Data File Name | 081_LFB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 187.231 | 13196 | 0.94 | 200 | 93.6 | 80 | 120 | |
| 11 | B | 45 | 196.409 | 6819 | 1.47 | 200 | 98.2 | 80 | 120 | |
| 23 | Na | 45 | 4840.461 | 5401999 | 0.59 | 5000 | 96.8 | 80 | 120 | |
| 24 | Mg | 45 | 4765.561 | 2733496 | 0.11 | 5000 | 95.3 | 80 | 120 | |
| 27 | Al | 45 | 4929.519 | 1027673 | 0.90 | 5000 | 98.6 | 80 | 120 | |
| 39 | K | 45 | 4844.718 | 2288499 | 0.68 | 5000 | 96.9 | 80 | 120 | |
| 44 | Ca | 45 | 4679.556 | 132734 | 1.38 | 5000 | 93.6 | 80 | 120 | |
| 47 | Ti | 45 | 191.778 | 36418 | 0.89 | 200 | 95.9 | 80 | 120 | |
| 51 | V | 45 | 188.837 | 1246871 | 0.56 | 200 | 94.4 | 80 | 120 | |
| 52 | Cr | 45 | 191.389 | 1557300 | 0.14 | 200 | 95.7 | 80 | 120 | |
| 55 | Mn | 45 | 191.375 | 856565 | 0.38 | 200 | 95.7 | 80 | 120 | |
| 56 | Fe | 45 | 4979.224 | 31803532 | 0.59 | 5000 | 99.6 | 80 | 120 | |
| 59 | Co | 72 | 198.819 | 2652355 | 0.12 | 200 | 99.4 | 80 | 120 | |
| 60 | Ni | 72 | 198.969 | 728168 | 0.78 | 200 | 99.5 | 80 | 120 | |
| 63 | Cu | 72 | 200.901 | 1945398 | 0.77 | 200 | 100.5 | 80 | 120 | |
| 66 | Zn | 72 | 200.937 | 277595 | 0.48 | 200 | 100.5 | 80 | 120 | |
| 75 | As | 72 | 196.164 | 173985 | 0.58 | 200 | 98.1 | 80 | 120 | |
| 78 | Se | 72 | 199.058 | 13284 | 0.44 | 200 | 99.5 | 80 | 120 | |
| 88 | Sr | 115 | 186.890 | 1068449 | 0.98 | 200 | 93.4 | 80 | 120 | |
| 95 | Mo | 115 | 180.508 | 1053974 | 0.07 | 200 | 90.3 | 80 | 120 | |
| 107 | Ag | 115 | 195.805 | 3536654 | 0.31 | 200 | 97.9 | 80 | 120 | |
| 111 | Cd | 115 | 190.323 | 490523 | 0.65 | 200 | 95.2 | 80 | 120 | |
| 118 | Sn | 115 | 186.602 | 1007981 | 0.25 | 200 | 93.3 | 80 | 120 | |
| 121 | Sb | 115 | 192.918 | 1276593 | 0.47 | 200 | 96.5 | 80 | 120 | |
| 137 | Ba | 115 | 188.184 | 453616 | 0.28 | 200 | 94.1 | 80 | 120 | |
| 205 | Tl | 209 | 196.210 | 8450736 | 0.55 | 200 | 98.1 | 80 | 120 | |
| 208 | Pb | 209 | 189.085 | 10687596 | 0.32 | 200 | 94.5 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1251318 | 0.79 | 1250708 | 100.05 | 70 | 120 | |
| 72 | Ge | 851096 | 0.66 | 871265 | 97.69 | 70 | 120 | |
| 115 | In | 8800537 | 0.29 | 8749493 | 100.58 | 70 | 120 | |
| 209 | Bi | 23983768 | 0.56 | 24417425 | 98.22 | 70 | 120 | |

# Dilution Sample (Dil) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 12:56 | Sample Name | 1709087-01A SD |
| Data Batch | 170915.b | Comment | SD 6020A_W |
| Data File Name | 084_SD.d | Dilution | 5 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Value | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.003 | 4 | 81.04 | 0.0 | 180.6 | 110 | 90 | |
| 11 | B | 45 | 397.465 | 13922 | 0.62 | 1864.4 | 106.6 | 110 | 90 | Good |
| 23 | Na | 45 | 14288.360 | 16277084 | 0.45 | 69006.5 | 103.5 | 110 | 90 | Good |
| 24 | Mg | 45 | 7582.302 | 4446825 | 0.35 | 36709.5 | 103.3 | 110 | 90 | Good |
| 27 | Al | 45 | 33.774 | 10976 | 3.30 | 168.0 | 100.5 | 110 | 90 | Good |
| 39 | K | 45 | 1790.636 | 882584 | 0.28 | 8709.6 | 102.8 | 110 | 90 | Good |
| 44 | Ca | 45 | 21680.417 | 627793 | 0.52 | 105556.6 | 102.7 | 110 | 90 | Good |
| 47 | Ti | 45 | 0.222 | 50 | 53.34 | 1.3 | 86.2 | 110 | 90 | |
| 51 | V | 45 | 0.338 | 4191 | 1.40 | 1.3 | 131.7 | 110 | 90 | |
| 52 | Cr | 45 | -0.012 | 821 | 10.47 | 0.1 | -54.2 | 110 | 90 | |
| 55 | Mn | 45 | 2.405 | 11317 | 1.05 | 11.7 | 102.8 | 110 | 90 | Good |
| 56 | Fe | 45 | 10.454 | 83849 | 1.21 | 53.7 | 97.4 | 110 | 90 | Good |
| 59 | Co | 72 | 0.023 | 599 | 6.96 | 0.2 | 74.8 | 110 | 90 | |
| 60 | Ni | 72 | -0.085 | 7780 | 2.75 | 3.0 | -14.1 | 110 | 90 | |
| 63 | Cu | 72 | 0.116 | 2178 | 3.10 | 0.6 | 93.0 | 110 | 90 | Good |
| 66 | Zn | 72 | 0.916 | 1652 | 6.05 | 3.7 | 123.1 | 110 | 90 | |
| 75 | As | 72 | 0.196 | 245 | 5.98 | 1.0 | 94.9 | 110 | 90 | Good |
| 78 | Se | 72 | 0.095 | 27 | 34.06 | 0.8 | 59.6 | 110 | 90 | |
| 88 | Sr | 115 | 282.352 | 1650917 | 0.39 | 1455.7 | 97.0 | 110 | 90 | Good |
| 95 | Mo | 115 | 0.573 | 3528 | 0.38 | 2.8 | 102.8 | 110 | 90 | Good |
| 107 | Ag | 115 | 0.020 | 424 | 8.83 | 0.0 | 245.4 | 110 | 90 | |
| 111 | Cd | 115 | 0.010 | 37 | 47.23 | 0.0 | 184.5 | 110 | 90 | |
| 118 | Sn | 115 | 0.012 | 514 | 8.10 | 0.1 | 47.8 | 110 | 90 | |
| 121 | Sb | 115 | 0.067 | 608 | 4.79 | 0.3 | 131.3 | 110 | 90 | |
| 137 | Ba | 115 | 9.675 | 23922 | 0.67 | 47.8 | 101.1 | 110 | 90 | Good |
| 205 | Tl | 209 | 0.042 | 2162 | 6.80 | 0.1 | 241.9 | 110 | 90 | |
| 208 | Pb | 209 | 0.205 | 13110 | 0.68 | 1.0 | 98.4 | 110 | 90 | Good |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1279526 | 0.46 | 1250708 | 102.30 | 70 | 120 | |
| 72 | Ge | 883830 | 0.40 | 871265 | 101.44 | 70 | 120 | |
| 115 | In | 9001719 | 0.41 | 8749493 | 102.88 | 70 | 120 | |
| 209 | Bi | 23918638 | 0.57 | 24417425 | 97.96 | 70 | 120 | |

