# Draft

# Monitoring Well Installation Report

## RED HILL BULK FUEL STORAGE FACILITY
## JOINT BASE PEARL HARBOR-HICKAM, HAWAII

### DOH FACILITY ID: 9-102271
### DOH RELEASE ID: 990051, 010011, 020028, 140010

**March 2015**

**Department of the Navy**
**Naval Facilities Engineering Command, Hawaii**
**400 Marshall Road**
**JBPHH, HI 96860-3139**

**Contract No. N62583-11-D-0515, Contract Task Order No. KB01**

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**Prepared for:**

**Department of the Navy**
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**Prepared under**:

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AMEC | AMEC Earth and Environmental, Inc. |
| amsl | above mean sea level |
| bgs | below ground surface |
| btoc | below top of sounding tube |
| BWS | Board of Water Supply |
| bwt | below water table |
| °C | degrees Celsius |
| COC | chain of custody |
| Cond | specific conductance |
| COPCs | contaminants or constituents of potential concern |
| CWRM | State of Hawaii Department of Land and Natural Resources, Commission on Water Resource Management |
| DL | detection limit |
| DO | dissolved oxygen |
| DOH | State of Hawaii Department of Health |
| DQAR | data quality assessment report |
| EAL | Environmental Action Level |
| EDB | ethylene dibromide |
| EPA | United States Environmental Protection Agency |
| F-76 | marine diesel fuel |
| ft | feet |
| ft/day | feet per day |
| FISC | Fleet and Industrial Supply Center |
| GNSS | Global Navigation Satellite System |
| GWPP | Groundwater Protection Plan |
| GPS | Global Positioning System |
| HAR | Hawaii Administrative Rules |
| HCl | hydrochloric acid |
| $HNO_3$ | nitric acid |
| I.D. | identification |
| IDW | investigation-derived waste |
| JBPHH | Joint Base Pearl Harbor-Hickam |
| JP-5 | Jet Fuel Propellant-5 |
| JP-8 | Jet Fuel Propellant-8 |
| L/min | liters per minute |
| LNAPL | light non-aqueous phase liquid |
| LOD | limit of detection |
| LOQ | limit of quantitation |

## ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| MDL | method detection limit |
| µg/L | micrograms per liter |
| mg/L | milligrams per liter |
| mS/cm | millisiemens per centimeter |
| mV | millivolt |
| NA | not applicable, not analyzed, or not available depending on use |
| NAVFAC | Naval Facilities Engineering Command |
| NAVSUP FLC | Naval Supply Systems Command Fleet Logistics Center |
| Navy | United States Navy |
| N.D. | not detected |
| NSF/ANSI | NSF International/American National Standards Institute |
| NTU | nephelometric turbidity units |
| ORP | oxidation-reduction potential |
| Pacific GPS | Pacific GPS LLC |
| PAHs | polycyclic aromatic hydrocarbons |
| PAL | project action level |
| PCS | Pacific Commercial Services LLC |
| pH | potential of hydrogen (hydrogen activity) |
| PID | photo-ionization detector |
| PQL | project quantification limit |
| PVC | polyvinyl chloride |
| QA/QC | quality assurance/quality control |
| QAPP | quality assurance project plan |
| QC | quality control |
| RHMW | Red Hill Monitoring Well |
| SI | Site Investigation |
| SIM | selective ion method |
| SVOC | semi-volatile organic compound |
| TEC | The Environmental Company, Inc. |
| Temp | temperature |
| toc | top of sounding tube |
| TPH | total petroleum hydrocarbons |
| TPH-DRO | total petroleum hydrocarbons-diesel range organics |
| TPH-GRO | total petroleum hydrocarbons-gasoline range organics |
| TPH-RRO | total petroleum hydrocarbons-residual range organics |
| USGS | Unites States Geological Survey |
| UST | underground storage tank |
| VOCs | volatile organic compounds |

# SECTION 1

# INTRODUCTION

This Monitoring Well Installation Report describes the activities and results of the installation of two groundwater monitoring wells north of the Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam (JBPHH), Hawaii, hereafter referred to as the "Facility." The Facility is part of the JBPHH and is located on the Island of Oahu. The boundary of the Facility, the surrounding area, and the locations of the new Red Hill monitoring wells (RHMW06 and RHMW07) and existing monitoring wells are shown on Figure 1. The State of Hawaii Department of Health (DOH) Facility identification (I.D.) number for the Facility is 9-102271. The DOH Release I.D. numbers are 990051, 010011, 020028, and 140010. This report has been prepared for Naval Facilities Engineering Command (NAVFAC) Hawaii (NAVFAC Hawaii), under NAVFAC Pacific Prime Contract No. N62583-11-D-0515/Contract Task Order KB01.

## 1.1 PURPOSE AND OBJECTIVES

The purpose for installing the new monitoring wells was to develop a more robust groundwater monitoring network at the Facility. The objectives were to evaluate potential off-site migration of petroleum-related constituents in groundwater, and to provide additional monitoring points to determine the hydraulic head (groundwater levels) at the point locations for potential input into updated groundwater flow and/or petroleum fate and transport models of the area. The hydraulic head data measured in one or both of the two new monitoring wells and other monitoring wells in the area could be input into groundwater flow models to potentially constrain conceptual models of the groundwater system, potentially quantify aquifer properties, and approximate the hydraulic gradient or groundwater flow direction in the area. The hydraulic head data may also be input into petroleum constituent fate and transport models to approximate the distance petroleum constituents could potentially migrate in groundwater from a specific source. Previous investigation and groundwater modeling reports are identified in Subsection 1.3.

The number of new monitoring wells (two) and their locations were based on discussions and correspondence with the DOH, and are in part a response to requirements for a reported release

from Tank 5 at the Facility (Figure 1). These requirements are documented in letters from DOH to the United States Navy (Navy) dated February 12, 2014 and February 26, 2014. The selected locations were acceptable because more ideal locations are constrained by infrastructure, land use, topography, extremely limited access road width, restrictions on access road use, health and safety issues, nearby sensitive archeological sites, endangered species issues, and potential for slope instability and rockfall. The agreed upon comparison criteria for the analytical results are the DOH environmental action levels (EALs) where a current or potential drinking water source is present beneath the site and a surface water body is within 150 meters from the site (DOH, 2012).

The monitoring well installations and groundwater sampling activities described herein were conducted in accordance with the *Final Work Plan/Sampling and Analysis Plan, Monitoring Well Installation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii*, (Battelle and Parsons, 2014) (Final Work Plan). The DOH reviewed the draft work plan, commented, and accepted the Final Work Plan. Based on field conditions and observations, deviations from the Final Work Plan were made and are described in the activity discussions.

## 1.2 LOCATION AND SETTING

The Facility is located on the island of Oahu, Hawaii, approximately 2.5 miles northeast of Pearl Harbor (Figure 1). It is situated on a low ridge on the western edge of the Koolau Mountain Range that divides Halawa Valley from Moanalua Valley. The Facility is bordered on the north by Halawa Correctional Facility and private businesses, on the west by the U.S. Coast Guard reservation, on the south by residential neighborhoods, and on the east by Moanalua Valley. A quarry is located less than a quarter mile to the northwest. The Facility occupies 144 acres and the elevation ranges from approximately 200 to 500 feet above mean sea level (amsl). The geology and topography influence groundwater flow in the area as discussed in Section 3.1.

The Facility is located above the approximate boundary of the Waimalu and Moanalua Aquifer Systems of the Pearl Harbor and Honolulu Aquifer Sector, respectively. Both aquifers are sources of potable water for several public water supply systems, including the Honolulu Board of Water Supply (Honolulu BWS) Halawa Shaft Pump Station (2353-01) located approximately 3,000 feet northwest of the Facility property boundary (approximately 4,400 feet

northwest of Tank 5), and the Navy Red Hill Pumping Station (designated 2254-01) located approximately 3,000 feet hydraulically down-gradient from Tank 5.

The Facility is located on federal government land (zoned F1 - Military and Federal).

## 1.3 SITE BACKGROUND

The Facility was constructed by the U.S. Government in the early 1940s. It contains 18 active and 2 inactive bulk fuel field-constructed underground storage tanks (USTs) that are operated by Naval Supply Fleet Logistics Center (NAVSUP FLC) Pearl Harbor (formerly Fleet and Industrial Supply Center [FISC]).

The USTs currently contain jet fuel propellant 5 and 8 (JP-5 and JP-8) and marine diesel fuel (F-76). Several tanks have, in the past, stored Navy special fuel oil, Navy distillate, aviation gasoline, and motor gasoline (Environet, 2010).

Various environmental investigations have been conducted at the Facility since the late 1990s. Site Investigation (SIs) were conducted, and reported in 2002 (AMEC Earth and Environmental, Inc. [AMEC]), and 2007 (The Environmental Company, Inc. [TEC]). A groundwater flow and contaminant transport model was completed as part of the 2007 TEC investigation and the groundwater gradient was reevaluated in 2010 by TEC. A Groundwater Protection Plan (GWPP) was developed in 2008 based on results of the SIs, modeling, and Tier 3 Risk Assessment, also conducted by TEC in 2007. The GWPP was revised by TEC in 2009. The purposes and results of the investigations can be found in the individual reports.

The Facility USTs are field constructed, and are therefore deferred from many of the State and Federal UST Program statutes; however, the Navy must comply with other applicable UST requirements and guidance in Hawaii Administrative Rules (HAR) title 11, chapter 281, Underground Storage Tanks.

The Navy has been conducting quarterly sampling of existing groundwater monitoring wells located inside the Red Hill tunnel since 2006, and outside of the Red Hill tunnel since 2009. The current quarterly sampling program includes four monitoring wells located in the tunnel (RHMW01, RHMW02, RHMW03, RHMW05), one sample point located at the Red Hill Pumping Station (2254-01), and three monitoring wells located outside of the tunnel (RHMW04, HDMW2253-03, OWDFMW01) as shown on Figure 1.

## 1.4 REPORT ORGANIZATION

This report contains five sections and five appendices. Section 1 is this introduction. Section 2 provides a description of the drilling and monitoring well installation activities, monitoring well development, dedicated pump installation, groundwater sampling, monitoring well surveying, and investigation-derived waste (IDW) management. Section 3 presents geologic and hydrogeologic observations and groundwater analytical results. Conclusions are presented in Section 4. Cited references are provided in Section 5. Tables and figures are found at the end of the report.

Geologic boring logs with well construction diagrams, and photographic documentation of rock cores are provided in Appendix A. Appendix B includes well development and groundwater sampling forms. Appendix C contains the chain-of-custody (COC) forms, laboratory analytical data, and the data quality assessment report (DQAR). Appendix D contains a summary of surveying activities, the survey report, and coordinate data for the new monitoring wells. Appendix E contains a summary of IDW management activities, IDW characterization results, and disposal documentation.

# SECTION 2

# MONITORING WELL INSTALLATION ACTIVITIES

This section describes the pre-drilling activities; drilling, soil/rock sampling, monitoring well installation, and construction activities; and post-drilling activities associated with placement of the two new north perimeter monitoring wells, RHMW06 and RHMW07, at the Facility. The locations of these new monitoring wells are shown on Figure 1.

## 2.1 PRE-DRILLING ACTIVITIES

This subsection describes the pre-drilling activities completed prior to the start of the drilling program as described in the Final Work Plan (Battelle and Parsons, 2014).

### 2.1.1 Site Reconnaissance Surveys

Site reconnaissance surveys were conducted as follows:

- Inspecting drill locations for aboveground and buried utilities, slope stability/potential rockfall issues, base security access limitations, topographic limitations, proximity to area archeological sites and potential endangered species habitat, temporary security fence layout, vegetation clearance, and drill rig set-up area and configuration needed for all drilling equipment and support vehicles.
- Reviewing available maps showing utilities in the area of the drilling locations.
- Reviewing site-specific hazards and updating hazards analysis assessments, if needed, to protect employees, subcontractors, visitors, and JBPHH personnel from any potential job-related accidents and injuries during field work.

### 2.1.2 NAVFAC Hawaii Clearances and Approvals

The following NAVFAC Hawaii clearances and approvals were obtained:

- Dig Permit through JBPHH Facilities Management Division.
- Temporary security fence installation approval from Physical Security.

### 2.1.3 Temporary Security Fence Installation, Vegetation Clearance, and Site Grooming

Prior to drilling, a temporary security fence was installed and vegetation was cleared at each location as described in the Final Work Plan (Battelle and Parsons, 2014). The temporary security fence installation and vegetation clearance were performed concurrently at both drilling locations.

A security guard was present anytime the security fence was open. Vegetation, including trees, was cleared a minimum of 10 feet away from the outside of the temporary fence per NAVFAC Hawaii security requirements. The drilling locations also were groomed to remove large rocks and debris hazards including tire puncture hazards that could cause damage to vehicles being operated at the drilling locations. The temporary fence areas allowed sufficient space to accommodate drill rigs, support vehicles, and IDW roll-off containers (bins).

### 2.1.4 Underground Utilities

Utility information was obtained from NAVFAC Hawaii to determine whether Navy utilities were present at the monitoring well locations. The Hawaii One Call Center was contacted for utility clearances for public utilities that may cross Navy property. It was determined that no public utilities crossed Navy property in the area where the new monitoring wells were to be installed. The two drilling locations were cleared by a geophysical utility locating subcontractor.

### 2.1.5 Monitoring Well Permits

The State of Hawaii Department of Land and Natural Resources, Commission on Water Resource Management (CWRM) required that installation permits be obtained for the two new monitoring wells. The permit applications were submitted on August 6, 2014. After clarification on well construction was provided to the CWRM, approval to install the monitoring wells was received by the Navy on August 19, 2014.

### 2.1.6 Traffic Control

Informal traffic control management was implemented by using men-working signs during drilling at RHMW07.

## 2.2 DRILLING AND SOIL/ROCK SAMPLING

Drilling and installation of monitoring wells RHMW06 and RHMW07 were performed by Valley Well Drilling of Kapolei, Hawaii. The drilling of RHMW06 was started August 28, 2014 and the well installation was completed September 17, 2014. The drilling of RHMW07 was started September 19, 2014 and the well installation was completed October 6, 2014. Mobile B-59 and B-90 drilling rigs were used for borehole drilling and coring. The Mobile B-59 drill rig was used to advance hollow stem augers into the soil/saprolite and for bedrock coring. The

Mobile B-90 air rotary drill rig was used to enlarge the core holes, and to advance the larger boreholes through the bedrock to total depth for subsequent well installation.

It was anticipated that bedrock would be contacted at shallow depths and that potential perched water could be encountered at the two drilling locations. Solid basalt bedrock was not contacted until 35 feet below ground surface (bgs) at RHMW06, and 27 feet bgs at RHMW07. Conductor casing consisting of 10-inch-diameter, Schedule 80 polyvinyl chloride (PVC) casing was installed from ground surface slightly into bedrock after augering and rock coring at RHMW06, and prior to rock coring at RHMW07. The conductor casing was installed to a depth of 40 feet bgs at both well locations and grouted in-place.