# Sample Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/17 1:05 PM | Sample Name | 1709100-01B |
| Data Batch | 170915.b | Comment | SAMP6020A_W |
| Data File Name | 089_WS.d | Dilution | 1 |

| Mass | Name | IS | Conc (ppb) | CPS | %RSD | High Limit | Flag |
|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.062 | 8 | 21.65 | 2000 | |
| 11 | B | 45 | 4032.754 | 130413 | 1.86 | 2000 | OUTCAL |
| 23 | Na | 45 | 1668917.858 | 1774728107 | 1.43 | 25000 | OUTCAL |
| 24 | Mg | 45 | 141349.424 | 77436321 | 1.00 | 25000 | OUTCAL |
| 27 | Al | 45 | 33.397 | 10180 | 1.30 | 10000 | >RL |
| 39 | K | 45 | 12706.649 | 5691796 | 0.65 | 25000 | >RL |
| 44 | Ca | 45 | 570618.161 | 15431524 | 1.44 | 10000 | OUTCAL |
| 47 | Ti | 45 | 0.351 | 70 | 45.92 | 2000 | |
| 51 | V | 45 | 104.517 | 660132 | 0.94 | 2000 | >RL |
| 52 | Cr | 45 | 2.481 | 20137 | 2.16 | 2000 | J |
| 55 | Mn | 45 | 2396.157 | 10243193 | 0.59 | 2000 | OUTCAL |
| 56 | Fe | 45 | 9785.259 | 59696087 | 0.27 | 10000 | >RL |
| 59 | Co | 72 | 14.611 | 168804 | 1.37 | 2000 | >RL |
| 60 | Ni | 72 | 6.373 | 26700 | 2.10 | 2000 | J |
| 63 | Cu | 72 | 0.520 | 5201 | 2.61 | 2000 | |
| 66 | Zn | 72 | 3.132 | 4019 | 4.36 | 2000 | J |
| 75 | As | 72 | 163.281 | 125257 | 1.17 | 2000 | >RL |
| 78 | Se | 72 | 0.520 | 47 | 24.50 | 2000 | |
| 88 | Sr | 115 | 8715.185 | 41993694 | 0.57 | 2000 | OUTCAL |
| 95 | Mo | 115 | 5.339 | 26369 | 2.12 | 2000 | >RL |
| 107 | Ag | 115 | 0.022 | 383 | 4.60 | 500 | |
| 111 | Cd | 115 | 0.008 | 27 | 50.01 | 2000 | |
| 118 | Sn | 115 | 0.099 | 820 | 4.22 | 2000 | |
| 121 | Sb | 115 | 0.107 | 724 | 5.07 | 500 | |
| 137 | Ba | 115 | 59.531 | 121027 | 0.77 | 2000 | >RL |
| 205 | Tl | 209 | 0.016 | 711 | 5.47 | 2000 | |
| 208 | Pb | 209 | 0.245 | 10597 | 1.40 | 2000 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1195456 | 0.74 | 1250708 | 95.58 | 70 | 120 | |
| 72 | Ge | 736066 | 0.64 | 871265 | 84.48 | 70 | 120 | |
| 115 | In | 7420236 | 0.77 | 8749493 | 84.81 | 70 | 120 | |
| 209 | Bi | 16533642 | 1.12 | 24417425 | 67.71 | 70 | 120 | IS Fail |

# Post Digestion Spike Sample (PDS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:15 | Sample Name | 1709087-01A PDS |
| Data Batch | 170915.b | Comment | PDS 6020A_W |
| Data File Name | 094_PDS.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Conc | Spk Amt | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 177.283 | 12002 | 1.00 | 0.0 | 200 | 88.6 | 75 | 125 | |
| 11 | B | 45 | 1987.245 | 64698 | 0.41 | 1864.4 | 200 | 61.4 | 75 | 125 | Fail |
| 23 | Na | 45 | 69313.152 | 74120388 | 0.86 | 69006.5 | 5000 | 6.1 | 75 | 125 | Fail |
| 24 | Mg | 45 | 39000.831 | 21482935 | 1.07 | 36709.5 | 5000 | 45.8 | 75 | 125 | Fail |
| 27 | Al | 45 | 4833.891 | 968096 | 0.82 | 168.0 | 5000 | 93.3 | 75 | 125 | |
| 39 | K | 45 | 13347.249 | 6009959 | 0.45 | 8709.6 | 5000 | 92.8 | 75 | 125 | |
| 44 | Ca | 45 | ######## | 2830753 | 0.21 | 105556.6 | 5000 | -29.0 | 75 | 125 | Fail |
| 47 | Ti | 45 | 195.634 | 35684 | 0.15 | 1.3 | 200 | 97.2 | 75 | 125 | |
| 51 | V | 45 | 195.449 | 1239605 | 0.56 | 1.3 | 200 | 97.1 | 75 | 125 | |
| 52 | Cr | 45 | 194.768 | 1522348 | 0.65 | 0.1 | 200 | 97.3 | 75 | 125 | |
| 55 | Mn | 45 | 201.813 | 867669 | 0.59 | 11.7 | 200 | 95.1 | 75 | 125 | |
| 56 | Fe | 45 | 4810.934 | 29518449 | 1.09 | 53.7 | 5000 | 95.1 | 75 | 125 | |
| 59 | Co | 72 | 197.578 | 2496244 | 0.54 | 0.2 | 200 | 98.7 | 75 | 125 | |
| 60 | Ni | 72 | 195.810 | 678797 | 0.45 | 3.0 | 200 | 96.4 | 75 | 125 | |
| 63 | Cu | 72 | 191.315 | 1754543 | 0.58 | 0.6 | 200 | 95.3 | 75 | 125 | |
| 66 | Zn | 72 | 194.459 | 254422 | 0.33 | 3.7 | 200 | 95.4 | 75 | 125 | |
| 75 | As | 72 | 203.213 | 170684 | 0.24 | 1.0 | 200 | 101.1 | 75 | 125 | |
| 78 | Se | 72 | 205.103 | 12962 | 2.38 | 0.8 | 200 | 102.2 | 75 | 125 | |
| 88 | Sr | 115 | 1598.153 | 8699415 | 1.34 | 1455.7 | 200 | 71.2 | 75 | 125 | Fail |
| 95 | Mo | 115 | 186.920 | 1039517 | 0.54 | 2.8 | 200 | 92.1 | 75 | 125 | |
| 107 | Ag | 115 | 185.856 | 3197319 | 0.29 | 0.0 | 200 | 92.9 | 75 | 125 | |
| 111 | Cd | 115 | 186.882 | 458750 | 0.21 | 0.0 | 200 | 93.4 | 75 | 125 | |
| 118 | Sn | 115 | 192.924 | 992574 | 0.46 | 0.1 | 200 | 96.4 | 75 | 125 | |
| 121 | Sb | 115 | 185.794 | 1171005 | 0.89 | 0.3 | 200 | 92.8 | 75 | 125 | |
| 137 | Ba | 115 | 238.000 | 546399 | 0.75 | 47.8 | 200 | 95.1 | 75 | 125 | |
| 205 | Tl | 209 | 197.908 | 7898996 | 0.44 | 0.1 | 200 | 98.9 | 75 | 125 | |
| 208 | Pb | 209 | 191.394 | 10025283 | 0.57 | 1.0 | 200 | 95.2 | 75 | 125 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1201989 | 0.79 | 1250708 | 96.10 | 70 | 120 | |
| 72 | Ge | 806009 | 0.64 | 871265 | 92.51 | 70 | 120 | |
| 115 | In | 8382044 | 0.41 | 8749493 | 95.80 | 70 | 120 | |
| 209 | Bi | 22226565 | 0.97 | 24417425 | 91.03 | 70 | 120 | |