The drilling procedures and associated logging techniques are described in the following subsections. Geologic logs are provided in Appendix A.

### 2.2.1 Hollow Stem Auger

The initial borehole at RHMW06 was advanced to refusal using hollow stem augers, and soil characterization samples were collected at 5-foot intervals beginning at 10 feet bgs with 1.5-foot long, 2-inch-diameter split spoons. Because numerous basalt cobbles and boulders were encountered, augering at RHMW06 was difficult (both for soil characterization sampling and reaming to install conductor casing), and split-spoon soil characterization sample recovery was poor. Due to these difficulties, the Mobile B-90 equipped with an air hammer was used at RHMW07 to collect soil characterization samples and to ream the borehole for installation of the conductor casing. Split-spoon soil samples were collected after retracting the hammer and running the sampler in the open hole. Recovery also was poor at RHMW07.

The presence of petroleum constituents was not indicated in soil at either location based on field observations and direct screening with a RAE Systems MiniRAE 2000 photo-ionization detector (PID); therefore, soil samples were not collected and submitted for laboratory chemical analysis. The PID was calibrated prior to being shipped by the rental company. The PID calibration was checked using isobutylene gas, typically each morning before the PID was used. PID screening results, logging information, and other pertinent information are recorded on the geologic logs in Appendix A.

### 2.2.2 Rock Coring

Rock coring commenced near the competent bedrock contact. Rock coring was conducted in RHMW06 beginning at 25 feet bgs in alternating saprolite and weathered basalt and in RHMW07 beginning at 40 feet bgs in basalt. The solid bedrock contact is approximately 35 feet bgs at RHMW06 and 27 feet bgs at RHMW07. The cored depths of RHMW06 and RHMW07 were 280 feet bgs and 240 feet bgs, respectively. These depths were between 40 to 50 feet below the water table as shown on the geologic logs. The total coring depths were deeper than anticipated because of uncertainties in the depth to the static water table. These uncertainties arose from having only approximate ground surface elevations at the locations, the use of potable water during coring, and difficulties with measuring accurate water levels in the core rods during core hole advancement.

Continuous rock cores were obtained in a 5-foot-long HQ-size core barrel (approximate 4-inch outside diameter yielding an approximate 2.75-inch rock core) using a wireline and quad-latch retrieval system. Compressed air was used for circulation fluid at shallower depths. A 55-gallon drum with an air stack filter on the top was used to capture and mitigate fine drilling dust. The presence of petroleum constituents was not indicated in rock at either location based on field observations and direct screening of core with a PID. Compressed air mixed with clean potable water was used for the circulation fluid at increasing depths.

An off-site Honolulu BWS fire hydrant, located between 99-056 Koaha Way and 99-048 Koaha Way, Aiea, Hawaii, was used as the potable water source for rock coring and drilling. This water was analyzed for the same chemical constituents as the groundwater from the monitoring wells.

Rock cores were described in accordance with standard logging procedures. A summary rock core chart was used in the field as a guide to aid in the descriptions. In general, rock color; texture; strength; degree and orientation of fracturing; shape, size and volume of voids; weathering; and secondary staining or mineralization were noted. The Geological Society of America rock color chart (1991) with Munsell™ color chips was used for color determination. Lithologic descriptions, PID screening results and other observations are provided on the geologic logs. Core was placed in plastic core boxes and photographed. Photographs of the core are provided in Appendix A.

### 2.2.3 Air Rotary

The core holes were reamed to 8-inch diameter by conventional, open-hole air rotary drilling with an air hammer. A diverter was bolted to the top of the conductor casing to discharge air, dust, rock cuttings, and water from within the boreholes via a large hose to a cyclone mounted on a roll-off bin. Variable and often difficult subsurface conditions were encountered during the drilling of the RHMW06 and RHMW07 boreholes, and small amounts of clean potable water and liquid foaming agent were added to the drilling air stream to create drilling foam for effective rock cuttings removal.

The foaming agent is a surfactant/wetting agent similar to liquid detergent. When small amounts of the agent are mixed with water and added to the drilling airstream, large numbers of small air bubbles combine with the agent to create foam. The foam then lifts the drill cuttings out of the borehole. The foaming agent used was Baroid AQF-2™, a drilling product that is NSF International (formerly National Sanitation Foundation)/American National Standards Institute (NSF/ANSI) Standard 60 certified. Baroid AQF-2™ is comprised of diethylene glycol and ethylene glycol monobutyl ether that readily degrade (break down) in groundwater. Less than 2 gallons of the foaming agent were used during the air rotary drilling of each borehole.

The use of drilling foam is a common and often necessary practice in Hawaii. Its use allows for successful drilling through deeper basalt rock with porous and permeable clinker or other permeable zones, and into basal groundwater that is a current or potential drinking water source. The draft work plan and approved Final Work Plan (Battelle and Parsons, 2014) stated that limited amounts of clean potable water and drilling foam would be used during drilling to mitigate dust and remove cuttings from the boreholes. The boreholes and wells for RHMW06 and RHMW07 may not have been drilled and set to their required depths without the use of drilling foam to remove rock cuttings, particularly at RHMW07.

## 2.3 MONITORING WELL INSTALLATION

The monitoring wells are installed in basalt and screened within the basal aquifer. Four-inch-diameter, Schedule 80 PVC monitoring wells with 30 feet of 0.020-inch slotted, Schedule 80 PVC screens were constructed within the 8-inch boreholes. The 30-foot screens straddle the water table such that about 20 feet of screen is below the water table and 10 feet is above to allow for water

level fluctuation. Longer sections of screen (30 feet instead of 20 feet in the Final Work Plan) were placed because the boreholes were drilled to greater depths than anticipated due to uncertainties in the depth to the static water table. This deviation from the Final Work Plan was done to ensure more water in the wells for proper development and will allow for potential adjustments to well pump settings during long-term monitoring. The wireline on the Mobile B-90 was used to place the sections of screen and blank casing. Additionally, a 1-inch-diameter PVC sounding tube for the purpose of measuring water levels was attached to the outside of each well casing and placed with the well during construction as described in the Final Work Plan (Battelle and Parsons, 2014). The sounding tubes were slotted and screened over the same interval as the monitoring wells. The tube was necessary to obtain accurate water levels because the tape of a water level indicator can become entangled in the dedicated-pump sample tubing within the well. The depths to water in the sounding tubes and wells were measured to confirm the respective depths were the same and that the sounding tubes could be used to obtain accurate groundwater depth measurements.

Coarse #3 Monterey silica sand was tremied in the borehole annulus beneath, within, and approximately 5 to 7 feet above the well screen, followed by a 3- to 8-foot bentonite pellet seal, then bentonite chips up to the bottom of the conductor casing. Dry bentonite pellets and chips were tremied and hydrated with clean, potable water. The calculated volumes of the materials to fill the annular space were compared to the actual used as construction progressed to determine if large voids were present in the boreholes or if bridges formed. Continuous downhole measurement of the rise of the bentonite pellets and chips during placement indicated that large voids were not present and that no bridges formed. The annular space between the well casing and conductor casing was finished with cement-bentonite grout to near surface. Well construction diagrams are provided on the geologic logs in Appendix A.

## 2.4 MONITORING WELL SURFACE COMPLETION

The monitoring wells were completed above ground with an 8-inch-diameter steel protective casing fitted with a locking, tamper proof lid that covers the protective casing and well head. The lock is recessed and covered for added protection. The steel casings were set in concrete at the wellhead for strength, security, and to provide a surface seal. A 3.5-foot by 3.5-foot square by 2-foot-thick concrete pad was installed around each protective steel casing. Approximately 1 foot of

the concrete pad extends above ground surface. The protective steel casings extend above the well casings so that there is about 6 inches of clearance between the wellhead and locking lid. Coarse sand was poured into the space between the well and protective casing to a level of about 6 inches below the wellhead. A total of four (4) steel bollards were placed slightly beyond each corner of the concrete pads. The bollards extended about 2 feet bgs and about 3 feet above ground surface, and each is individually set in concrete. The bollards and protective steel casing were painted bright yellow for high visibility. Figure 2 is an example photograph of the RHMW07 surface completion.

## 2.5 MONITORING WELL DEVELOPMENT

Monitoring well development consisted of surging and bailing groundwater until fines were removed and the clarity of the water stabilized. The groundwater parameters dissolved oxygen (DO), oxidation-reduction potential (ORP), potential of hydrogen (pH), temperature, specific conductance, and turbidity were monitored during the development cycle using a Horiba U-52 multi-parameter meter. Depths to groundwater were measured with a water level meter probe through the sounding tubes attached to the outside of each well casing. Well development forms with the values of these parameters measured during development and other pertinent information including water levels are included in Appendix B. Development continued at both well locations beyond the maximum 10 well volumes stated in the Final Work Plan (Battelle and Parsons, 2014). At RHMW06, all parameters including turbidity stabilized, but turbidity values remained slightly elevated after removing 290 gallons. It was assumed that further development would not be beneficial and development was discontinued. At RHMW07, the sampling parameters stabilized and turbidity was low after removing 10 well volumes (170 gallons); however, development continued because drilling foam was present in the water. Development was discontinued after removing 480 gallons even though the water was still foamy because further development was not deemed beneficial.

The presence of light non-aqueous phase liquid (LNAPL) petroleum was not indicated in the development water from either well, based on field observations. Petroleum odor, sheen on the development water, or petroleum on the water level meter probe were not detected or observed.

## 2.6 DEDICATED GROUNDWATER PUMP SYSTEM INSTALLATION

Dedicated pneumatic bladder pump sampling systems were installed in each monitoring well after well development. The sampling systems consist of a stainless-steel bladder pump with the screen intake 3 feet below the top of the pump, a 3/32-inch diameter Teflon coated stainless steel safety cable, 1/4-inch inside-diameter by 3/8-inch outside-diameter high density polyethylene air and discharge tubing, and a well cap assembly with fittings. The bladder pumps were installed at a pre-determined depth, approximately 10 to 12 feet below the water table. The exact lengths of tubing and safety cable were provided by the supplier. Cable ties were applied approximately every 10 feet to secure the tubing to the safety cable. Pump installation required two workers to lower the pump assembly into the well. The sampling ports of the bladder pump system terminate in a PVC plate, and are part of a well cap assembly that consists of the plate and a 4-inch sleeve. This sleeve assembly slips over the 4-inch PVC well casing at the wellhead. The sounding tubes were finished approximately 0.5 foot below the top of the well cap assembly. Groundwater levels, elevations, well construction details, and pump depth settings are provided in Table 1. All water level measurements were taken from the sounding tube measuring-point datum and should be measured from this datum in the future.

## 2.7 GROUNDWATER DEPTH MONITORING, PURGING, AND SAMPLING

Depths to groundwater were measured with a water level meter probe through the sounding tubes attached to the outside of each well casing. Because the monitoring wells were installed at depths greater than 200 feet bgs, vertical deviation of monitoring wells was measured after development using a WellNav™ centralized camera system provided and operated by the drilling contractor. Deviations were between 0.5 and 1 degree, and based on these small deviations (less than 0.02 foot from vertical), groundwater elevations do not need to be corrected to obtain accurate measurements for evaluation of hydraulic head.

Groundwater purging and sampling with a bladder pump is a low flow or micropurge technique that is considered applicable for use in permeable formations that have minimal water level drawdown, such as the basal aquifer. For this technique, water level drawdown should be kept to a minimum. Drawdown measured in RHMW06 during purging was negligible. Drawdown measured in RHMW07 during purging was about 1.3 feet, suggesting lower relative permeability.

The pumping flow rates averaged about 1 gallon every 5 minutes or about 0.8 liter per minute (L/min). Compressed nitrogen gas was used as the compressed gas source for operation of the bladder pumps. Two large bottles of compressed gas were needed to complete the purge and sample cycle that included collecting quality assurance/quality control (QA/QC) samples.

During purging, DO, ORP, temperature, pH, specific conductance, and turbidity were measured and recorded. These groundwater sampling parameters were measured continuously through use of a flow-thru cell connected to a U-52 multi-parameter meter. The sampling parameters and other pertinent sampling information are recorded on the field groundwater sampling forms that are provided in Appendix B. Also, these sampling parameters were tabulated and are provided in Table 2. Stabilization of the water quality parameters was the criterion for sample collection. Samples were collected after a reasonable amount of water was removed and three successive measurements of the water quality field parameters showed stabilization according to the criteria shown on the groundwater sampling form. About 15 gallons of water were purged from each well. Following purging, the flow-through cell was bypassed and groundwater samples were collected directly from the pump discharge line. Groundwater samples were collected from RHMW07 on October 20, 2014. A trip blank was not included for total petroleum hydrocarbon-diesel range organics (TPH-DRO) and RHMW07 was re-sampled for this compound on October 27, 2014. Groundwater samples were collected from RHMW06 on October 21, 2014.

The presence of LNAPL was not indicated in the groundwater samples from either well. Petroleum odor, sheen on the purge water, or petroleum on the water level meter probe were not detected or observed.

The off-site Honolulu BWS fire hydrant, located between 99-056 Koaha Way and 99-048 Koaha Way, Aiea, Hawaii, used as the potable water source for rock coring and drilling, was sampled on November 12, 2014 by Environet Inc. personnel. The fire hydrant was opened and approximately 10 gallons of hydrant water were purged prior to sample collection. The water stream was reduced to a trickle and the samples were collected. Water quality parameters were not obtained. The fire hydrant analytical results are in the laboratory data reports provided in Appendix C.

Groundwater samples were analyzed for contaminants of potential concern (COPCs) by the methods listed on the groundwater sampling forms (Appendix B). The container types and

volumes, and preservation methods also were shown on the groundwater sampling forms. Groundwater samples collected for dissolved lead analysis were filtered in the field through a 0.45-micrometer disposable filter. Additional details including holding times are discussed in Section 3.3.2.

Initial baseline samples were collected from the monitoring wells after installation and development to determine if petroleum-related constituents were present. Results of the initial samples are provided in Section 3. Future COPC monitoring and frequency will be determined by NAVFAC Hawaii based on these results.

### 2.7.1 Sample Identification, Handling, and Shipping

Environmental samples were handled in accordance with the procedures outlined in the Final Work Plan (Battelle and Parsons, 2014). Samples were submitted to APPL, Inc. and EMAX Laboratories, located in Clovis and Torrance, California, respectively. All environmental samples and associated quality control (QC) samples were shipped the same day of collection via Federal Express for the earliest next day delivery.

Standard COC protocol was maintained during sample collection, handling, management, and shipment to the laboratory. Samples were kept on ice after collection to keep them cool (4 +/-2 degrees Celsius [°C]) and packaged in coolers to be shipped to the laboratory as expeditiously as possible (same day of collection). A temperature blank (a vial filled with distilled water) was included in every cooler to determine the internal temperature of the cooler upon receipt at the laboratory. Trip blanks were included for the appropriate analyses.