# Matrix Spike Sample (MS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:17 | Sample Name | 1709087-01A MS |
| Data Batch | 170915.b | Comment | MS 6020A_W |
| Data File Name | 095_MSW.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Conc | Spk Amt | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 177.009 | 11891 | 1.67 | 0.0 | 200 | 88.5 | 80 | 120 | |
| 11 | B | 45 | 2035.512 | 65748 | 0.46 | 1864.4 | 200 | 85.6 | 80 | 120 | |
| 23 | Na | 45 | 72003.630 | 76399079 | 0.61 | 69006.5 | 5000 | 59.9 | 80 | 120 | Fail |
| 24 | Mg | 45 | 40902.892 | 22355338 | 1.19 | 36709.5 | 5000 | 83.9 | 80 | 120 | |
| 27 | Al | 45 | 4874.998 | 968676 | 0.68 | 168.0 | 5000 | 94.1 | 80 | 120 | |
| 39 | K | 45 | 13871.231 | 6196657 | 1.99 | 8709.6 | 5000 | 103.2 | 80 | 120 | |
| 44 | Ca | 45 | ######## | 2963028 | 0.41 | 105556.6 | 5000 | 85.3 | 80 | 120 | |
| 47 | Ti | 45 | 199.479 | 36106 | 1.64 | 1.3 | 200 | 99.1 | 80 | 120 | |
| 51 | V | 45 | 193.525 | 1217922 | 0.79 | 1.3 | 200 | 96.1 | 80 | 120 | |
| 52 | Cr | 45 | 190.144 | 1474738 | 0.92 | 0.1 | 200 | 95.0 | 80 | 120 | |
| 55 | Mn | 45 | 202.479 | 863814 | 0.77 | 11.7 | 200 | 95.4 | 80 | 120 | |
| 56 | Fe | 45 | 4977.826 | 30303548 | 0.27 | 53.7 | 5000 | 98.5 | 80 | 120 | |
| 59 | Co | 72 | 196.836 | 2471885 | 0.21 | 0.2 | 200 | 98.3 | 80 | 120 | |
| 60 | Ni | 72 | 197.840 | 681628 | 0.24 | 3.0 | 200 | 97.4 | 80 | 120 | |
| 63 | Cu | 72 | 192.856 | 1758016 | 0.32 | 0.6 | 200 | 96.1 | 80 | 120 | |
| 66 | Zn | 72 | 192.934 | 250917 | 0.70 | 3.7 | 200 | 94.6 | 80 | 120 | |
| 75 | As | 72 | 203.791 | 170142 | 0.44 | 1.0 | 200 | 101.4 | 80 | 120 | |
| 78 | Se | 72 | 205.627 | 12917 | 0.68 | 0.8 | 200 | 102.4 | 80 | 120 | |
| 88 | Sr | 115 | 1666.840 | 9022461 | 1.04 | 1455.7 | 200 | 105.6 | 80 | 120 | |
| 95 | Mo | 115 | 188.485 | 1042336 | 0.33 | 2.8 | 200 | 92.8 | 80 | 120 | |
| 107 | Ag | 115 | 186.523 | 3190830 | 0.32 | 0.0 | 200 | 93.2 | 80 | 120 | |
| 111 | Cd | 115 | 186.566 | 455409 | 0.94 | 0.0 | 200 | 93.3 | 80 | 120 | |
| 118 | Sn | 115 | 190.320 | 973684 | 0.53 | 0.1 | 200 | 95.1 | 80 | 120 | |
| 121 | Sb | 115 | 198.973 | 1247017 | 0.41 | 0.3 | 200 | 99.4 | 80 | 120 | |
| 137 | Ba | 115 | 239.259 | 546208 | 0.33 | 47.8 | 200 | 95.7 | 80 | 120 | |
| 205 | Tl | 209 | 200.924 | 7991407 | 1.25 | 0.1 | 200 | 100.4 | 80 | 120 | |
| 208 | Pb | 209 | 193.476 | 10098521 | 0.14 | 1.0 | 200 | 96.2 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1192665 | 0.85 | 1250708 | 95.36 | 70 | 120 | |
| 72 | Ge | 801150 | 0.02 | 871265 | 91.95 | 70 | 120 | |
| 115 | In | 8335006 | 0.12 | 8749493 | 95.26 | 70 | 120 | |
| 209 | Bi | 22148302 | 0.89 | 24417425 | 90.71 | 70 | 120 | |

# Matrix Spike Sample (MS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:19 | Sample Name | 1709087-01A MSD |
| Data Batch | 170915.b | Comment | MSD 6020A_W |
| Data File Name | 096_MSW.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Conc | Spk Amt | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 178.188 | 11749 | 0.43 | 0.0 | 200 | 89.1 | 80 | 120 | |
| 11 | B | 45 | 2032.110 | 64424 | 0.51 | 1864.4 | 200 | 83.9 | 80 | 120 | |
| 23 | Na | 45 | 72627.548 | 75631073 | 1.20 | 69006.5 | 5000 | 72.4 | 80 | 120 | Fail |
| 24 | Mg | 45 | 41133.859 | 22066160 | 1.18 | 36709.5 | 5000 | 88.5 | 80 | 120 | |
| 27 | Al | 45 | 4948.637 | 965065 | 1.03 | 168.0 | 5000 | 95.6 | 80 | 120 | |
| 39 | K | 45 | 13797.233 | 6049446 | 1.35 | 8709.6 | 5000 | 101.8 | 80 | 120 | |
| 44 | Ca | 45 | ######## | 2902522 | 0.91 | 105556.6 | 5000 | 81.0 | 80 | 120 | |
| 47 | Ti | 45 | 201.062 | 35716 | 1.35 | 1.3 | 200 | 99.9 | 80 | 120 | |
| 51 | V | 45 | 195.828 | 1209543 | 0.75 | 1.3 | 200 | 97.3 | 80 | 120 | |
| 52 | Cr | 45 | 191.343 | 1456467 | 0.52 | 0.1 | 200 | 95.6 | 80 | 120 | |
| 55 | Mn | 45 | 204.613 | 856693 | 0.45 | 11.7 | 200 | 96.5 | 80 | 120 | |
| 56 | Fe | 45 | 5038.206 | 30103004 | 1.31 | 53.7 | 5000 | 99.7 | 80 | 120 | |
| 59 | Co | 72 | 197.855 | 2454915 | 0.68 | 0.2 | 200 | 98.9 | 80 | 120 | |
| 60 | Ni | 72 | 197.957 | 673857 | 0.05 | 3.0 | 200 | 97.5 | 80 | 120 | |
| 63 | Cu | 72 | 192.912 | 1737458 | 0.13 | 0.6 | 200 | 96.1 | 80 | 120 | |
| 66 | Zn | 72 | 194.697 | 250175 | 1.03 | 3.7 | 200 | 95.5 | 80 | 120 | |
| 75 | As | 72 | 204.967 | 169074 | 0.19 | 1.0 | 200 | 102.0 | 80 | 120 | |
| 78 | Se | 72 | 203.504 | 12630 | 1.29 | 0.8 | 200 | 101.4 | 80 | 120 | |
| 88 | Sr | 115 | 1673.634 | 8845706 | 0.76 | 1455.7 | 200 | 109.0 | 80 | 120 | |
| 95 | Mo | 115 | 192.069 | 1037123 | 0.81 | 2.8 | 200 | 94.6 | 80 | 120 | |
| 107 | Ag | 115 | 191.004 | 3190496 | 0.56 | 0.0 | 200 | 95.5 | 80 | 120 | |
| 111 | Cd | 115 | 189.881 | 452576 | 1.41 | 0.0 | 200 | 94.9 | 80 | 120 | |
| 118 | Sn | 115 | 193.270 | 965470 | 0.21 | 0.1 | 200 | 96.6 | 80 | 120 | |
| 121 | Sb | 115 | 199.926 | 1223461 | 0.37 | 0.3 | 200 | 99.8 | 80 | 120 | |
| 137 | Ba | 115 | 242.541 | 540650 | 0.64 | 47.8 | 200 | 97.3 | 80 | 120 | |
| 205 | Tl | 209 | 202.527 | 7946969 | 0.60 | 0.1 | 200 | 101.2 | 80 | 120 | |
| 208 | Pb | 209 | 194.433 | 10012463 | 0.21 | 1.0 | 200 | 96.7 | 80 | 120 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1170531 | 0.69 | 1250708 | 93.59 | 70 | 120 | |
| 72 | Ge | 791565 | 0.48 | 871265 | 90.85 | 70 | 120 | |
| 115 | In | 8138614 | 0.18 | 8749493 | 93.02 | 70 | 120 | |
| 209 | Bi | 21850720 | 0.41 | 24417425 | 89.49 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:24 | Sample Name | CCV4-170915 |
| Data Batch | 170915.b | Comment | CCV 6020A_W |
| Data File Name | 099_CCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 183.346 | 12204 | 0.67 | 200 | 91.7 | 90 | 110 | |
| 11 | B | 45 | 208.019 | 6810 | 2.83 | 200 | 104.0 | 90 | 110 | |
| 23 | Na | 45 | 4764.114 | 5021300 | 0.22 | 5000 | 95.3 | 90 | 110 | |
| 24 | Mg | 45 | 4617.933 | 2501487 | 0.19 | 5000 | 92.4 | 90 | 110 | |
| 27 | Al | 45 | 4932.059 | 970977 | 0.59 | 5000 | 98.6 | 90 | 110 | |
| 39 | K | 45 | 4761.149 | 2124287 | 0.78 | 5000 | 95.2 | 90 | 110 | |
| 44 | Ca | 45 | 4611.525 | 123525 | 0.80 | 5000 | 92.2 | 90 | 110 | |
| 47 | Ti | 45 | 195.031 | 34974 | 0.21 | 200 | 97.5 | 90 | 110 | |
| 51 | V | 45 | 189.288 | 1180319 | 0.47 | 200 | 94.6 | 90 | 110 | |
| 52 | Cr | 45 | 192.261 | 1477377 | 0.32 | 200 | 96.1 | 90 | 110 | |
| 55 | Mn | 45 | 193.587 | 818274 | 0.66 | 200 | 96.8 | 90 | 110 | |
| 56 | Fe | 45 | 5063.581 | 30542191 | 1.05 | 5000 | 101.3 | 90 | 110 | |
| 59 | Co | 72 | 196.675 | 2522209 | 0.40 | 200 | 98.3 | 90 | 110 | |
| 60 | Ni | 72 | 197.062 | 693367 | 0.28 | 200 | 98.5 | 90 | 110 | |
| 63 | Cu | 72 | 197.644 | 1839825 | 0.43 | 200 | 98.8 | 90 | 110 | |
| 66 | Zn | 72 | 197.602 | 262430 | 0.82 | 200 | 98.8 | 90 | 110 | |
| 75 | As | 72 | 194.749 | 166044 | 0.96 | 200 | 97.4 | 90 | 110 | |
| 78 | Se | 72 | 198.853 | 12756 | 1.57 | 200 | 99.4 | 90 | 110 | |
| 88 | Sr | 115 | 186.834 | 1037079 | 0.25 | 200 | 93.4 | 90 | 110 | |
| 95 | Mo | 115 | 179.402 | 1017045 | 0.81 | 200 | 89.7 | 90 | 110 | Fail |
| 107 | Ag | 115 | 195.193 | 3423088 | 0.49 | 200 | 97.6 | 90 | 110 | |
| 111 | Cd | 115 | 190.845 | 477570 | 0.42 | 200 | 95.4 | 90 | 110 | |
| 118 | Sn | 115 | 187.494 | 983352 | 0.26 | 200 | 93.7 | 90 | 110 | |
| 121 | Sb | 115 | 194.054 | 1246778 | 0.17 | 200 | 97.0 | 90 | 110 | |
| 137 | Ba | 115 | 189.550 | 443621 | 0.22 | 200 | 94.8 | 90 | 110 | |
| 205 | Tl | 209 | 194.381 | 8316027 | 1.37 | 200 | 97.2 | 90 | 110 | |
| 208 | Pb | 209 | 188.186 | 10566685 | 0.26 | 200 | 94.1 | 90 | 110 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1181655 | 0.07 | 1250708 | 94.48 | 70 | 120 | |
| 72 | Ge | 818136 | 0.39 | 871265 | 93.90 | 70 | 120 | |
| 115 | In | 8544640 | 0.27 | 8749493 | 97.66 | 70 | 120 | |
| 209 | Bi | 23826392 | 0.91 | 24417425 | 97.58 | 70 | 120 | |

# Low Level Calibration Verification (LLCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:46 | Sample Name | LCVL4-170915 |
| Data Batch | 170915.b | Comment | LCVL6020A_W |
| Data File Name | 104LCCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.847 | 59 | 1.69 | 1 | 84.7 | 70 | 130 | |
| 11 | B | 45 | 27.132 | 1017 | 6.94 | 20 | 135.7 | 70 | 130 | Fail |
| 23 | Na | 45 | 138.439 | 156375 | 0.46 | 100 | 138.4 | 70 | 130 | Fail |
| 24 | Mg | 45 | 90.443 | 48851 | 0.72 | 100 | 90.4 | 70 | 130 | |
| 27 | Al | 45 | 90.597 | 20884 | 1.78 | 100 | 90.6 | 70 | 130 | |
| 39 | K | 45 | 88.932 | 63873 | 1.40 | 100 | 88.9 | 70 | 130 | |
| 44 | Ca | 45 | 88.800 | 2584 | 4.37 | 100 | 88.8 | 70 | 130 | |
| 47 | Ti | 45 | 4.923 | 872 | 7.31 | 5 | 98.5 | 70 | 130 | |
| 51 | V | 45 | 0.942 | 7485 | 2.82 | 1 | 94.2 | 70 | 130 | |
| 52 | Cr | 45 | 4.731 | 36491 | 1.52 | 5 | 94.6 | 70 | 130 | |
| 55 | Mn | 45 | 4.772 | 20070 | 1.62 | 5 | 95.4 | 70 | 130 | |
| 56 | Fe | 45 | 102.077 | 618040 | 0.49 | 100 | 102.1 | 70 | 130 | |
| 59 | Co | 72 | 4.769 | 60890 | 1.37 | 5 | 95.4 | 70 | 130 | |
| 60 | Ni | 72 | 3.910 | 20926 | 0.91 | 5 | 78.2 | 70 | 130 | |
| 63 | Cu | 72 | 4.824 | 45431 | 1.95 | 5 | 96.5 | 70 | 130 | |
| 66 | Zn | 72 | 4.876 | 6725 | 3.39 | 5 | 97.5 | 70 | 130 | |
| 75 | As | 72 | 4.668 | 4004 | 1.07 | 5 | 93.4 | 70 | 130 | |
| 78 | Se | 72 | 4.803 | 324 | 0.76 | 5 | 96.1 | 70 | 130 | |
| 88 | Sr | 115 | 4.404 | 24651 | 1.75 | 5 | 88.1 | 70 | 130 | |
| 95 | Mo | 115 | 4.339 | 24535 | 0.81 | 5 | 86.8 | 70 | 130 | |
| 107 | Ag | 115 | 1.864 | 32523 | 1.36 | 2 | 93.2 | 70 | 130 | |
| 111 | Cd | 115 | 0.924 | 2306 | 6.10 | 1 | 92.4 | 70 | 130 | |
| 118 | Sn | 115 | 4.537 | 24049 | 2.34 | 5 | 90.7 | 70 | 130 | |
| 121 | Sb | 115 | 1.827 | 11808 | 2.98 | 2 | 91.4 | 70 | 130 | |
| 137 | Ba | 115 | 4.559 | 10663 | 1.58 | 5 | 91.2 | 70 | 130 | |
| 205 | Tl | 209 | 0.889 | 39082 | 0.83 | 1 | 88.9 | 70 | 130 | |
| 208 | Pb | 209 | 0.876 | 51657 | 0.47 | 1 | 87.6 | 70 | 130 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1159557 | 0.21 | 1250708 | 92.71 | 70 | 120 | |
| 72 | Ge | 811154 | 0.28 | 871265 | 93.10 | 70 | 120 | |
| 115 | In | 8488328 | 0.80 | 8749493 | 97.02 | 70 | 120 | |
| 209 | Bi | 24256758 | 0.74 | 24417425 | 99.34 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:48 | Sample Name | CCB4-170915 |
| Data Batch | 170915.b | Comment | CCB 6020A_W |
| Data File Name | 105_CCB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | MDL S | MDL Aq | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | -0.036 | 1 | 86.6 | 0.4 | 0.3 | |
| 11 | B | 45 | 7.018 | 386 | 2.8 | 10 | 10 | |
| 23 | Na | 45 | 47.633 | 62526 | 0.5 | 50 | 100 | |
| 24 | Mg | 45 | -0.625 | 458 | 13.0 | 50 | 100 | |
| 27 | Al | 45 | -3.335 | 2795 | 3.3 | 50 | 10 | |
| 39 | K | 45 | -0.872 | 24959 | 1.2 | 50 | 100 | |
| 44 | Ca | 45 | 0.786 | 275 | 9.7 | 50 | 100 | |
| 47 | Ti | 45 | -0.035 | 0 | #DIV/0! | 4 | 3 | |
| 51 | V | 45 | 0.067 | 2132 | 4.9 | 4 | 3 | |
| 52 | Cr | 45 | -0.055 | 420 | 8.4 | 2 | 2 | |
| 55 | Mn | 45 | -0.022 | 193 | 7.5 | 2 | 3 | |
| 56 | Fe | 45 | -0.963 | 8418 | 3.9 | 50 | 50 | |
| 59 | Co | 72 | -0.009 | 140 | 31.0 | 2 | 3 | |
| 60 | Ni | 72 | -0.904 | 4309 | 3.7 | 2 | 3 | |
| 63 | Cu | 72 | -0.029 | 662 | 6.7 | 2 | 2 | |
| 66 | Zn | 72 | 0.031 | 352 | 8.3 | 4 | 2 | |
| 75 | As | 72 | -0.010 | 51 | 13.2 | 2 | 2 | |
| 78 | Se | 72 | 0.063 | 23 | 38.3 | 1 | 2 | |
| 88 | Sr | 115 | 0.005 | 408 | 5.3 | 4 | 3 | |
| 95 | Mo | 115 | 0.008 | 146 | 26.3 | 2 | 2 | |
| 107 | Ag | 115 | 0.007 | 179 | 8.6 | 0.4 | 1 | |
| 111 | Cd | 115 | -0.003 | 3 | 100.1 | 0.4 | 0.3 | |
| 118 | Sn | 115 | -0.025 | 292 | 6.3 | 4 | 3 | |
| 121 | Sb | 115 | 0.005 | 178 | 5.7 | 2 | 0.8 | |
| 137 | Ba | 115 | 0.001 | 68 | 17.3 | 2 | 3 | |
| 205 | Tl | 209 | 0.009 | 752 | 5.9 | 2 | 0.5 | |
| 208 | Pb | 209 | -0.019 | 500 | 15.1 | 0.4 | 0.3 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1156037 | 0.18 | 1250708 | 92.43 | 70 | 120 | |
| 72 | Ge | 810543 | 0.70 | 871265 | 93.03 | 70 | 120 | |
| 115 | In | 8499538 | 0.29 | 8749493 | 97.14 | 70 | 120 | |
| 209 | Bi | 24261741 | 0.59 | 24417425 | 99.36 | 70 | 120 | |