Copies of the laboratory-provided COCs were retained by the field manager for documentation. The laboratories were contacted the day of sample receipt to confirm receipt of the samples and to determine any discrepancies or deficiencies upon receipt of the samples. Copies of the COCs, signed by the laboratories, are provided in Appendix C.

### 2.7.2 Analytical Methods

The data quality process for this project was described in the Quality Assurance Project Plan (QAPP) in Section 4 of the Final Work Plan (Battelle and Parsons, 2014). Analytical methods, detection limits, project action levels (PALs), types and numbers of field QC samples, sample containers, preservation, and holding times were followed as outlined in the QAPP. Groundwater

samples were specifically analyzed for the COPCs listed in Table 3. The container types, volumes, preservation, and holding times associated with the analytical methods are shown in Table 4. Semi-volatile organic compounds (SVOCs) and ethylene dibromide were analyzed by U.S. Environmental Protection Agency (EPA) methods 8270C Selective Ion Method (SIM) and 8011, respectively, to obtain the lowest possible detection limits.

Soil and rock samples were not retained for analysis of COPCs because no evidence of contamination (e.g., PID readings, odor, visual staining, etc.) was observed during field screening of soil and rock cores. As outlined in the scope of field activities, these media would be analyzed only if presumptive evidence of contamination was evident.

## 2.8 SURVEYING

Surveying of RHMW06 and RHMW07 was conducted in November 2014 and January 2015 by Pacific GPS LLC (Pacific GPS) of Honolulu, Hawaii, a Hawaii-registered land surveyor, to determine horizontal and vertical coordinates of the two monitoring wells. The well coordinates were surveyed with respect to three nearby local reference points recently established by the U.S. Geological Survey (USGS) at the Facility and one existing control monument that was used in earlier surveys of Facility monitoring wells. The monitoring wells were initially surveyed on November 17, 2014 using Global Navigation Satellite System (GNSS) Global Positioning System (GPS) receivers. Groundwater elevations were calculated using the initial GPS survey data and the groundwater table was anomalously higher at downgradient monitoring well RHMW07 than at RHMW06. An optical level survey was performed on January 8, 2015 to check the GPS survey results for both monitoring wells. The optical level survey results confirmed the accuracy of the previously measured well elevations.

The horizontal datum for the reported horizontal coordinates of RHMW06 and RHMW07 is: NAD83 (A11); Epoch of 2010. The vertical datum for the reported elevations of the monitoring wells is: Local Mean Sea Level. The Pacific GPS survey report (2015) including horizontal coordinates and elevations in feet and meters for RHMW06 and RHMW07 and the coordinates and elevations for the USGS reference points is provided in Appendix D.

## 2.9 INVESTIGATION-DERIVED WASTE MANAGEMENT

The IDW characterization and disposal information, including the IDW characterization analytical results and disposal documentation, is provided in Appendix E. The IDW generated during field activities was managed and disposed in accordance with the Final Work Plan (Battelle and Parsons, 2014). IDW included soil and rock cuttings generated during borehole drilling operations, well development and purge water, and decontamination water. Rock cores were retained by NAVFAC Hawaii for future reference.

Pacific Commercial Services LLC (PCS) in Kapolei, Hawaii was subcontracted for IDW services, which included providing waste containers for solids; IDW sampling, characterizing, and profiling, obtaining disposal manifest approvals and signatures from the Navy, and final off-site disposal.

## 2.10 SITE RESTORATION

Site restoration was performed at both monitoring well locations after completion of drilling and monitoring well installation activities. Site restoration included filling all drilling related ruts and general leveling of the ground surface to pre-drilling conditions as needed, and installing new permanent security fencing. The configurations of the realigned permanent security fencing around the monitoring wells were approved by Navy Physical Security. The new permanent security fencing was constructed approximately perpendicular to the existing security fence line, and was installed with a minimum clearance of 10 feet between the new fencing and the monitoring well bollards. The new permanent security fence was constructed in accordance with Navy fencing requirements.

# SECTION 3

# OBSERVATIONS AND ANALYTICAL RESULTS

This section provides descriptions of the geology and hydrogeology in the Facility area; the geology and groundwater conditions observed during the drilling of the two new north perimeter monitoring wells RHMW06 and RHMW07, and the analytical results of initial groundwater samples collected from the wells. The information provided in the Facility area geology and hydrogeology subsection provides background for the discussions in the site geology and groundwater conditions subsection.

## 3.1 FACILITY AREA GEOLOGY AND HYDROGEOLOGY

The geology and hydrogeology in the Facility area are related to basaltic lava flows that originated to the east from the now dormant Koolau volcanic complex in what is now the remnant Koolau Range. The resultant topography, near-surface soils, subsurface sequence of basalt flows, and regional groundwater gradient are related to the generally east-west trending ridges and drainages that formed from gently dipping flows generally oriented in an east-to-west direction from the formerly active volcanic vents.

The Koolau basalts are interbedded pahoehoe and a'a lava flows. The pahoehoe consists of thin-bedded vesicular basalt, while a'a is thicker and consists of dense, locally massive, and less vesicular basalt with volcanic clinker (broken rubbly crust on top of the flow) between successive flows (Hunt, 1996). The a'a flows are generally more prevalent with increased distance from the vents as the magma cools and becomes more viscous and less gaseous. The individual pahoehoe and a'a flows that comprise the Koolau Basalt presumably occur as long, finger-like projections that emanated from the source vents, resulting in separate and distinct, long and narrow flows that coalesce both laterally and vertically, similar to recent flows observed on the island of Hawaii (Hunt, 1996). Therefore, correlation of individual flows in the subsurface is difficult.

Soils formed in place on Oahu basalts and the unsaturated rock beneath the overburden cover are highly permeable and infiltrable, and infiltration follows a rather direct path in the unsaturated zone to groundwater (Mink and Lau, 1990).

Groundwater beneath the Facility is in the Moanalua System of the Honolulu Aquifer sector and the Waiawa System of the Pearl Harbor Aquifer Sector, both of which are typically unconfined basal aquifer systems (TEC, 2007). Basal means that fresh water from direct infiltration floats in and displaces salt water, and the hydraulic head is near sea level. According to the *Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy For Hawaii* (Mink and Lau, 1990), the Facility ridgeline makes up the boundary between the Waimalu System of the Pearl Harbor Aquifer Sector and the Moanalua System of the Honolulu Aquifer Sector. No known groundwater divide exists along this geomorphic boundary and groundwater is believed to flow freely between these two aquifer designations at this boundary (TEC, 2009). In addition, the aquifers are considered irreplaceable drinking water resources, and highly vulnerable to contamination (Mink and Lau, 1990).

The basalt aquifer systems are typically unconfined, except near the coast where the aquifers are locally confined by unconsolidated sediments and consolidated coralline limestone (Hunt, 1996). According to Mink (1999), the a'a lava may act as a very localized confining layer to the basal system with unconfined conditions present just a few feet away (TEC, 2007).

The hydraulic gradient and groundwater flow direction in the narrow east-west trending valleys and drainages of the Koolau Range, such as the Halawa Valley to the north and Moanulua Valley to the south of the Facility are from northeast to southwest toward Pearl Harbor as indicated by Hunt (2004), Oki et. al. (2005), and TEC (2007). A re-evaluation of the groundwater flow direction and gradient conducted by TEC (2010) verified a local flow direction to the west-southwest, parallel to the alignment of the Facility USTs, toward the Navy Red Hill Pumping Station (2254-01). This re-evaluation also showed a suggested regional component flowing to the northwest from the area south of the Facility. The overall regional hydraulic gradient and groundwater flow direction within the adjacent and larger Pearl Harbor Aquifer System northwest of the Facility is also southwesterly toward Pearl Harbor as shown in Hunt (2004).

Several groundwater studies have been performed for the adjacent larger Pearl Harbor Aquifer System. Estimates of hydraulic conductivity derived from transmissivity for the Pearl Harbor Aquifer System are provided in the literature and indicate that the hydraulic conductivity of the system is high. The given range of hydraulic conductivity of the Pearl Harbor aquifer from Oki et. al. (2005) is from 255 feet per day (ft/day) to 1,984 ft/day. Multiple aquifer tests cited by Hunt

(1996) yield a median hydraulic conductivity of 850 ft/day, but there are several individual tests that consistently yielded about 1,600 ft/day. According to Mink and Lau (1990), "all of the main Hawaii aquifers in basalt are extremely permeable with hydraulic conductivities in excess of 1,000 ft/day on a regional scale." Hunt (1996) gives a median total porosity of 43% for the Koolau Basalt and states that the value of effective porosity may be lower by a factor of 10. However, this may only consider primary porosity of the voids, or the rock matrix pore space. Rock, as opposed to unconsolidated sediment, has secondary porosity from fractures, joints, etc. that yields a greater volume of connected porosity available for groundwater storage and flow. The upper range of unconfined storativity or specific yield (the ratio of the volume of water drained by gravity to total volume of aquifer matrix) is 20% with normal values between 5% and 10% (Hunt, 1996).

## 3.2 SITE GEOLOGY, GROUNDWATER OCCURRENCE, AND AQUIFER CHARACTERISTICS

The lithology and stratigraphy of soils, saprolite and basalt, and groundwater occurrence and aquifer characteristics observed at RHMW06 and RHMW07 are discussed in the following subsections.

### 3.2.1 Soils and Saprolite

Near surface soils at both monitoring well locations consist of dark brown to yellowish brown to gray clay with basalt cobbles and boulders to a depth of about 25 feet bgs. The wells are located at the margin of the South Halawa Stream drainage (Figure 1), so the fine-grained sediment may be related to stream or other alluvial deposition within this drainage. Beneath the clay is a mottled yellowish brown to dark yellowish brown saprolitic soil that constitutes a highly decomposed basalt surface. Saprolite is the result of *in situ* chemical weathering of basalt to clay and often maintains the relic structure of the rock. Thin bands of more competent vesicular gray basalt are present within the saprolite. The contact with solid basalt is considered to be about 35 feet bgs at RHMW06 and 27 feet bgs at RHMW07. The saprolite is slightly thicker at RHMW06 as shown on the geologic logs (Appendix A).

### 3.2.2 Basalt

Overall, the basalt at monitoring well locations RHMW06 and RHMW07 is mostly gray and vesicular, and has an aphanitic (very small crystals) texture with few larger mineral crystals.

However, the basalt grades vertically from low density and highly vesicular to dense with few vesicles or other voids, and the vertical variation in density and the amount of voids can be marked over a short distance. The void shapes range from small and spherical to large and irregular. Clinker zones that consist of 10 to 15 feet of loose rock fragments are present in the vertical profile at both well locations. These zones appear to represent broken rubble at the top of flows. This rubble is weakly held together by secondary infilling of soft, red to orange silicate (similar to clay) that is deposited in the spaces between rock fragments. Secondary infilling or mineral deposition (amorphous quartz and zeolite) from infiltrating water in the vadose zone or beneath the water table also is present within voids and along fracture planes within the vesicular basalt. This indicates overall high primary porosity and permeability of the basalt due to its vesicular nature, and secondary porosity and permeability due to fracturing. Photographic documentation of the basalt rock cores is provided in Appendix A.

### 3.2.3 Groundwater Occurrence and Aquifer Characteristics

The groundwater occurrence and apparent aquifer characteristics are different at monitoring wells RHMW06 and RHMW07 and result in a relatively high downgradient water level and calculated groundwater elevation at RHMW07 compared to RHMW06 (Table 1). Groundwater was encountered during drilling at approximately 239 feet bgs at RHMW06 and 193 feet bgs at RHMW07. Differences in depth to water are related to topography as RHMW06 is at a higher elevation than RHMW07. As shown in Table 1, the groundwater elevation of 22.24 feet amsl was present at downgradient monitoring well RHMW07 on October 20, 2014 and is higher than the elevation of 17.80 feet amsl present at upgradient monitoring well RHMW06 on October 21, 2014. The surveyed elevations of the measuring datums were verified as discussed in Subsection 2.8 and Appendix D.

Previous studies show the local hydraulic gradient and groundwater flow direction, based on the existing wells, is west-southwest (TEC, 2010). The overall regional hydraulic gradient and flow direction is southwesterly as discussed in Subsection 3.1, although there is a suggested regional northwest component south of the Facility. This more westerly groundwater flow direction appears to be the result of the Facility's close proximity to the nearby parallel northeast- to southwest-trending drainages, and of groundwater pumping from the Navy's Red Hill Pumping Station (2254-01) located at the western portion of the Facility (Figure 1).

The higher groundwater elevation in RHMW07 compared to RHMW06 likely is due to the apparent lower hydraulic conductivity and permeability of the aquifer at this particular location as discussed in the following paragraphs, although the difference could be due to an unlikely localized and relatively impermeable layer of a'a basalt that confines underlying groundwater or perches groundwater immediately above the basal aquifer resulting in a higher groundwater level at this location.

The inferred permeability and hydraulic conductivity at RHMW06 is high and is relatively low at RHMW07 based on groundwater drawdown during development and sampling. During well development, little to no drawdown was observed at RHMW06, whereas, nearly 10 feet of drawdown of the 20-foot water column occurred at RHMW07 (see forms in Appendix B). The apparent low relative permeability at RHMW07 is anomalous given the inferred generally high permeability and hydraulic conductivity observed elsewhere at the Facility and within the basal aquifer system in general as discussed in Subsection 3.1.

Some of the rock within the saturated zone beneath the static water table does not appear to be fully saturated based on observation of the rock core. Because of the heterogeneity in rock density and the void percentage, size, and shape, some of the basalt appears saturated and some only partially saturated. The rock with relatively high porosity and permeability due to a greater percentage of voids and/or fractures appears to have greater water content. This difference in saturation is more evident at RHMW07 where some of the more dense basalt beneath the static water table appears to have low water content, and this more dense basalt may be a factor for the lower relative permeability at this location. However, the iron oxide mineralization on the basalt core and mineralization along fractures and in voids indicate that groundwater is present at the depth it was first intersected. A thin coating of green to gray to black amorphous silica (quartz) or iron-manganese oxide is observed in most of the voids in rock beneath the water table, and is an indication of saturated or below-water-table conditions. For example, voids just beneath the water table at RHMW07 (193 feet bgs) were coated with this secondary mineralization (see geologic log and photographic documentation in Appendix A).

In addition, differences in water levels or hydraulic head in fractured rock aquifer systems are observed for similar or different rock units with different hydraulic properties. Hydraulic head may be higher in rock units that have lower permeability. The mechanism for variable hydraulic

head in rock of differing permeabilities may be explained by how these differences are related to effective porosity and storage. Normally, storage is proportional to permeability. Given equal volumes of rock – one with high porosity and storage and one with low porosity and storage – the rock with lower storage will have a greater change in hydraulic head for the same given volume of water introduced to the rock.

Although the rock beneath the Facility is all Koolau basalt, the hydraulic conductivity of the rock near the water table at RHMW07 appears to be relatively lower (order of magnitude or more) compared to RHMW06 and other existing monitoring wells. Assuming uniform groundwater recharge from precipitation across the area, the lower relative permeability and likely lower storage at RHMW07, may be the reasons that the hydraulic head is higher at this location.