# Dilution Sample (Dil) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:52 | Sample Name | 1709087-01A SD |
| Data Batch | 170915.b | Comment | SD 6020A_W |
| Data File Name | 107_SD.d | Dilution | 50 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Value | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | -0.027 | 2 | 100.00 | 0.0 | 368.5 | 110 | 90 | |
| 11 | B | 45 | 47.042 | 1655 | 11.20 | 197.0 | 119.4 | 110 | 90 | |
| 23 | Na | 45 | 1455.989 | 1528121 | 1.03 | 7165.2 | 101.6 | 110 | 90 | Good |
| 24 | Mg | 45 | 765.327 | 410901 | 0.63 | 3796.8 | 100.8 | 110 | 90 | Good |
| 27 | Al | 45 | 0.724 | 3615 | 4.39 | 15.9 | 22.8 | 110 | 90 | |
| 39 | K | 45 | 183.760 | 105767 | 0.34 | 897.1 | 102.4 | 110 | 90 | Good |
| 44 | Ca | 45 | 2183.887 | 58023 | 1.80 | 10781.6 | 101.3 | 110 | 90 | Good |
| 47 | Ti | 45 | 0.040 | 13 | 90.16 | 0.1 | 188.1 | 110 | 90 | |
| 51 | V | 45 | 0.096 | 2336 | 4.80 | 0.2 | 261.9 | 110 | 90 | |
| 52 | Cr | 45 | -0.054 | 431 | 3.81 | 0.0 | 598.5 | 110 | 90 | |
| 55 | Mn | 45 | 0.240 | 1292 | 9.99 | 1.2 | 98.1 | 110 | 90 | Good |
| 56 | Fe | 45 | 0.082 | 14747 | 2.06 | 4.9 | 8.3 | 110 | 90 | |
| 59 | Co | 72 | -0.010 | 138 | 8.50 | 0.0 | -694.1 | 110 | 90 | |
| 60 | Ni | 72 | -0.800 | 4735 | 1.22 | -0.5 | 836.0 | 110 | 90 | |
| 63 | Cu | 72 | -0.005 | 893 | 6.11 | 0.0 | -55.3 | 110 | 90 | |
| 66 | Zn | 72 | 0.295 | 709 | 5.49 | 0.6 | 259.7 | 110 | 90 | |
| 75 | As | 72 | 0.015 | 73 | 3.88 | 0.1 | 78.4 | 110 | 90 | |
| 78 | Se | 72 | -0.069 | 15 | 35.94 | 0.1 | -467.7 | 110 | 90 | |
| 88 | Sr | 115 | 27.865 | 155755 | 0.96 | 137.9 | 101.0 | 110 | 90 | Good |
| 95 | Mo | 115 | 0.058 | 431 | 2.36 | 0.3 | 106.1 | 110 | 90 | Good |
| 107 | Ag | 115 | 0.006 | 166 | 16.15 | 0.0 | 508.2 | 110 | 90 | |
| 111 | Cd | 115 | -0.002 | 6 | 69.34 | 0.0 | -792.2 | 110 | 90 | |
| 118 | Sn | 115 | -0.024 | 298 | 10.58 | 0.0 | 608.0 | 110 | 90 | |
| 121 | Sb | 115 | 0.010 | 216 | 10.30 | 0.0 | 211.7 | 110 | 90 | |
| 137 | Ba | 115 | 0.953 | 2308 | 2.24 | 4.9 | 98.3 | 110 | 90 | Good |
| 205 | Tl | 209 | 0.007 | 657 | 4.34 | 0.0 | 525.6 | 110 | 90 | |
| 208 | Pb | 209 | 0.005 | 1885 | 1.77 | 0.1 | 30.2 | 110 | 90 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1169334 | 0.52 | 1250708 | 93.49 | 70 | 120 | |
| 72 | Ge | 822245 | 0.28 | 871265 | 94.37 | 70 | 120 | |
| 115 | In | 8586508 | 1.00 | 8749493 | 98.14 | 70 | 120 | |
| 209 | Bi | 24351121 | 0.39 | 24417425 | 99.73 | 70 | 120 | |

# Post Digestion Spike Sample (PDS) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 13:54 | Sample Name | 1709087-01A PDS |
| Data Batch | 170915.b | Comment | PDS 6020A_W |
| Data File Name | 108_PDS.d | Dilution | 10 |

| Mass | Name | IS | Conc | CPS | %RSD | Ref Conc | Spk Amt | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 190.769 | 12174 | 0.86 | 0.0 | 200 | 95.4 | 75 | 125 | |
| 11 | B | 45 | 398.173 | 12349 | 3.56 | 197.0 | 200 | 100.6 | 75 | 125 | |
| 23 | Na | 45 | 12089.547 | 12196816 | 1.24 | 7165.2 | 5000 | 98.5 | 75 | 125 | |
| 24 | Mg | 45 | 8542.240 | 4435882 | 0.32 | 3796.8 | 5000 | 94.9 | 75 | 125 | |
| 27 | Al | 45 | 4915.006 | 927753 | 0.34 | 15.9 | 5000 | 98.0 | 75 | 125 | |
| 39 | K | 45 | 5851.540 | 2497505 | 0.27 | 897.1 | 5000 | 99.1 | 75 | 125 | |
| 44 | Ca | 45 | 15840.230 | 406207 | 0.18 | 10781.6 | 5000 | 101.2 | 75 | 125 | |
| 47 | Ti | 45 | 203.538 | 34995 | 0.70 | 0.1 | 200 | 101.7 | 75 | 125 | |
| 51 | V | 45 | 202.362 | 1209716 | 0.25 | 0.2 | 200 | 101.1 | 75 | 125 | |
| 52 | Cr | 45 | 205.341 | 1512789 | 0.64 | 0.0 | 200 | 102.7 | 75 | 125 | |
| 55 | Mn | 45 | 201.550 | 816815 | 0.77 | 1.2 | 200 | 100.2 | 75 | 125 | |
| 56 | Fe | 45 | 5046.572 | 29185344 | 1.39 | 4.9 | 5000 | 100.8 | 75 | 125 | |
| 59 | Co | 72 | 203.907 | 2502776 | 1.18 | 0.0 | 200 | 102.0 | 75 | 125 | |
| 60 | Ni | 72 | 201.851 | 679586 | 0.65 | -0.5 | 200 | 101.2 | 75 | 125 | |
| 63 | Cu | 72 | 201.607 | 1796220 | 0.50 | 0.0 | 200 | 100.8 | 75 | 125 | |
| 66 | Zn | 72 | 206.682 | 262696 | 0.95 | 0.6 | 200 | 103.1 | 75 | 125 | |
| 75 | As | 72 | 205.232 | 167475 | 0.56 | 0.1 | 200 | 102.6 | 75 | 125 | |
| 78 | Se | 72 | 208.065 | 12774 | 1.15 | 0.1 | 200 | 104.0 | 75 | 125 | |
| 88 | Sr | 115 | 333.737 | 1788227 | 0.83 | 137.9 | 200 | 97.9 | 75 | 125 | |
| 95 | Mo | 115 | 185.776 | 1016800 | 0.48 | 0.3 | 200 | 92.8 | 75 | 125 | |
| 107 | Ag | 115 | 199.637 | 3379973 | 0.20 | 0.0 | 200 | 99.8 | 75 | 125 | |
| 111 | Cd | 115 | 197.074 | 476120 | 0.80 | 0.0 | 200 | 98.5 | 75 | 125 | |
| 118 | Sn | 115 | 199.966 | 1012473 | 0.19 | 0.0 | 200 | 100.0 | 75 | 125 | |
| 121 | Sb | 115 | 187.192 | 1161127 | 0.71 | 0.0 | 200 | 93.6 | 75 | 125 | |
| 137 | Ba | 115 | 202.967 | 458601 | 0.41 | 4.9 | 200 | 99.1 | 75 | 125 | |
| 205 | Tl | 209 | 199.250 | 8363421 | 0.58 | 0.0 | 200 | 99.6 | 75 | 125 | |
| 208 | Pb | 209 | 194.477 | 10712650 | 0.50 | 0.1 | 200 | 97.2 | 75 | 125 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1132957 | 0.16 | 1250708 | 90.59 | 70 | 120 | |
| 72 | Ge | 783051 | 0.32 | 871265 | 89.88 | 70 | 120 | |
| 115 | In | 8249466 | 0.72 | 8749493 | 94.29 | 70 | 120 | |
| 209 | Bi | 23374227 | 1.07 | 24417425 | 95.73 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 14:13 | Sample Name | CCV5-170915 |
| Data Batch | 170915.b | Comment | CCV 6020A_W |
| Data File Name | 118_CCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 184.956 | 11901 | 0.59 | 200 | 92.5 | 90 | 110 | |
| 11 | B | 45 | 199.211 | 6312 | 2.40 | 200 | 99.6 | 90 | 110 | |
| 23 | Na | 45 | 4710.855 | 4800377 | 1.77 | 5000 | 94.2 | 90 | 110 | |
| 24 | Mg | 45 | 4648.570 | 2434426 | 1.74 | 5000 | 93.0 | 90 | 110 | |
| 27 | Al | 45 | 4897.825 | 932243 | 2.20 | 5000 | 98.0 | 90 | 110 | |
| 39 | K | 45 | 4683.122 | 2020473 | 1.91 | 5000 | 93.7 | 90 | 110 | |
| 44 | Ca | 45 | 4512.325 | 116861 | 2.26 | 5000 | 90.2 | 90 | 110 | |
| 47 | Ti | 45 | 195.829 | 33945 | 1.78 | 200 | 97.9 | 90 | 110 | |
| 51 | V | 45 | 191.772 | 1155909 | 1.21 | 200 | 95.9 | 90 | 110 | |
| 52 | Cr | 45 | 194.039 | 1441333 | 0.95 | 200 | 97.0 | 90 | 110 | |
| 55 | Mn | 45 | 194.600 | 795158 | 0.82 | 200 | 97.3 | 90 | 110 | |
| 56 | Fe | 45 | 5101.926 | 29749150 | 0.50 | 5000 | 102.0 | 90 | 110 | |
| 59 | Co | 72 | 195.509 | 2448677 | 0.45 | 200 | 97.8 | 90 | 110 | |
| 60 | Ni | 72 | 195.709 | 672609 | 0.33 | 200 | 97.9 | 90 | 110 | |
| 63 | Cu | 72 | 198.174 | 1801831 | 0.75 | 200 | 99.1 | 90 | 110 | |
| 66 | Zn | 72 | 199.028 | 258179 | 1.27 | 200 | 99.5 | 90 | 110 | |
| 75 | As | 72 | 192.162 | 160021 | 0.78 | 200 | 96.1 | 90 | 110 | |
| 78 | Se | 72 | 197.523 | 12375 | 0.39 | 200 | 98.8 | 90 | 110 | |
| 88 | Sr | 115 | 182.083 | 1001904 | 0.59 | 200 | 91.0 | 90 | 110 | |
| 95 | Mo | 115 | 176.514 | 991983 | 0.32 | 200 | 88.3 | 90 | 110 | Fail |
| 107 | Ag | 115 | 194.305 | 3378068 | 0.45 | 200 | 97.2 | 90 | 110 | |
| 111 | Cd | 115 | 189.118 | 469175 | 1.05 | 200 | 94.6 | 90 | 110 | |
| 118 | Sn | 115 | 186.637 | 970406 | 0.78 | 200 | 93.3 | 90 | 110 | |
| 121 | Sb | 115 | 191.305 | 1218475 | 0.38 | 200 | 95.7 | 90 | 110 | |
| 137 | Ba | 115 | 188.379 | 437071 | 0.54 | 200 | 94.2 | 90 | 110 | |
| 205 | Tl | 209 | 192.855 | 8404695 | 0.69 | 200 | 96.4 | 90 | 110 | |
| 208 | Pb | 209 | 186.654 | 10675665 | 0.58 | 200 | 93.3 | 90 | 110 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1142345 | 0.65 | 1250708 | 91.34 | 70 | 120 | |
| 72 | Ge | 799139 | 1.35 | 871265 | 91.72 | 70 | 120 | |
| 115 | In | 8471318 | 1.21 | 8749493 | 96.82 | 70 | 120 | |
| 209 | Bi | 24269017 | 0.68 | 24417425 | 99.39 | 70 | 120 | |