## 3.3 GROUNDWATER ANALYTICAL RESULTS

The organic COPCs TPH-DRO and 2-methylnaphthalene, as well as acetone, were detected at low concentrations as shown in Table 5. All detections were below the applicable DOH EALs. These detections may be related to the NSF/ANSI Standard 60-approved drilling foam used to increase the efficiency of rock cuttings removal from the open borehole during air rotary rock drilling as discussed in Subsection 2.2.3. The DOH-approved Final Work Plan (Battelle and Parsons, 2014) stated that limited amounts of clean potable water and drilling foam would be used during drilling.

TPH-DRO was not detected in groundwater from RHMW06. Concentrations of TPH-DRO were initially detected in the parent and field duplicate samples collected from RHMW07; however, the observed chromatographic pattern did not match the TPH-DRO standard used by the laboratory for fuel. A tentatively-identified compound search using the TPH-DRO extract and gas chromatography/mass spectrometry analysis identified butoxyacetic acid as the compound causing the abnormal high analytical peak that is present in the C10-C24 carbon range. Butoxyacetic acid is an organic compound that appears on analytical chromatographic patterns within the C10-C24 hydrocarbon range associated with TPH-DRO. However, it is not a fuel compound and is instead a breakdown product of one of the primary components of drilling foam (ethylene glycol monobutyl ether). The peak area of butoxyacetic acid in the chromatogram was removed from the total peak area of TPH-DRO by the laboratory prior to calculation, resulting in final reported

TPH-DRO concentrations of 57 micrograms per liter (μg/L) and 66 μg/L (field duplicate). These values are below the DOH EAL of 100 μg/L for TPH-DRO (Table 5). Further discussion of the process used in determining the impact of the butoxyacetic acid is provided in the TPH-DRO subsection of the data validation report provided in Appendix C.

Biodegradation of the drilling foam at RHMW07 is supported by the field measured values of DO and ORP. Groundwater was aerobic during the well development that occurred shortly after well completion. When RHMW07 was sampled 11 days later, DO levels had dropped from near-saturation levels to almost zero, and the ORP was much lower or less positive (see forms in Appendix B and Table 2). The lower oxygen concentration is indicative that oxygen had been utilized in the biodegradation of the drilling foam components. DO levels in RHMW06 were aerobic and relatively consistent between well development and groundwater sampling.

Groundwater is aerobic when DO concentrations are above approximately 0.5 to 1 mg/L. Groundwater in the Facility area has near-saturation to saturated levels of oxygen as indicated by DO concentrations that range from approximately 8.7 to 9 mg/L in nearby public-supply wells (Hunt, 2004). Organic compounds such as ethylene glycol monobutyl ether as well as petroleum constituents can be biodegraded by aerobic bacteria that are present in aerobic groundwater. Aerobic bacteria utilize DO as part of their metabolic process and require DO concentrations sufficient to maintain this process. Aerobic groundwater is present in RHMW06 and was present in RHMW07 as measured during development and groundwater sampling as shown on the development and sampling forms in Appendix B, and Table 2.

The compound 2-methylnaphthalene was detected in RHMW06 and RHMW07 at the very low parts-per-trillion estimated concentrations of 0.0064 μg/L, and 0.0084 μg/L and 0.0060 μg/L (field duplicate), respectively. These values are substantially below the DOH EAL of 10 μg/L for 2-methylnaphthalene. Normally, this compound is associated with diesel fuels but can be used for other purposes such as in pesticides and as wetting agents in detergents (EPA, 2003). Drilling foam is essentially a foaming detergent. The 2-methylnaphthalene detected in RHMW06 and RHMW07 may have been introduced by the drilling foam.

At RHMW07, acetone was detected at estimated concentrations of 1.9 μg/L in the primary sample and 1.7 μg/L in the duplicate sample. Acetone was not detected in the method blank or other QC samples and was not qualified. However, acetone is a common artifact associated with

laboratory analysis. Acetone is also typically not associated with petroleum releases and the detected concentrations are substantially below the DOH EAL for drinking water as listed in Table 5.

Concentrations of the standard water quality parameters alkalinity, nitrate-nitrite as nitrogen, sulfate, chloride, and methane detected in RHMW06 and RHMW07 also are provided in Table 5.

# SECTION 4

# CONCLUSIONS

Conclusions based on the installation and groundwater sampling of RHMW06 and RHMW07 at the Facility are as follows:

- The objectives to evaluate potential off-site migration of petroleum-related constituents in groundwater, and to provide additional monitoring points to determine the hydraulic head (groundwater levels) at the point locations for potential input into updated groundwater flow and fate and transport models of the area were accomplished by the installation and groundwater sampling of RHMW06 and RHMW07.
- A higher groundwater elevation in downgradient RHMW07 compared to upgradient RHMW06 is present based on measured water levels, and the surveyed and confirmed elevations of the measuring point (sounding tube) datums. The higher hydraulic head or groundwater elevation likely is due to the apparent lower hydraulic conductivity, permeability, and storage in the basalt aquifer at the location of RHMW07.
- Aerobic groundwater is present in RHMW06 and was present in RHMW07 as measured during development and groundwater sampling. DO is constantly being renewed by the groundwater flow through the Facility area and the groundwater in RHMW07 should become aerobic again with time.
- LNAPL was not detected in RHMW06 or RHMW07 during drilling, monitoring well development, and groundwater sampling.
- Groundwater from RHMW06 and RHMW07 was sampled and analyzed for the presence of volatile and semi-volatile petroleum constituents, general chemistry parameters, and dissolved lead. Low-level concentrations of TPH-DRO and acetone were detected in RHMW07, and low-level concentrations of 2-methylnaphthalene were detected in RHMW06 and RHMW07.
- The final reported TPH-DRO concentrations may still represent a small amount of components from drilling foam degradation rather than petroleum constituents. Aerobic biodegradation of the foam should continue, but may diminish with time. Factors that influence the overall rate of attenuation are the groundwater flow rate and related dispersion, dilution, replenishment of DO in groundwater, and the rate of biodegradation under anaerobic conditions. If lower TPH-DRO concentrations are reported or TPH-DRO is not detected during future sampling of RHMW07, it will support the conclusion that the initial TPH-DRO detections were not related to petroleum constituents.

- There is not enough evidence to support that the 2-methylnaphthalene detections in groundwater represent a migrating fuel-related plume consisting of only one petroleum constituent. The 2-methylnaphthalene detected in RHMW06 and RHMW07 may have been introduced by the drilling foam. Naphthalenes have lower solubilities and octanol-water coefficients and greater organic partitioning coefficients than other petroleum constituents, and therefore typically do not migrate as far in groundwater as more mobile petroleum constituents. Typically, naphthalenes are observed co-located with other, more mobile, petroleum constituents, or groundwater conditions indicate that biodegradation of the more mobile constituents is likely on-going (e.g., low DO and ORP). If these low levels of 2-methylnaphthalene were introduced to groundwater from the drilling foam, then its presence in groundwater should be short lived. However, if 2-methylnaphthalene is related to a petroleum release, the concentrations in groundwater should persist and remain relatively constant over time, and other fuel-related constituents may be detected in the future.

# SECTION 5

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# TABLES

# TABLE 1
## GROUNDWATER ELEVATIONS, WELL CONSTRUCTION DETAILS, AND PUMP SETTINGS
**Monitoring Well Installation Report**
**Red Hill Bulk Fuel Storage Facility**
**Joint Base Pearl Harbor-Hickam, Hawaii**

| Monitoring Well | Date mm/dd/yy | Measuring Point Datum (ft amsl-toc) | Depth to Water (ft-btoc) | Groundwater Elevation (ft amsl) | Delta (ft) | Screened Interval Elevation (ft amsl) | Screened Interval Depth (ft-btoc) | Pump Screen Setting (ft-btoc) | Pump Screen Setting (ft-bwt) |
|---|---|---|---|---|---|---|---|---|---|
| RHMW06 | 10/21/14 | 259.01 | 241.21 | 17.80 | | -4.29-25.71 | 233.30-263.30 | 253.00 | 11.79 |
| | 12/09/14 | | 241.12 | 17.89 | 0.09 | | | | 11.88 |
| RHMW07 | 10/20/14 | 220.29 | 198.05 | 22.24 | | 2.69-32.69 | 187.60-217.60 | 208.00 | 9.95 |
| | 10/27/14 | | 198.09 | 22.20 | -0.04 | | | | 9.91 |
| | 12/09/14 | | 198.23 | 22.06 | -0.14 | | | | 9.77 |

**Notes:**
Measuring point datum (toc) is top of sounding tube.
mm/dd/yy-month/day/year; ft-feet; btoc-below top of sounding tube; amsl-above mean sea level; bwt-below water table

# TABLE 2
# GROUNDWATER SAMPLING PARAMETERS
## Monitoring Well Installation Report
## Red Hill Bulk Fuel Storage Facility
## Joint Base Pearl Harbor-Hickam, Hawaii

| Monitoring Well | Date mm/dd/yy | Datum (ft-toc) | Depth to Water (ft-btoc) | Temp ($^{o}$C) | pH (units) | Cond (mS/cm) | DO (mg/L) | Turbidity (NTU) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|
| RHMW06 | 10/21/14 | 259.01 | 241.21 | 23.34 | 7.18 | 1.39 | 6.16 | 1.0 | 187 |
| RHMW07 | 10/20/14 | 220.29 | 198.05 | 23.49 | 7.15 | 1.65 | 0.10 | 0 | 17 |
| | 10/27/14 | | 198.09 | 23.14 | NA | 1.82 | 0.20 | 0 | 44 |

**Notes:** Groundwater parameters were measured with a Horiba U-52 with a flo-thru cell.
RHMW07 was resampled on 10/27/2014 for TPH-GRO only.
Datum is sounding tube elevation and is approximately the same as the TOC or pump setting elevation.

ft - feet
toc - top of sounding tube
btoc - below toc
pH - potential of hydrogen
Cond - specific conductance
DO - dissolved oxygen
ORP - oxidation-reduction potential
NA - not analyzed
Temp - temperature
$^{0}$C - degrees Celsius
(mS/cm) - millisiemens per centimeter
mg/L- milligrams per liter
NTU - nephelometric turbidity units
mV - millivolts

# TABLE 3
# GROUNDWATER ANALYTICAL METHODS, PROJECT ACTION LEVELS, AND LABORATORY SPECIFIC LIMITS

**Monitoring Well Installation Report**
**Red Hill Bulk Fuel Storage Facility**
**Joint Base Pearl Harbor-Hickam, Hawaii**

| Analytes | DOH EAL (µg/L) | | PAL (µg/L) | PQL Goal (µg/L) | Laboratory Specific Limits | | |
|---|---|---|---|---|---|---|---|
| | Drinking Water Toxicity | Gross Contamination | | | LOQ (µg/L) | LOD (µg/L) | MDL (µg/L) |
| **Analytical Group: VOCs (EPA 8260C)** | | | | | | | |
| Acetone | 21,783 | 20,000 | 20,000 | 2,000 | 10.0 | 2.00 | 0.95 |
| Benzene | 5 | 170 | 5 | 0.5 | 0.20 | 0.20 | 0.06 |
| Bromodichloromethane | 0.12 | 50,000 | 0.12 | 0.012 | 1.0 | 0.30 | 0.14 |
| Bromoform | 80 | 510 | 80 | 8 | 1.0 | 0.30 | 0.14 |
| Bromomethane | 8.66 | 50,000 | 8.66 | 0.866 | 2.0 | 0.50 | 0.24 |
| Carbon tetrachloride | 5 | 520 | 5 | 0.5 | 0.10 | 0.10 | 0.03 |
| Chlorobenzene | 100 | 50 | 50 | 5 | 1.0 | 0.50 | 0.21 |
| Chloroethane | 20,857 | 16 | 16 | 1.6 | 1.0 | 0.50 | 0.21 |
| Chloroform | 70 | 2,400 | 70 | 7 | 0.20 | 0.20 | 0.06 |
| Chloromethane | 1.78 | 50,000 | 1.78 | 0.178 | 1.0 | 0.50 | 0.31 |
| cis-1,2-dichloroethylene | 70 | 50,000 | 70 | 7 | 1.0 | 0.30 | 0.16 |
| Dibromochloromethane | 0.16 | 50,000 | 0.16 | 0.016 | 1.0* | 0.30 | 0.19 |
| Dibromo-3-chloropropane, 1,2- | 0.04 | 10 | 0.04 | 0.004 | 2.0* | 1.00 | 0.76 |
| Dichlorobenzene, 1,2- | 600 | 10 | 10 | 1 | 1.0 | 0.30 | 0.17 |
| Dichlorobenzene, 1,3- | 182.5 | 5 | 5 | 0.5 | 1.0 | 0.30 | 0.11 |
| Dichlorobenzene, 1,4- | 75 | 5 | 5 | 0.5 | 1.0 | 0.30 | 0.19 |
| Dichloroethane, 1,1- | 2.42 | 50,000 | 2.42 | 0.0242 | 1.0 | 0.30 | 0.19 |
| Dichloroethane, 1,2- | 0.15 | 7,000 | 0.15 | 0.015 | 0.10 | 0.10 | 0.03 |
| Dichloroethylene, 1,1- | 7 | 1,500 | 7 | 0.7 | 1.0 | 0.50 | 0.30 |
| Dichloropropane, 1,2- | 5 | 10 | 5 | 0.5 | 1.0 | 0.30 | 0.17 |
| Dichloropropene, 1,3- (total) | 0.43 | 50,000 | 0.43 | 0.043 | 1.0* | 0.30 | 0.18 |
| Ethylbenzene | 700 | 30 | 30 | 3 | 1.0 | 0.50 | 0.23 |
| Hexachlorobutadiene | 0.86 | 6 | 0.86 | 0.086 | 1.0* | 0.30 | 0.19 |
| Methyl ethyl ketone (2-butanone) | 7,065 | 8,400 | 7,065 | 706.5 | 10.0 | 2.00 | 0.60 |
| Methyl isobutyl ketone (4-methyl-2-pentanone) | 1,991 | 1,300 | 1,300 | 130 | 10.0 | 5.00 | 1.90 |
| Methyl tert butyl ether | 12 | 5 | 5 | 0.5 | 1.0 | 0.52 | 0.26 |
| Methylene chloride | 4.8 | 9,100 | 4.8 | 0.48 | 5.0* | 1.00 | 0.35 |
| Styrene | 100 | 10 | 10 | 1 | 1.0 | 0.50 | 0.25 |