# Low Level Calibration Verification (LLCV) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 14:18 | Sample Name | LCVL5-170915 |
| Data Batch | 170915.b | Comment | LCVL6020A_W |
| Data File Name | 120LCCV.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | Exp | %Rec | Low | High | Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | 0.852 | 59 | 19.16 | 1 | 85.2 | 70 | 130 | |
| 11 | B | 45 | 24.858 | 934 | 6.38 | 20 | 124.3 | 70 | 130 | |
| 23 | Na | 45 | 123.877 | 139691 | 0.79 | 100 | 123.9 | 70 | 130 | |
| 24 | Mg | 45 | 91.793 | 48986 | 0.92 | 100 | 91.8 | 70 | 130 | |
| 27 | Al | 45 | 90.883 | 20693 | 1.11 | 100 | 90.9 | 70 | 130 | |
| 39 | K | 45 | 88.704 | 63025 | 0.77 | 100 | 88.7 | 70 | 130 | |
| 44 | Ca | 45 | 90.772 | 2605 | 6.30 | 100 | 90.8 | 70 | 130 | |
| 47 | Ti | 45 | 4.495 | 788 | 13.38 | 5 | 89.9 | 70 | 130 | |
| 51 | V | 45 | 0.994 | 7715 | 2.70 | 1 | 99.4 | 70 | 130 | |
| 52 | Cr | 45 | 4.640 | 35384 | 2.33 | 5 | 92.8 | 70 | 130 | |
| 55 | Mn | 45 | 4.797 | 19936 | 0.16 | 5 | 95.9 | 70 | 130 | |
| 56 | Fe | 45 | 103.146 | 617011 | 0.24 | 100 | 103.1 | 70 | 130 | |
| 59 | Co | 72 | 4.866 | 62159 | 0.75 | 5 | 97.3 | 70 | 130 | |
| 60 | Ni | 72 | 4.057 | 21443 | 0.79 | 5 | 81.1 | 70 | 130 | |
| 63 | Cu | 72 | 4.879 | 45964 | 0.27 | 5 | 97.6 | 70 | 130 | |
| 66 | Zn | 72 | 4.872 | 6723 | 3.30 | 5 | 97.4 | 70 | 130 | |
| 75 | As | 72 | 4.796 | 4114 | 1.37 | 5 | 95.9 | 70 | 130 | |
| 78 | Se | 72 | 4.764 | 322 | 8.88 | 5 | 95.3 | 70 | 130 | |
| 88 | Sr | 115 | 4.472 | 25279 | 0.49 | 5 | 89.4 | 70 | 130 | |
| 95 | Mo | 115 | 4.338 | 24773 | 0.47 | 5 | 86.8 | 70 | 130 | |
| 107 | Ag | 115 | 1.879 | 33127 | 1.81 | 2 | 94.0 | 70 | 130 | |
| 111 | Cd | 115 | 0.944 | 2379 | 2.19 | 1 | 94.4 | 70 | 130 | |
| 118 | Sn | 115 | 4.593 | 24584 | 2.12 | 5 | 91.9 | 70 | 130 | |
| 121 | Sb | 115 | 1.863 | 12156 | 2.64 | 2 | 93.1 | 70 | 130 | |
| 137 | Ba | 115 | 4.589 | 10841 | 2.42 | 5 | 91.8 | 70 | 130 | |
| 205 | Tl | 209 | 0.912 | 40742 | 1.34 | 1 | 91.2 | 70 | 130 | |
| 208 | Pb | 209 | 0.888 | 53229 | 0.87 | 1 | 88.8 | 70 | 130 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1145903 | 0.24 | 1250708 | 91.62 | 70 | 120 | |
| 72 | Ge | 811588 | 0.40 | 871265 | 93.15 | 70 | 120 | |
| 115 | In | 8573990 | 0.87 | 8749493 | 97.99 | 70 | 120 | |
| 209 | Bi | 24668915 | 0.72 | 24417425 | 101.03 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

| | | | |
|---|---|---|---|
| Date Acquired | 9/15/2017 14:28 | Sample Name | CCB5-170915 |
| Data Batch | 170915.b | Comment | CCB 6020A_W |
| Data File Name | 125_CCB.d | Dilution | 1 |

| Mass | Name | IS | Conc | CPS | %RSD | MDL S | MDL Aq | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 9 | Be | 45 | -0.047 | 1 | 173.2 | 0.4 | 0.3 | |
| 11 | B | 45 | 7.314 | 390 | 3.4 | 10 | 10 | |
| 23 | Na | 45 | 29.301 | 43148 | 1.2 | 50 | 100 | |
| 24 | Mg | 45 | -0.620 | 454 | 9.6 | 50 | 100 | |
| 27 | Al | 45 | -3.288 | 2770 | 3.1 | 50 | 10 | |
| 39 | K | 45 | -1.192 | 24520 | 1.6 | 50 | 100 | |
| 44 | Ca | 45 | -0.730 | 232 | 25.6 | 50 | 100 | |
| 47 | Ti | 45 | -0.022 | 2 | 86.6 | 4 | 3 | |
| 51 | V | 45 | 0.071 | 2135 | 1.6 | 4 | 3 | |
| 52 | Cr | 45 | -0.058 | 389 | 12.5 | 2 | 2 | |
| 55 | Mn | 45 | -0.015 | 219 | 16.0 | 2 | 3 | |
| 56 | Fe | 45 | -1.045 | 7835 | 1.2 | 50 | 50 | |
| 59 | Co | 72 | -0.011 | 116 | 10.9 | 2 | 3 | |
| 60 | Ni | 72 | -0.868 | 4397 | 2.9 | 2 | 3 | |
| 63 | Cu | 72 | -0.036 | 591 | 15.9 | 2 | 2 | |
| 66 | Zn | 72 | 0.045 | 367 | 4.2 | 4 | 2 | |
| 75 | As | 72 | -0.012 | 49 | 9.2 | 2 | 2 | |
| 78 | Se | 72 | -0.006 | 19 | 36.5 | 1 | 2 | |
| 88 | Sr | 115 | -0.004 | 354 | 13.9 | 4 | 3 | |
| 95 | Mo | 115 | 0.004 | 124 | 10.8 | 2 | 2 | |
| 107 | Ag | 115 | 0.005 | 146 | 16.2 | 0.4 | 1 | |
| 111 | Cd | 115 | -0.003 | 3 | 0.0 | 0.4 | 0.3 | |
| 118 | Sn | 115 | -0.026 | 287 | 13.7 | 4 | 3 | |
| 121 | Sb | 115 | 0.013 | 229 | 3.7 | 2 | 0.8 | |
| 137 | Ba | 115 | 0.016 | 104 | 15.1 | 2 | 3 | |
| 205 | Tl | 209 | 0.008 | 698 | 8.2 | 2 | 0.5 | |
| 208 | Pb | 209 | -0.019 | 516 | 12.2 | 0.4 | 0.3 | |

**QC ISTD Table**

| Mass | Name | CPS | %RSD | Ref CPS | %Rec | Low | High | QC Flag |
|---|---|---|---|---|---|---|---|---|
| 45 | Sc | 1142082 | 0.41 | 1250708 | 91.31 | 70 | 120 | |
| 72 | Ge | 803815 | 0.09 | 871265 | 92.26 | 70 | 120 | |
| 115 | In | 8531749 | 0.83 | 8749493 | 97.51 | 70 | 120 | |
| 209 | Bi | 24844603 | 0.71 | 24417425 | 101.75 | 70 | 120 | |

# Pmoist
# For

# DHL Work Order
# 1709100

# PMOIST_170915A
# For

# DHL Work Order
# 1709100

**DHL Analytical, Inc.**

**Run ID:** **PMOIST_170915A** **Run No.:** 94197

**Analytical Run Date:** 9/15/2017 **InstrumentID:** Pmoist

**Analyst:** Vikki Adler

| SampID | DF | TestCode | SampType | Batch ID | Analysis Date/Time | Q | Comments |
|---|---|---|---|---|---|---|---|
| 1709034-02D | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709034-04D | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709034-06D | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709034-08D | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709034-10D | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709098-01A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709099-02A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709100-04B | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709106-01A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709108-04C | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-01A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-02A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-03A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-04A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-05A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-06A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-07A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-08A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-09A | 1 | PMOIST | SAMP | 82392 | 9/18/2017 9:01:00 AM | | |
| 1709115-09A-DUP | 1 | PMOIST | DUP | 82392 | 9/18/2017 9:01:00 AM | | |

# DHL Analytical, Inc.

# PREP BATCH REPORT

Prep Start Date: **9/15/2017 10:54:12 AM**
Digestion: **Start: 9/15/2017 11:57:00 AM / Stop: 9/18/2017 9:01:00 AM**
Prep End Date: **9/18/2017 10:56:54 AM**

Prep Batch **82392** Prep Code: **PMOIST_PREP** Technician: **Vikki Adler**

Prep Factor Units: **mL/g**

**Equipment List**

Oven #2
Balance #20
Thermometer # 81

| Sample ID | Matrix | pH | SampAmt | Fin Vol | Factor | Bottle # | Cleanup |
|---|---|---|---|---|---|---|---|
| 1709034-02D | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709034-04D | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709034-06D | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709034-08D | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709034-10D | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709098-01A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709099-02A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709100-04B | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709106-01A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709108-04C | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-01A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-02A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-03A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-04A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-05A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-06A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-07A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-08A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-09A | Soil | | 10 | 10 | 1.000 | 1 of 1 | |
| 1709115-09A-DUP | Soil | | 10 | 10 | 1.000 | of | |

REVIEWED BY
By Janice Whitt at 11:04:49 AM, 9/18/2017

# Percent Moisture - Bench Sheet

Enter ALL weights into the DHL LIMS - Single Analyte Worksheet

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C

Constant Weight is achieved if 2nd weight is <0.1% of 1st weight

[(Final Weight - 2nd Weight) / (Final Weight)] x 100%

| | | | | | |
|---|---|---|---|---|---|
| RUN ID: | PMOIST_170915A | | | | |
| Date Started: | 9/15/17 | Date Ended: | 9/18/17 | Date Ended: | |
| Time Started: | 11:57 | Time Ended: | 9:01 | Time Ended: | |
| Analyst Start: | VA | Analyst End: | VA | Analyst End: | |
| Balance # | 20 | Balance # | 20 | Balance # | |
| Oven # | FISHER-2 | Thermometer # / Correction Factor | 81 (08/22/17) / 0.0 | Dry Time >12hrs | |
| | | | | 2nd Weighing - if 1st dry is <12 hrs | |
| Initial Temperature | 110.6 | Final Temperature | 111.1 | | |

| Sample ID | Tare Wt (g) | Tare + Sample (g) | Final Wt (g) | 2nd Weight | <0.1% (Y/N) |
|---|---|---|---|---|---|
| SampID | | | | | |
| 1709034-02D | 1.03 | 11.23 | 10.74 | | |
| 1709034-04D | 1.05 | 11.30 | 10.64 | | |
| 1709034-06D | 1.03 | 11.67 | 10.77 | | |
| 1709034-08D | 1.03 | 10.98 | 10.63 | | |
| 1709034-10D | 1.02 | 12.52 | 11.51 | | |
| 1709098-01A | 1.05 | 13.15 | 11.88 | | |
| 1709099-02A | 1.04 | 11.31 | 10.31 | | |
| ~~1709100-04B~~ | 1.03 | 12.19 | 12.09 | | |
| ~~1709104-01A~~ | ~~1.01~~ | ~~11.80~~ | | | |
| 1709106-01A | 1.04 | 12.61 | 11.83 | | |
| 1709108-04C | 1.01 | 10.89 | 8.45 | | |
| 1709115-01A | 1.06 | 12.52 | 11.87 | | |
| 1709115-02A | 1.04 | 11.15 | 10.75 | | |
| 1709115-03A | 1.03 | 12.32 | 11.93 | | |
| 1709115-04A | 1.07 | 11.80 | 10.77 | | |
| 1709115-05A | 1.01 | 11.82 | 11.34 | | |
| 1709115-06A | 1.02 | 13.87 | 13.14 | | |
| 1709115-07A | 1.02 | 12.75 | 11.68 | | |
| 1709115-08A | 1.05 | ~~13.75~~ 13.52 | 12.71 | | |
| 1709115-09A | 1.04 | 11.55 | 10.52 | | |
| 1709115-09A-DUP | 1.06 | 11.32 | 10.46 | | |

1709100-04B
9-18-17

SAMPLE REMOVED FROM OVEN.

9-15-17

| Data Folder Contents | Review Items | Check | 2nd Level Review |
|---|---|---|---|
| Hard Copies MUST match LIMS data | | | |
| 1. Is the Prep Batch Report included? | Prep Start/End Dates<br>SampAmt=10, FinVol=10<br>20 field samples/batch, 1 DUP/batch | X | |
| 2. Is the Run Log included? | Test Code, Sample Type<br>Batch ID, and Analysis Date/Time | X | |
| 3. Is PMOIST bench sheet included? | Bench sheet vs. LIMS - Single Analyte Worksheet | X | |
| 4. Is the RPD for the DUP ≤30%? | If RPD fails criteria, then state reason below: | X | |

**Comments:**

Analyst: [signature] Date: 9-18-17

Second-Level Review: Date:

# Percent Moisture - Bench Sheet

**Enter ALL weights into the DHL LIMS - Single Analyte Worksheet**

**Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5ºC**

**Constant Weight is achieved if 2nd weight is <0.1% of 1st weight**
**[(Final Weight - 2nd Weight) / (Final Weight)] x 100%**

| | | | | | |
|---|---|---|---|---|---|
| RUN ID: | PMOIST_170915A | | | | |
| Date Started: | 9/15/17 | Date Ended: | 9/18/17 | Date Ended: | |
| Time Started: | 11:57 | Time Ended: | 9:01 | Time Ended: | |
| Analyst Start: | VA | Analyst End: | VA | Analyst End: | |
| Balance # | 20 | Balance # | 20 | Balance # | |
| Oven # | FISHER-2 | Thermometer # | 81 (08/22/17) | **Dry Time >12hrs** | |
| | | Correction Factor | 0.0 | **2nd Weighing - if 1st dry is <12 hrs** | |
| Initial Temperature | 110.6 | Final Temperature | 111.1 | | |

| Sample ID | Tare Wt (g) | Tare + Sample (g) | Final Wt (g) | 2nd Weight | <0.1% (Y/N) |
|---|---|---|---|---|---|
| SampID | | | | | |
| 1709034-02D | 1.03 | 11.23 | 10.74 | | |
| 1709034-04D | 1.05 | 11.30 | 10.64 | | |
| 1709034-06D | 1.03 | 11.67 | 10.77 | | |
| 1709034-08D | 1.03 | 10.98 | 10.63 | | |
| 1709034-10D | 1.02 | 12.52 | 11.51 | | |
| 1709098-01A | 1.05 | 13.15 | 11.88 | | |
| 1709099-02A | 1.04 | 11.31 | 10.31 | | |
| 1709100-04B | 1.03 | 12.19 | 12.09 | | |
| 1709106-01A | 1.04 | 12.61 | 11.83 | | |
| 1709108-04C | 1.01 | 10.89 | 8.45 | | |
| 1709115-01A | 1.06 | 12.52 | 11.87 | | |
| 1709115-02A | 1.04 | 11.15 | 10.75 | | |
| 1709115-03A | 1.03 | 12.32 | 11.93 | | |
| 1709115-04A | 1.07 | 11.80 | 10.77 | | |
| 1709115-05A | 1.01 | 11.82 | 11.34 | | |
| 1709115-06A | 1.02 | 13.87 | 13.14 | | |
| 1709115-07A | 1.02 | 12.75 | 11.68 | | |
| 1709115-08A | 1.05 | 13.52 | 12.71 | | |
| 1709115-09A | 1.04 | 11.55 | 10.52 | | |
| 1709115-09A-DUP | 1.06 | 11.32 | 10.46 | | |
| | | | | | |

| Data Folder Contents | Review Items | Check | 2nd Level Review |
|---|---|---|---|
| **Hard Copies MUST match LIMS data** | | | |
| 1. Is the Prep Batch Report included? | **Prep Start/End Dates<br>SampAmt=10, FinVol=10<br>20 field samples/batch, 1 DUP/batch** | **X** | x |
| 2. Is the Run Log included? | **Test Code, Sample Type<br>Batch ID, and Analysis Date/Time** | **X** | |
| 3. Is PMOIST bench sheet included? | **Bench sheet vs. LIMS - Single Analyte Worksheet** | **X** | |
| 4. Is the RPD for the DUP ≤30%? | **If RPD fails criteria, then state reason below:** | **X** | |

**Comments:**

Analyst: [signature] Date: 9/18/17

Second-Level Review: Janice Whitt Date: 9/18/2017