# TABLE 3 (Continued)

# GROUNDWATER ANALYTICAL METHODS, PROJECT ACTION LEVELS, AND LABORATORY SPECIFIC LIMITS

**Monitoring Well Installation Report**
**Red Hill Bulk Fuel Storage Facility**
**Joint Base Pearl Harbor-Hickam, Hawaii**

| Analytes | DOH EAL (µg/L) | | PAL (µg/L) | PQL Goal (µg/L) | Laboratory Specific Limits | | |
|---|---|---|---|---|---|---|---|
| | Drinking Water Toxicity | Gross Contamination | | | LOQ (µg/L) | LOD (µg/L) | MDL (µg/L) |
| Tetrachloroethane, 1,1,1,2- | 0.52 | 50,000 | 0.52 | 0.052 | 1.0* | 0.30 | 0.13 |
| Tetrachloroethane, 1,1,2,2- | 0.07 | 500 | 0.07 | 0.007 | 1.0* | 0.30 | 0.10 |
| Tetrachloroethylene | 5 | 170 | 5 | 0.5 | 0.30 | 0.30 | 0.08 |
| Toluene | 1,000 | 40 | 40 | 4 | 1.0 | 0.30 | 0.17 |
| trans-1,2-dichloroethylene | 100 | 260 | 100 | 10 | 1.0 | 0.30 | 0.19 |
| Trichlorobenzene, 1,2,4- | 70 | 3,000 | 70 | 7 | 1.0 | 0.50 | 0.21 |
| Trichloroethane, 1,1,1- | 200 | 970 | 200 | 20 | 1.0 | 0.30 | 0.14 |
| Trichloroethane, 1,1,2- | 5 | 50,000 | 5 | 0.5 | 1.0 | 0.50 | 0.20 |
| Trichloroethylene | 5 | 310 | 5 | 0.5 | 1.0 | 0.30 | 0.16 |
| Trichloropropane, 1,2,3- | 0.6 | 50,000 | 0.6 | 0.06 | 2.0* | 1.00 | 0.39 |
| Vinyl chloride | 2 | 3,400 | 2 | 0.2 | 0.10 | 0.10 | 0.03 |
| Xylenes | 10,000 | 20 | 20 | 2 | 2.0 | 0.30 | 0.19 |
| **Analytical Group: EDB (EPA 8011)** | | | | | | | |
| Ethylene dibromide | 0.04 | 50,000 | 0.04 | 0.004 | 0.02 | 0.02 | 0.01 |
| **Analytical Group: PAHs (EPA 8270C SIM)** | | | | | | | |
| Acenaphthene | 370 | 20 | 20 | 2 | 0.02 | 0.01 | 0.005 |
| Acenaphthylene | 240 | 2,000 | 240 | 24 | 0.02 | 0.01 | 0.005 |
| Anthracene | 1,800 | 22 | 22 | 2.2 | 0.02 | 0.01 | 0.005 |
| Benzo[a]anthracene | 0.092 | 4.7 | 0.092 | 0.0092 | 0.02 | 0.01 | 0.005 |
| Benzo[g,h,i]perylene | 1,500 | 0.13 | 0.13 | 0.013 | 0.02 | 0.01 | 0.005 |
| Benzo[a]pyrene | 0.2 | 0.81 | 0.2 | 0.02 | 0.02 | 0.01 | 0.005 |
| Benzo[b]fluoranthene | 0.092 | 0.75 | 0.092 | 0.0092 | 0.02 | 0.01 | 0.005 |
| Benzo[k]fluoranthene | 0.92 | 0.4 | 0.4 | 0.04 | 0.02 | 0.01 | 0.005 |
| Chrysene | 9.2 | 1 | 1 | 0.1 | 0.02 | 0.01 | 0.005 |
| Dibenzo[a,h]anthracene | 0.0092 | 0.52 | 0.0092 | 0.00092 | 0.02* | 0.01 | 0.005 |
| Fluoranthene | 1,500 | 130 | 130 | 13 | 0.02 | 0.01 | 0.005 |
| Fluorene | 240 | 950 | 240 | 24 | 0.02 | 0.01 | 0.005 |
| Ideno[1,2,3-cd]pyrene | 0.092 | 0.095 | 0.092 | 0.0092 | 0.02 | 0.01 | 0.005 |
| methylnaphthalene, 1 | 4.7 | 10 | 4.7 | 0.47 | 0.02 | 0.01 | 0.005 |
| methylnaphthalene, 2 | 24 | 10 | 10 | 1 | 0.02 | 0.01 | 0.005 |
| Naphthalene | 17 | 21 | 17 | 1.7 | 0.02 | 0.01 | 0.005 |

# TABLE 3 (Continued)

# GROUNDWATER ANALYTICAL METHODS, PROJECT ACTION LEVELS, AND LABORATORY SPECIFIC LIMITS

**Monitoring Well Installation Report**
**Red Hill Bulk Fuel Storage Facility**
**Joint Base Pearl Harbor-Hickam, Hawaii**

| Analytes | DOH EAL (µg/L) | | PAL (µg/L) | PQL Goal (µg/L) | Laboratory Specific Limits | | |
|---|---|---|---|---|---|---|---|
| | Drinking Water Toxicity | Gross Contamination | | | LOQ (µg/L) | LOD (µg/L) | MDL (µg/L) |
| Phenanthrene | 240 | 410 | 240 | 24 | 0.02 | 0.01 | 0.005 |
| Pyrene | 180 | 68 | 68 | 6.8 | 0.02 | 0.01 | 0.005 |
| **Analytical Group: TPH (EPA 8015)** | | | | | | | |
| TPH as Gasoline Range Organics | 100 | 100 | 100 | 10 | 50 | 20 | 10 |
| TPH as Diesel Range Organics | 190 | 100 | 100 | 10 | 100 | 75 | 50 |
| TPH as Residual Range Organics | 4,400 | 100 | 100 | 10 | 100 | 75 | 50 |
| **Analytical Group: Metals (EPA 6020)** | | | | | | | |
| Dissolved Lead | 15 | 50,000 | 15 | 1.5 | 3 | 0.4 | 0.19 |
| **General Chemistry** | | | | | | | |
| Methane (RSK-175) | NA | NA | NA | NA | 1.0 | 0.45 | 0.25 |
| Sulfate (9056A) | NA | NA | NA | NA | 1.0 mg/L | 0.198 mg/L | 0.090 mg/L |
| Nitrate/Nitrite (353.2) | NA | NA | NA | NA | 0.1 mg/L | 0.1 mg/L | 0.028 mg/L |
| Alkalinity (SM2320B) | NA | NA | NA | NA | 2.0 mg/L | 1.7 mg/L | 0.85 mg/L |

**Notes:**

HDOH EAL – State of Hawaii Department of Health Hazard Evaluation and Emergency Response Office Environmental Action Levels for sites where groundwater is a current drinking water source and surface water is within 150 meters from the site.

LOD – Limit of Detection

LOQ – Limit of Quantification

MDL – Method Detection Limit

PAL – Project Action Level

PQL – Project Quantification Limit (PQL goals are set at 1/10 of the PALs.)

NA – Not applicable

µg/L – Micrograms per liter

* - In the case where an EAL for a specific chemical is less than the LOQ for a commercial laboratory, it is generally acceptable to consider the LOQ in place of the action level. Dibenzo[a,h]anthracene will be reported down to the detection limit of 0.005 µg/L by the laboratory.

# TABLE 4

## ANALYTICAL METHODS, SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIMES FOR GROUNDWATER SAMPLING

**Monitoring Well Installation Report**
**Red Hill Bulk Fuel Storage Facility**
**Joint Base Pearl Harbor-Hickam, Hawaii**

| Analyte | Number/ Type of Containers per Sample | Preservative | Holding Time | |
|---|---|---|---|---|
| | | | Extraction | Analysis |
| TPH-DRO<br>TPH-RRO | One 1-Liter amber glass | 4° Celsius | 7 days | 40 days |
| TPH-GRO | Three 40-milliliter glass vials with Teflon-lined septum | 4° Celsius | - | 7 days |
| VOCs | Three 40-milliliter glass vials with Teflon-lined septum | 4° Celsius | - | 7 days |
| Methane | Three 40-milliliter glass vials with Teflon-lined septum | 4° Celsius | - | 7 days |
| PAHs | Two 1-liter amber glass bottles | 4° Celsius | 7 days | 40 days |
| Alkalinity/ Sulfate | One 250-milliliter polyethylene bottle | 4° Celsius | - | 14 days/ 28 days |
| EDB | Three 40-milliliter glass vials with Teflon-lined septum | 4° Celsius | - | 7 days |
| Nitrate/Nitrite | One 125-milliliter polyethylene bottle | sulfuric acid | - | 28 days |
| Dissolved Lead | One 500-milliliter polyethylene bottle | $HNO_3$ to pH < 2, $4^{o}$Celsius | -- | 180 days |

TPH-DRO Total Petroleum Hydrocarbon-Diesel Range Organics
TPH-RRO Total Petroleum Hydrocarbon-Residual Range Organics
TPH-GRO Total Petroleum Hydrocarbon-Gasoline Range Organics
PAH Polycyclic Aromatic Hydrocarbons
VOC Volatile Organic Hydrocarbons
EDB Ethylene Dibromide
$HNO_3$ Nitric Acid
HCl Hydrochloric Acid
**Note:** Dissolved lead was field-filtered, except for fire hydrant sample.

# TABLE 5
## ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING (OCTOBER 2014)
### Monitoring Well Installation Report
### Red Hill Bulk Fuel Storage Facility
### Joint Base Pearl Harbor-Hickam, Hawaii

| Method | Chemical | DOH EALs | | RHMW06-GW-01 (J144-01/AZ05593) | | | | | RHMW07-GW-01 (J130-01/J206-01/AZ05388) | | | | | RHMW07-GW-01FD* (J130-02/J206-01/AZ05389) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Drinking Water Toxicity | Gross Contamination | Result | Qualifier | LOQ | LOD | DL | Result | Qualifier | LOQ | LOD | DL | Result | Qualifier | LOQ | LOD | DL |
| EPA 8015B | TPH as Gasoline Range Organics C6-C10 | 100 | 100 | N.D. | U | 50 | 20 | 10 | N.D. | U | 50 | 20 | 10 | N.D. | U | 50 | 20 | 10 |
| | TPH as Diesel Range Organics C10-C24 | 190 | 100 | N.D. | U | 120 | 86 | 58 | **57** | **J** | 100 | 78 | 52 | **66** | **J** | 100 | 77 | 52 |
| | TPH as Residual Range Organics C24-C36 | 4,400 | 100 | N.D. | U | 120 | 86 | 58 | N.D. | U | 100 | 78 | 52 | N.D. | U | 100 | 77 | 52 |
| EPA 8270C-SIM | 1-Methylnaphthalene | 4.7 | 10 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | 2-Methylnaphthalene | 24 | 10 | **0.0064** | **J** | 0.021 | 0.011 | 0.0053 | **0.0084** | **J** | 0.019 | 0.0096 | 0.0048 | **0.0060** | **J** | 0.020 | 0.010 | 0.0050 |
| | Acenaphthene | 370 | 20 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Acenaphthylene | 240 | 2,000 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Anthracene | 1,800 | 22 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Benzo[a]anthracene | 0.092 | 4.7 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Benzo[a]pyrene | 0.2 | 0.81 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Benzo[b]fluoranthene | 0.092 | 0.75 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Benzo[g,h,i]perylene | 1,500 | 0.13 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Benzo[k]fluoranthene | 0.92 | 0.4 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Chrysene | 9.2 | 1 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Dibenzo[a,h]anthracene[1] | 0.0092 | 0.52 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Fluoranthene | 1,500 | 130 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Fluorene | 240 | 950 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Indeno[1,2,3-cd]pyrene | 0.092 | 0.095 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Naphthalene | 17 | 21 | N.D. | U | 0.11 | 0.053 | 0.027 | N.D. | U | 0.096 | 0.048 | 0.024 | N.D. | U | 0.10 | 0.050 | 0.025 |
| | Phenanthrene | 240 | 410 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| | Pyrene | 180 | 68 | N.D. | U | 0.021 | 0.011 | 0.0053 | N.D. | U | 0.019 | 0.0096 | 0.0048 | N.D. | U | 0.020 | 0.010 | 0.0050 |
| EPA 8011 | 1,2-Dibromo-3-chloropropane | 0.04 | 10 | N.D. | U | 0.02 | 0.019 | 0.007 | N.D. | U | 0.02 | 0.019 | 0.007 | N.D. | U | 0.02 | 0.019 | 0.007 |
| | 1,2-Dibromoethane | 0.04 | 50,000 | N.D. | U | 0.02 | 0.020 | 0.010 | N.D. | U | 0.02 | 0.020 | 0.010 | N.D. | U | 0.02 | 0.020 | 0.010 |
| EPA 8260C | 1,1,1,2-Tetrachloroethane | 0.52 | 50,000 | N.D. | U | 1.0 | 0.30 | 0.13 | N.D. | U | 1.0 | 0.30 | 0.13 | N.D. | U | 1.0 | 0.30 | 0.13 |
| | 1,1,1-Trichloroethane | 200 | 970 | N.D. | U | 1.0 | 0.30 | 0.14 | N.D. | U | 1.0 | 0.30 | 0.14 | N.D. | U | 1.0 | 0.30 | 0.14 |
| | 1,1,2,2-Tetrachloroethane[1] | 0.07 | 500 | N.D. | U | 1.0 | 0.30 | 0.10 | N.D. | U | 1.0 | 0.30 | 0.10 | N.D. | U | 1.0 | 0.30 | 0.10 |
| | 1,1,2-Trichloroethane | 5 | 50,000 | N.D. | U | 1.0 | 0.50 | 0.20 | N.D. | U | 1.0 | 0.50 | 0.20 | N.D. | U | 1.0 | 0.50 | 0.20 |
| | 1,1-Dichloroethane | 2.42 | 50,000 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 |
| | 1,1-Dichloroethylene | 7 | 1,500 | N.D. | U | 1.0 | 0.50 | 0.30 | N.D. | U | 1.0 | 0.50 | 0.30 | N.D. | U | 1.0 | 0.50 | 0.30 |
| | 1,2,3-Trichloropropane[1] | 0.6 | 50,000 | N.D. | U | 2.0 | 1.00 | 0.39 | N.D. | U | 2.0 | 1.00 | 0.39 | N.D. | U | 2.0 | 1.00 | 0.39 |
| | 1,2,4-Trichlorobenzene | 70 | 3,000 | N.D. | U | 1.0 | 0.50 | 0.21 | N.D. | U | 1.0 | 0.50 | 0.21 | N.D. | U | 1.0 | 0.50 | 0.21 |
| | 1,2-Dibromo-3-chloropropane[1] | 0.04 | 10 | N.D. | U | 2.0 | 1.00 | 0.76 | N.D. | U | 2.0 | 1.00 | 0.76 | N.D. | U | 2.0 | 1.00 | 0.76 |
| | 1,2-Dibromoethane[1] | 0.04 | 50,000 | N.D. | U | 1.0 | 0.50 | 0.20 | N.D. | U | 1.0 | 0.50 | 0.20 | N.D. | U | 1.0 | 0.50 | 0.20 |
| | 1,2-Dichlorobenzene | 600 | 10 | N.D. | U | 1.0 | 0.30 | 0.17 | N.D. | U | 1.0 | 0.30 | 0.17 | N.D. | U | 1.0 | 0.30 | 0.17 |
| | 1,2-Dichloroethane | 0.15 | 7,000 | N.D. | U | 0.10 | 0.100 | 0.030 | N.D. | U | 0.10 | 0.100 | 0.030 | N.D. | U | 0.10 | 0.100 | 0.030 |
| | 1,2-Dichloropropane | 5 | 10 | N.D. | U | 1.0 | 0.30 | 0.17 | N.D. | U | 1.0 | 0.30 | 0.17 | N.D. | U | 1.0 | 0.30 | 0.17 |
| | 1,3-Dichlorobenzene | 182.5 | 5 | N.D. | U | 1.0 | 0.30 | 0.11 | N.D. | U | 1.0 | 0.30 | 0.11 | N.D. | U | 1.0 | 0.30 | 0.11 |
| | 1,3-Dichloropropene (total) | 0.43 | 50,000 | N.D. | U | 1.0 | 0.30 | 0.18 | N.D. | U | 1.0 | 0.30 | 0.18 | N.D. | U | 1.0 | 0.30 | 0.18 |
| | 1,4-Dichlorobenzene | 75 | 5 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 |
| | Acetone | 21,783 | 20,000 | N.D. | U | 10.0 | 2.00 | 0.95 | **1.9** | **J** | 10.0 | 2.00 | 0.95 | **1.7** | **J** | 10.0 | 2.00 | 0.95 |
| | Benzene | 5 | 170 | N.D. | U | 0.20 | 0.200 | 0.060 | N.D. | U | 0.20 | 0.200 | 0.060 | N.D. | U | 0.20 | 0.200 | 0.060 |

# TABLE 5 (Continued)
## ANALYTICAL RESULTS FOR GROUNDWATER SAMPLING (OCTOBER 2014)
### Monitoring Well Installation Report
### Red Hill Bulk Fuel Storage Facility
### Joint Base Pearl Harbor-Hickam, Hawaii

| Method | Chemical | DOH EALs | | RHMW06-GW-01 (J144-01/AZ05593) | | | | | RHMW07-GW-01 (J130-01/J206-01/AZ05388) | | | | | RHMW07-GW-01FD* (J130-02/J206-01/AZ05389) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Drinking Water Toxicity | Gross Contamination | Result | Qualifier | LOQ | LOD | DL | Result | Qualifier | LOQ | LOD | DL | Result | Qualifier | LOQ | LOD | DL |
| EPA 8260C (Continued) | Bromodichloromethane[1] | 0.12 | 50,000 | N.D. | U | 1.0 | 0.30 | 0.14 | N.D. | U | 1.0 | 0.30 | 0.14 | N.D. | U | 1.0 | 0.30 | 0.14 |
| | Bromoform | 80 | 510 | N.D. | U | 1.0 | 0.30 | 0.14 | N.D. | U | 1.0 | 0.30 | 0.14 | N.D. | U | 1.0 | 0.30 | 0.14 |
| | Bromomethane | 8.66 | 50,000 | N.D. | U | 2.0 | 0.50 | 0.24 | N.D. | U | 2.0 | 0.50 | 0.24 | N.D. | U | 2.0 | 0.50 | 0.24 |
| | Carbon tetrachloride | 5 | 520 | N.D. | U | 0.10 | 0.100 | 0.030 | N.D. | U | 0.100 | 0.100 | 0.030 | N.D. | U | 0.100 | 0.100 | 0.030 |
| | Chlorobenzene | 100 | 50 | N.D. | U | 1.0 | 0.50 | 0.21 | N.D. | U | 1.0 | 0.50 | 0.21 | N.D. | U | 1.0 | 0.50 | 0.21 |
| | Chloroethane | 20,857 | 16 | N.D. | U | 1.0 | 0.50 | 0.21 | N.D. | U | 1.0 | 0.50 | 0.21 | N.D. | U | 1.0 | 0.50 | 0.21 |
| | Chloroform | 70 | 2,400 | N.D. | U | 0.2 | 0.20 | 0.06 | N.D. | U | 0.2 | 0.20 | 0.06 | N.D. | U | 0.2 | 0.20 | 0.06 |
| | Chloromethane | 1.78 | 50,000 | N.D. | U | 1.0 | 0.50 | 0.31 | N.D. | U | 1.0 | 0.50 | 0.31 | N.D. | U | 1.0 | 0.50 | 0.31 |
| | cis-1,2-Dichloroethylene | 70 | 50,000 | N.D. | U | 1.0 | 0.30 | 0.16 | N.D. | U | 1.0 | 0.30 | 0.16 | N.D. | U | 1.0 | 0.30 | 0.16 |
| | Dibromochloromethane[1] | 0.16 | 50,000 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 |
| | Ethylbenzene | 700 | 30 | N.D. | U | 1.0 | 0.50 | 0.23 | N.D. | U | 1.0 | 0.50 | 0.23 | N.D. | U | 1.0 | 0.50 | 0.23 |
| | Hexachlorobutadiene | 0.86 | 6 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 |
| | Methyl ethyl ketone (2-butanone) | 7,065 | 8,400 | N.D. | U | 10.0 | 2.00 | 0.60 | N.D. | U | 10.0 | 2.00 | 0.60 | N.D. | U | 10.0 | 2.00 | 0.60 |
| | Methyl isobutyl ketone (4-methyl-2-pentanone) | 1,991 | 1,300 | N.D. | U | 10.0 | 5.00 | 1.90 | N.D. | U | 10.0 | 5.00 | 1.90 | N.D. | U | 10.0 | 5.00 | 1.90 |
| | Methyl tert butyl ether | 12 | 5 | N.D. | U | 1.0 | 0.52 | 0.26 | N.D. | U | 1.0 | 0.52 | 0.26 | N.D. | U | 1.0 | 0.52 | 0.26 |
| | Methylene chloride | 4.8 | 9,100 | N.D. | U | 5.0 | 1.00 | 0.35 | N.D. | U | 5.0 | 1.00 | 0.35 | N.D. | U | 5.0 | 1.00 | 0.35 |
| | Styrene | 100 | 10 | N.D. | U | 1.0 | 0.50 | 0.25 | N.D. | U | 1.0 | 0.50 | 0.25 | N.D. | U | 1.0 | 0.50 | 0.25 |
| | Tetrachloroethylene | 5 | 170 | N.D. | U | 0.3 | 0.30 | 0.08 | N.D. | U | 0.3 | 0.30 | 0.08 | N.D. | U | 0.3 | 0.30 | 0.08 |
| | Toluene | 1,000 | 40 | N.D. | U | 1.0 | 0.30 | 0.17 | N.D. | U | 1.0 | 0.30 | 0.17 | N.D. | U | 1.0 | 0.30 | 0.17 |
| | trans-1,2-dichloroethylene | 100 | 260 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 | N.D. | U | 1.0 | 0.30 | 0.19 |
| | Trichloroethylene | 5 | 310 | N.D. | U | 1.0 | 0.30 | 0.16 | N.D. | U | 1.0 | 0.30 | 0.16 | N.D. | U | 1.0 | 0.30 | 0.16 |
| | Vinyl chloride | 2 | 3,400 | N.D. | U | 0.1 | 0.10 | 0.03 | N.D. | U | 0.1 | 0.10 | 0.03 | N.D. | U | 0.1 | 0.10 | 0.03 |
| | Xylenes | 10,000 | 20 | N.D. | U | 2.0 | 0.30 | 0.19 | N.D. | U | 2.0 | 0.30 | 0.19 | N.D. | U | 2.0 | 0.30 | 0.19 |
| EPA RSK-175 | Methane | NA | NA | **1.7** | | 1.0 | 0.45 | 0.25 | **1.9** | **J** | 1.0 | 0.45 | 0.25 | **2.8** | **J** | 1.0 | 0.45 | 0.25 |
| EPA 6020A | Dissolved Lead | 15 | 50,000 | N.D. | U | 6.0 | 0.80 | 0.38 | N.D. | U | 6.0 | 0.80 | 0.38 | N.D. | U | 6.0 | 0.80 | 0.38 |
| EPA 9056 | Chloride | NA | NA | **319,000** | | 10,000 | 2,000 | 800 | **362,000** | | 10,000 | 2,000 | 800 | -- | -- | -- | -- | -- |
| | Sulfate | NA | NA | **66,600** | | 2,000 | 396 | 180 | **63,500** | | 2,000 | 396 | 180 | **64,200** | | 2,000 | 396 | 180 |
| EPA 353.2 | Nitrate/Nitrite as N | NA | NA | **530** | | 100 | 100 | 28 | **63** | **J** | 100 | 100 | 28 | **55** | **J** | 100 | 100 | 28 |
| EPA A2320B | Alkalinity | NA | NA | **118,000** | | 2,000 | 1,700 | 850 | **177,000** | | 2000 | 1700 | 850 | **184,000** | | 2,000 | 1,700 | 850 |

**QA Notes:**

| | |
|---|---|
| DOH EALs | State of Hawaii Department of Health Hazard Evaluation and Emergency Response Office Environmental Action Levels for sites where groundwater is a current drinking water source and surface water is within 150 meters from the site (January 2012). |
| LOQ | Limit of Quantitation |
| LOD | Limit of Detection |
| DL | Detection Limit or Method Detection Limit (MDL) |
| [1] | The LOD for this analyte exceeds the DOH EAL |
| -- | Not analyzed. |
| NA | HDOH EAL Not Available |
| * | Field duplicate of sample on left |

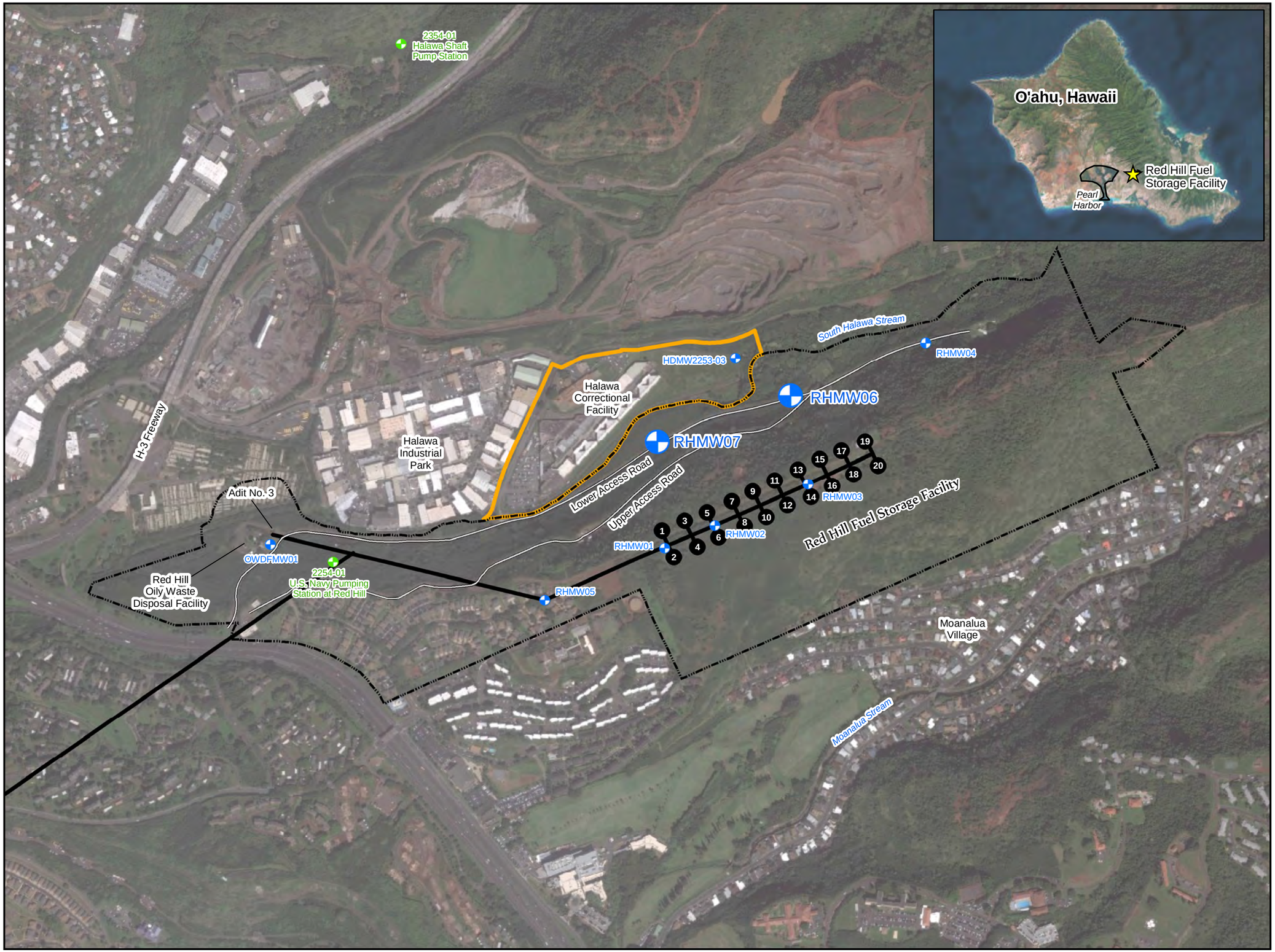
**Data Qualifiers:**

The data are in micrograms per liter (µg/L).

| | |
|---|---|
| N.D. | Not detected. |
| U | Analyte was not detected above the DL and is reported as less than the LOD. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |

**Detections are bolded**

# FIGURES




## LEGEND

- New Monitoring Well
- Existing Monitoring Well
- Pumping Station
- Red Hill UST ID Number
- Red Hill Tunnels
- Access Road
- Halawa Correctional Facility Boundary
- Boundary of Red Hill Fuel Storage Facility

0 375 750 Feet

N

**FIGURE 1**

**MONITORING WELL LOCATIONS**

Monitoring Well Installation Report
Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor - Hickam
Hawaii

**PARSONS**

South Jordan, Utah

X:\GISCADD\projects\Red_Hill\Mapfiles\Mon_Well_Install\RH_new_MW.mxd 2/25/2015

RHMW07

**FIGURE 2**

**MONITORING WELL SURFACE COMPLETION**

Monitoring Well Installation Report
Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor - Hickam
Hawaii

**PARSONS**

South Jordan, Utah

draw\749435 MWIR.cdr ma 02/24/2015

# APPENDIX A

# GEOLOGIC BORING LOGS WITH WELL CONSTRUCTION DETAILS

# PHOTOGRAPHIC DOCUMENTATION OF ROCK CORE

**RHMW06 Core Photographs**
**RHMW07 Core Photographs**

# GEOLOGIC BORING LOGS WITH WELL CONSTRUCTION DIAGRAMS

# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 28-Aug-14<br>DATE COMPLETED: 17-Sept-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 1 OF 10<br>WELL NO.: RHMW06 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 255.81 ft amsl<br>SOUNDING TUBE ELEV.: 259.01 ft | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Auger, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air | NORTHING: 75327.83<br>EASTING: 1676274.17 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 0 | (0.0, 10.0) Clay | | CLAY | | | | SURFACE COMPLETION: 3.5' x 3.5' x 2' concrete pad w/ 8" above-ground steel casing |
| 5 | | | | | | | WELL CASING: Material: SCH. 80 PVC; Diameter: 4"; Interval: +3.2-230 bgs |
| 10 | (10.0, 11.5) Clay: dark brown, CL, little silt, plastic, small rounded pebbles, poor recovery, Note: basalt cobbles and boulders within clay are present from ground surface to the saprolite contact | | CLAY | 0.0 | 12/19/19 | | WELL SCREEN: Material: SCH. 80 PVC; Screen Opening: 0.020; Diameter: 4"; Interval: 230-260 bgs |
| | (11.5, 15.0) Clay | | CLAY | | | | |
| 15 | (15.0, 16.5) Clay: dark yellowish brown, CH, stiff, plastic, small angular rock fragments, poor recovery | | | | 21/25/100 for 4" | | CONDUCTOR CASING: Material: PVC; Diameter: 10"; Interval: 0-40 bgs |
| | (16.5, 20.0) Clay | | | | | | |
| 20 | (20.0, 21.5) Clay: dark yellowish brown to gray, friable, dry | | CLAY | 0.0 | | | DEPTH INTERVAL: Concrete: 0-3; Cement Grout: 3-40 bgs; Bentonite Chips: 40-215 bgs; Bentonite Seal: 215-223 bgs; Sand Pack: 223-269 bgs; Hole Cuttings: 269-270 bgs |
| | (21.5, 23.0) Clay | | CLAY | 0.0 | | | |
| | (23.0, 24.5) Clay: gray basalt in tip, cobble (?), only tip recovery | | SAPR | 0.0 | | | |
| 25 | (24.5, 35.0) Saprolite: start coring, in and out of weathered basalt and saprolite, mottled yellowish to dark yellowish brown saprolite, thin bands of gray vesicular basalt, solid rock contact at about 35 feet bgs, NOTE: THE GSA ROCK COLOR CHART (1991) WAS USED FOR THE FOLLOWIING WET COLOR DESCRIPTIONS | | VLBA | 0.0 | | | **NOTE:** All intervals are measured from ground surface. |
| 30 | | | | | | | |

amsl - Above Mean Sea Level
bgs - Below Ground Surface
ft - feet
mm - millimeter(s)
N/A - Not Applicable
NS - Not Sampled
PID - Photoionization Detector
ppmv - Parts per Million, Volume per Volume
SAA - Same as Above
Horizontal Survey System: NAD 83 Epoch 2010.0
Elevations: Local Mean Sea Level (feet)

DP - Direct Push
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
TD - Total Depth
HS - Head Space
ERPIMS CODE DESCRIPTIONS:
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CLSD - Clay and Sand
CLSL - Clay and Silt

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COBL - Cobble or Boulder
CORL - Coral
FILL - Fill or other Man-Made Deposits
GVL - Gravel
GVLP - Gravel, predominantly pebble-sized
GVSL - Gravel and Silt
NDPS - No Description Provided, Problems in Sampling
NSNR - No Sample or No Recovery Obtained
PTHM - Peat, Humus, and other Organic Material
SAPR - Saprolite

SD - Sand
SDSL - Sand and Silt
SDGR - Sand and Gravel
SEDU - Sedimentary (Undifferentiated)
SLCL - Silt and Clay
SLGV - Silt and Gravel
SLSD - Silt and Sand
VLBA - Basalt, Lava
VLTF - Volcanic Tuff

# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 28-Aug-14<br>DATE COMPLETED: 17-Sept-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 2 OF 10<br>WELL NO.: RHMW06 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 255.81 ft amsl<br>SOUNDING TUBE ELEV.: 259.01 ft | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Auger, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air | NORTHING: 75327.83<br>EASTING: 1676274.17 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 30 | | | | | | | |
| 35 | (35.0, 40.0) Basalt: olive gray, 5Y 4/1, pumice-like vesicular with small semi-round voids, vertical fracture at 37 ft with iron stained and weathered surfaces, 3 ft. recovery | | | | 75% | | |
| 40 | (40.0, 45.0) Basalt : SAA, vesicular with 30% small and round voids, competent, infilled voids near bottom at 44 ft. | | | | 90% | | |
| 45 | (45.0, 50.0) Basalt: SAA, vesicular with up to 35% voids, variable size and shape voids-some larger than 5 mm., moderate strength w/ mechanical fractures | | VLBA | 0.0 | 80% | | |
| 50 | (50.0, 55.0) Basalt: olive gray to greenish gray, dense, 10% voids, oblique fractures w/ weathered surfaces, drilling water return | | VLBA | 0.0 | 50% | | |
| 55 | (55.0, 60.0) Basalt: greenish gray and dense from 55-57, up to 1 in. vugs w/ some secondary infilling, transitions back to olive gray vesicular basalt | | VLBA | 0.0 | NA | | |
| 60 | | | | | | | |

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ppmv - Parts per Million, Volume per Volume
SAA - Same as Above
Horizontal Survey System: NAD 83 Epoch 2010.0
Elevations: Local Mean Sea Level (feet)

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SSA - Solid Stem Auger
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CLSL - Clay and Silt

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COBL - Cobble or Boulder
CORL - Coral
FILL - Fill or other Man-Made Deposits
GVL - Gravel
GVLP - Gravel, predominantly pebble-sized
GVSL - Gravel and Silt
NDPS - No Description Provided, Problems in Sampling
NSNR - No Sample or No Recovery Obtained
PTHM - Peat, Humus, and other Organic Material
SAPR - Saprolite

SD - Sand
SDSL - Sand and Silt
SDGR - Sand and Gravel
SEDU - Sedimentary (Undifferentiated)
SLCL - Silt and Clay
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VLBA - Basalt, Lava
VLTF - Volcanic Tuff

# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 28-Aug-14<br>DATE COMPLETED: 17-Sept-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 3 OF 10<br>WELL NO.: RHMW06 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 255.81 ft amsl<br>SOUNDING TUBE ELEV.: 259.01 ft | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Auger, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air | NORTHING: 75327.83<br>EASTING: 1676274.17 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 60 | (60.0, 65.0) Basalt: olive gray, vesicular w/ 30% small round voids, iron-stained voids and natural fractures from 63-65 ft. | | VLBA | 0.0 | 75% | | |
| 65 | (65.0, 70.0) Basalt: SAA, large angled fracture at 67.5 ft., voids infilled with white mineral, grades to non-vesicular and more dense at 69 ft. | | VLBA | 0.0 | 80% | | |
| 70 | (70.0, 75.0) Basalt: lost core, trip out, recover 2 ft. of gray vesicular basalt | | VLBA | 0.0 | NA | | |
| 75 | (75.0, 80.0) Basalt: brownish black 5YR 2/1, vesicular, grades to brownish gray 5YR 4/1 with larger voids at 76 ft., some secondary infilling of voids from 76-77 ft, some fractures | | VLBA | 0.0 | 75% | | |
| 80 | (80.0, 85.0) Basalt: grayish black (N2), dense, vugs with pristine "needle-like" zeolite cyrstals, light coating of white to bluish gray amporphous silica within voids indicative of the movement of water, large fracture at 82 ft. with secondary rust colored mineralization | | VLBA | 0.0 | 80% | | |
| 85 | (85.0, 90.0) Basalt: dark gray (N3), hard, dense, competent, 10% open voids, as large as 5 mm., some infilling of voids with amorphous quartz or zeolite, 10% slightly weathered olivine phenocrysts, Note: first occurrence of phenocrysts, rock above is aphanitic w/ very few phenocryts | | VLBA | 0.0 | 80% | | |
| 90 | | | | | | | |

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# GEOLOGIC LOG

DATE STARTED: 28-Aug-14
DATE COMPLETED: 17-Sept-14

LOGGER: TM Jensen
WEATHER: 90 degrees Fahrenheit



WELL NO.: RHMW06

COMPANY NAME: PARSONS
OFFICE LOCATION: South Jordan, Utah
PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01
LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435

DRILLING SUBCONTRACTOR: Valley Well Drilling
DRILL RIG TYPE: Mobile B-59 and B-90
DRILLING METHOD: Auger, HQ core, Air Rotary
BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air

SURFACE ELEV.: 255.81 ft amsl
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EASTING: 1676274.17

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 90 | (90.0, 93.0) Basalt: partial run, SAA, transitions to as much as 35% voids, zones where voids are infilled with reddish orange clay-like soft silica, large infilled fracture at 90-91 ft. | | VLBA | 0.0 | 80% | | |
| | (93.0, 98.0) Basalt: SAA, 25 % voids, range from 1 mm. to 8 mm., zones w/ infilling of voids, few fractures | | VLBA | 0.0 | 90% | | |
| 95 | | | | | | | |
| | (98.0, 100.0) Basalt: SAA, few healed or infilled fracture zones | | VLBA | | 60% | | |
| 100 | (100.0, 105.0) Basalt: SAA, grades dense, competent, and unweathered at 104 ft., cyrstalline texture, few olivine phenocrysts, lost circulation, switched over to all water and no air | | VLBA | 0.0 | 75% | | |
| 105 | (105.0, 110.0) Basalt: SAA, grades from dense and hard to low density and weak pumice-like vesicular w/ 50% small and round voids at 109 ft. | | VLBA | 0.0 | 85% | | |
| 110 | (110.0, 115.0) Basalt: SAA, dark gray vesicular, zones with reddish orange soft silica along fractures and in voids, 6 in. clay zone at 114 ft., possibly a weathered zone between flows | | VLBA | 0.0 | 50% | | |
| 115 | (115.0, 120.0) Basalt: SAA, dark gray, variable void percentage througout, mechanical breaks, reddish orange soft silica where weathered | | VLBA | 0.0 | 60% | | |
| 120 | | | | | | | |

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| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 120 | (120.0, 125.0) Basalt: SAA, washout from 123-124 ft., 60% recovery | | VLBA | 0.0 | 50% | | |
| 125 | (125.0, 130.0) Basalt: dark gray (N3), stronger rock, 25% voids, large irregular voids up to 10 mm., fresh high-angle fracture at 128.5 ft., minor infilling of voids at 129 ft. w/ reddish orange soft silica, mechanical breaks | | VLBA | 0.0 | 85% | | |
| 130 | (130.0, 135.0) Basalt: dark gray (N3), overall brown from oxidation, looks like broken up rubble zone at top of flow, lava inclusions, secondary infilling in weak zones | | VLBA | 0.0 | 40% | | |
| 135 | (135.0, 140.0) Basalt: dark gray (N3), harder and dense, vesicular basalt, 20% voids, two high-angle fractures at 139 ft., coated fracture surfaces and some infilling of voids | | VLBA | 0.0 | 85% | | |
| 140 | (140.0, 145.0) Basalt: SAA, aphanitic-crystalline texture, dense, irregular voids, a few fresh fractures w/light iron-oxide staining | | VLBA | 0.0 | 80% | | |
| 145 | (145.0, 150.0) Basalt: dark gray, compentent, moderate strength, mechanical breaks, not much infilling of voids | | VLBA | 0.0 | 90% | | |
| 150 | | | | | | | |

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bgs - Below Ground Surface
ft - feet
mm - millimeter(s)
N/A - Not Applicable
NS - Not Sampled
PID - Photoionization Detector
ppmv - Parts per Million, Volume per Volume
SAA - Same as Above
Horizontal Survey System: NAD 83 Epoch 2010.0
Elevations: Local Mean Sea Level (feet)

DP - Direct Push
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
TD - Total Depth
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ERPIMS CODE DESCRIPTIONS:
ASPT - Asphalt
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SLSD - Silt and Sand
VLBA - Basalt, Lava
VLTF - Volcanic Tuff

# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 28-Aug-14<br>DATE COMPLETED: 17-Sept-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 6 OF 10<br>WELL NO.: RHMW06 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 255.81 ft amsl<br>SOUNDING TUBE ELEV.: 259.01 ft | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Auger, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air | NORTHING: 75327.83<br>EASTING: 1676274.17 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 150 | (150.0, 155.0) Basalt: dark gray, crystalline, dense, some olivine, 5% voids, mechanical breaks | | VLBA | 0.0 | 80% | | |
| 155 | (155.0, 160.0) Clinker: switched bits and went to air, poor recovery, bad core resulting from air coring, rounded, red rock possibly clinker | | VLBA | 0.0 | NA | | |
| 160 | (160.0, 163.0) Clinker: grayish red 10R 4/2 clinker, lost water circulation, diesel odor in ambient air from apparent venting of tanks | | VLBA | BG=1.5 | NA | | |
| 165 | (163.0, 168.0) Basalt: dark gray, hard, dense, crystalline texture, some quartz, 10% voids, trace secondary black mineral coating, fresh fractures w/ little secondary mineralization on surfaces, PID interference from background fumes in ambient air | | VLB | BG=27 | 90% | | |
| | (168.0, 170.0) Basalt: SAA, finish run, silica-coated vertical fracture, some mechanical breaks | | VLBA | 0.0 | | | |
| 170 | (170.0, 175.0) Basalt: SAA, dark gray, two healed fractures from 170-171, grades to rubbly broken zone, weathered rock and mud from 172-175, poor recovery | | VLBA | 0.0 | NA | | |
| 175 | (175.0, 180.0) Basalt: dark gray and less compentent pumice-like vesicular w/ about 30% small round voids, few thin broken zones, several healed fractures | | VLBA | 0.0 | 50% | | |
| 180 | | | | | | | |

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| GEOLOGIC LOG | DATE STARTED: 28-Aug-14<br>DATE COMPLETED: 17-Sept-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 7 OF 10<br>WELL NO.: RHMW06 |
|---|---|---|---|
| COMPANY NAME: **PARSONS** | | DRILLING SUBCONTRACTOR: Valley Well Drilling | SURFACE ELEV.: 255.81 ft amsl |
| OFFICE LOCATION: South Jordan, Utah | | DRILL RIG TYPE: Mobile B-59 and B-90 | SOUNDING TUBE ELEV.: 259.01 ft |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01 | | DRILLING METHOD: Auger, HQ core, Air Rotary | NORTHING: 75327.83 |
| LOCATION: Red Hill BFSF, HI | JOB NUMBER: 749435 | BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air | EASTING: 1676274.17 |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 180 | (180.0, 185.0) Basalt: dark gray vesicular, variable void percentage, broken zone from 181-183 ft., fractures and voids infilled with reddish orange soft silica | | VLBA | 0.0 | 50% | | |
| 185 | (185.0, 190.0) Basalt: SAA, grades to brownish gray then back to dark gray, less voids from 190-192 ft, fractured w/ gouged slickenside surfaces at 193 ft., infilling of voids with soft silica | | VLBA | 0.0 | 70% | | |
| 190 | (190.0, 195.0) Basalt: dark gray (N3), vesicular, variable void size, shape, and percentage, more compentent, fractures at 194 ft., coated fracture surface with reddish orange silica and black oxides and infilling of voids below fractures, mechanical breaks, | | VLBA | 0.0 | 70% | | |
| 195 | (195.0, 200.0) Basalt: dark gray, vesicular, larger connected voids, dense, light olive brown coating in voids indicative of the movement of water, some olivine, few horizontal fractures | | VLBA | 0.0 | 50% | | |
| 200 | (200.0, 205.0) Basalt: dark gray (N3), cyrstalline texture, compentent and consistent core, subtle flow layering w/ stretched voids, horizontal fractures from 200-201 feet, secondary black oxides | | VLBA | 0.0 | 90% | | |
| 205 | (205.0, 210.0) Basalt: dark gray, weathered w/ secondary infilling, broken zones | | VLBA | 0.0 | 50% | | |
| 210 | | | | | | | |

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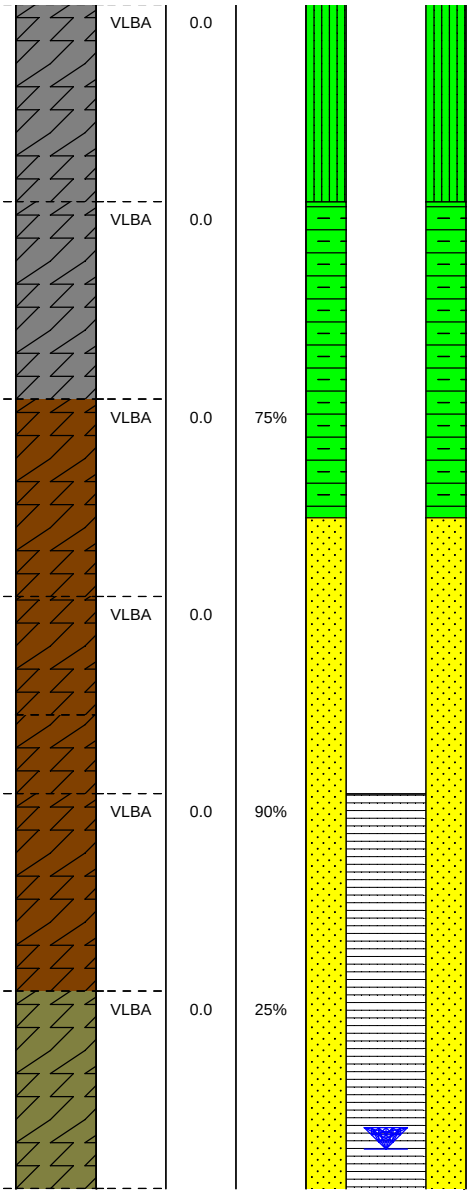
# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 28-Aug-14<br>DATE COMPLETED: 17-Sept-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 8 OF 10<br>WELL NO.: RHMW06 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 255.81 ft amsl<br>SOUNDING TUBE ELEV.: 259.01 ft | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Auger, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air | NORTHING: 75327.83<br>EASTING: 1676274.17 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 210 | (210.0, 215.0) Basalt: brownish gray 5YR 4/1, 30% voids, less dense, broken w/ soft silica infillling, dark reddish brown non-vesicular bands, grades to dark gray at 214 ft. | | VLBA | 0.0 | | | |
| 215 | (215.0, 220.0) Basalt: brownish gray 5YR 4/1, w/ dark yellowish brown bands, less competent, moderate strength, broken zone from 218-219 w/ secondary infilling, olive gray w/ 10% voids from 219-220 ft. | | VLBA | 0.0 | | | |
| 220 | (220.0, 225.0) Basalt: grayish red 10R 4/2, low density and weak, weathered matrix, | | VLBA | 0.0 | 75% | | |
| 225 | (225.0, 230.0) Basalt: SAA, alternating with dark gray vesicular, olive gray basalt w/ 30% voids at 229 ft., irregular voids up to 1 in., light silica coating in voids indicative of the movement of water | | VLBA | 0.0 | | | |
| 230 | (230.0, 235.0) Basalt: SAA, but more competent, up to 30% irregular voids, increase in void percentage near bottom of run, black oxide secondary mineralization in some voids and surfaces | | VLBA | 0.0 | 90% | | |
| 235 | (235.0, 240.0) Basalt: dark brown to dark yellowish brown to olive to greenish black, possible alteration to serpentine or chlorite in places, friable in places, non-competent, weathered to clay | | VLBA | 0.0 | 25% | | |
| 240 | | | | | | | |



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# GEOLOGIC LOG

DATE STARTED: 28-Aug-14
DATE COMPLETED: 17-Sept-14

LOGGER: TM Jensen
WEATHER: 90 degrees Fahrenheit



WELL NO.: RHMW06

COMPANY NAME: PARSONS
OFFICE LOCATION: South Jordan, Utah
PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01
LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435

DRILLING SUBCONTRACTOR: Valley Well Drilling
DRILL RIG TYPE: Mobile B-59 and B-90
DRILLING METHOD: Auger, HQ core, Air Rotary
BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air

SURFACE ELEV.: 255.81 ft amsl
SOUNDING TUBE ELEV.: 259.01 ft
NORTHING: 75327.83
EASTING: 1676274.17

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 240 | (240.0, 245.0) Basalt: brownish gray, moderate density and strength, low void percentage, grades to olive gray vesicular basalt that is low density and weak, zones of infilling with clay-like pinkish gray soft silica | | VLBA | 0.0 | 60% | | |
| 245 | (245.0, 250.0) Basalt: olive gray, 3-foot partial run, blocked off, variable void percentage, moderate density and strength, large and irregular open voids that are lightly coated with secondary amporphous silica indicative of water saturated conditions, finish 2-foot run, SAA, <10% voids, voids infilled with white mineral | | VLBA | 0.0 | 75% | | |
| 250 | (250.0, 255.0) Basalt: SAA, from 250-253, more infilling of voids, grades to olive black 5YR 2/1 basalt, shows slickenlines along fracture plane and possible serpentine or talc-like secondary alteration on fracture surfaces | | VLBA | 0.0 | 70% | | |
| 255 | (255.0, 260.0) Basalt: SAA, olive black, light density and weak, pumice-like vesicular, 30% small and round voids, some infilled, grades to olive gray and more dense basalt w/ larger voids, slickenlines on fracture surfaces | | VLBA | 0.0 | 50% | | |
| 260 | (260.0, 265.0) Basalt: SAA from 260-262 ft., grades back to olive black light density vesicular basalt, 3 in. band of white silica at 263 ft., weak rock and strongly oxidized at 264 ft., lost water pressure during coring at 263 feet | | VLBA | 0.0 | 50% | | Well TD = 260 ft bgs |
| 265 | (265.0, 270.0) Basalt: SAA, poor recovery, weak and broken rock | | VLBA | 0.0 | NA | | |
| 270 | | | | | | | |

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# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 28-Aug-14<br>DATE COMPLETED: 17-Sept-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 10 OF 10<br>WELL NO.: RHMW06 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 255.81 ft amsl<br>SOUNDING TUBE ELEV.: 259.01 ft | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Auger, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 6 & 12"Auger, 4" Core, 8" Air | NORTHING: 75327.83<br>EASTING: 1676274.17 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 270 | (270.0, 275.0) Basalt: olive gray, large open voids coated with silica and black oxides from 270-272 ft., grades to more dense and fractured, back to brownish gray at the bottom | | VLBA | 0.0 | 75% | | |
| 275 | (275.0, 280.0) Basalt: SAA, grades back to olive gray, zone w/ large coated open voids, some infilling w/ white mineral in smaller voids, few vertical fractures w/ slickenlines on fresh fracture surfaces | | VLBA | 0.0 | 75% | | |
| 280 | | | | | | | |

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# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 19-Sept-14<br>DATE COMPLETED: 6-Oct-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 1 OF 8<br>WELL NO.: RHMW07 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 216.53 ft amsl<br>SOUNDING TUBE ELEV.: 220.29 ft | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Ream, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 12" Ream, 4" Core, 8" Air | NORTHING: 74964.96<br>EASTING: 1675189.52 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 0 | (0.0, 10.0) Clay | | CLAY | | | | SURFACE COMPLETION: 3.5' x 3.5 'x 2' concrete pad w/ 8" above-ground steel casing |
| 5 | | | | | | | WELL CASING: Material: SCH. 80 PVC; Diameter: 4"; Interval: +3.76-184 bgs |
| 10 | (10.0, 11.5) Clay: dusky yellowish brown (10YR 2/2), CH, stiff, plastic, slightly moist, Note: basalt cobbles and boulders within clay were contacted from ground surface to the saprolite contact | | CLAY | 0.0 | 35/50 for 12" | | WELL SCREEN: Material: SCH. 80 PVC; Screen Opening: 0.020; Diameter: 4"; Interval: 184-214 bgs |
| | (11.5, 20.0) Clay | | CLAY | | | | |
| 15 | | | | | | | CONDUCTOR CASING: Material: PVC; Diameter: 10"; Interval: 0-40 bgs |
| 20 | (20.0, 21.5) Clay: pulverized rock and sand, probably a cobble at this depth broken up by air hammer bit, Note: dry clay from 10 to 20 feet with some sand | | CLAY | 0.0 | 100 for 3" | | DEPTH INTERVAL: Concrete: 0-3; Cement Grout: 3-40 bgs; Bentonite Chips: 40-176 bgs; Bentonite Seal: 176-179 bgs; Sand Pack: 179-230 bgs; Hole Cuttings: 230-235 bgs |
| | (21.5, 23.0) Clay | | CLAY | 0.0 | | | |
| 25 | (23.0, 27.0) Saprolite: no split spoon recovery at 24 ft, reddish brown cuttings, likely saprolite | | SAPR | 0.0 | | | |
| 30 | (27.0, 45.0) Basalt: gray with vesicles, cuttings from air hammer to 42 feet, then rock core from 40 to 45 feet with description as follows: 2 feet of cement grout (from conductor casing), dark gray (N3) | | VLBA | 0.0 | | | **NOTE:** All intervals are measured from ground surface. |

| | | | |
|---|---|---|---|
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| N/A - Not Applicable | HS - Head Space | GVL - Gravel | SLCL - Silt and Clay |
| NS - Not Sampled | ERPIMS CODE DESCRIPTIONS: | GVLP - Gravel, predominantly pebble-sized | SLGV - Silt and Gravel |
| PID - Photoionization Detector | ASPT - Asphalt | GVSL - Gravel and Silt | SLSD - Silt and Sand |
| ppmv - Parts per Million, Volume per Volume | CLAY - Clay | NDPS - No Description Provided, Problems in Sampling | VLBA - Basalt, Lava |
| SAA - Same as Above | CLGV - Clay and Gravel | NSNR - No Sample or No Recovery Obtained | VLTF - Volcanic Tuff |
| Horizontal Survey System: NAD 83 Epoch 2010.0 | CLSD - Clay and Sand | PTHM - Peat, Humus, and other Organic Material | |
| Elevations: Local Mean Sea Level (feet) | CLSL - Clay and Silt | SAPR - Saprolite | |

| GEOLOGIC LOG | DATE STARTED: 19-Sept-14<br>DATE COMPLETED: 6-Oct-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 2 OF 8<br>WELL NO.: RHMW07 |
|---|---|---|---|
| COMPANY NAME: **PARSONS** | | DRILLING SUBCONTRACTOR: Valley Well Drilling | SURFACE ELEV.: 216.53 ft amsl |
| OFFICE LOCATION: South Jordan, Utah | | DRILL RIG TYPE: Mobile B-59 and B-90 | SOUNDING TUBE ELEV.: 220.29 ftl |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01 | | DRILLING METHOD: Ream, HQ core, Air Rotary | NORTHING: 74964.96 |
| LOCATION: Red Hill BFSF, HI | JOB NUMBER: 749435 | BOREHOLE DIAMETER: 12" Ream, 4" Core, 8" Air | EASTING: 1675189.52 |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 30 | basalt, broken and rubbly zones with secondary pinkish to reddish orange soft silica or zeolite infilling spaces between rock fragments, few voids, moderate strength, one oblique fracture at 43 feet, NOTE: THE GSA ROCK COLOR CHART (1991) WAS USED FOR WET COLOR DESCRIPTIONS | | | | | | |
| 35 | | | | | | | |
| 40 | | | | | | | |
| 45 | (45.0, 50.0) Basalt: broken or rubbly zone from 45-49 ft, top of flow, weak rock, irrregular fractures and voids infilled with secondary pink to orange to red soft silica, dark gray basalt at 49 ft. | | VLBA | 0.0 | <50% | | |
| 50 | (50.0, 55.0) Basalt: dark gray (N3), aphanitic texture, trace phenocrysts, hard, dense, variable 5% to 20% voids that are horizontally stretched, subhorizontal to subvertical fractures w/ soft silica and seconday black oxide mineralization along thinly parted fracture planes, 100% recovery | | VLBA | 0.0 | 80% | | |
| 55 | (55.0, 60.0) Basalt: broken and rubbly similar to 45-50 ft., highly weathered with copious amounts of red to brown soft silica in voids and open space between rock fragments, very weak | | VLBA | 0.0 | 40% | | |
| 60 | | | | | | | |

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ppmv - Parts per Million, Volume per Volume
SAA - Same as Above
Horizontal Survey System: NAD 83 Epoch 2010.0
Elevations: Local Mean Sea Level (feet)

DP - Direct Push
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
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ERPIMS CODE DESCRIPTIONS:
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VLBA - Basalt, Lava
VLTF - Volcanic Tuff

# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 19-Sept-14 | LOGGER: TM Jensen | PAGE 3 OF 8 |
| DATE COMPLETED: 6-Oct-14 | WEATHER: 90 degrees Fahrenheit | WELL NO.: RHMW07 |

| | | |
|---|---|---|
| COMPANY NAME: PARSONS | DRILLING SUBCONTRACTOR: Valley Well Drilling | SURFACE ELEV.: 216.53 ft amsl |
| OFFICE LOCATION: South Jordan, Utah | DRILL RIG TYPE: Mobile B-59 and B-90 | SOUNDING TUBE ELEV.: 220.29 ftl |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01 | DRILLING METHOD: Ream, HQ core, Air Rotary | NORTHING: 74964.96 |
| LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | BOREHOLE DIAMETER: 12" Ream, 4" Core, 8" Air | EASTING: 1675189.52 |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 60 | (60.0, 65.0) Basalt: consolidated and cemented grayish red clinker from 60-62 ft, then dark gray (N3) basalt, aphanitic, harder, 10% voids, irregular fractures bottom with red to orange soft silica | | VLBA | 0.0 | 60% | | |
| 65 | (65.0, 70.0) Basalt: dark gray (N3), aphanitic, hard, strong, slight flow layering with stretched voids, few thinly parted fractures, rubbly at bottom with lava inclusions | | VLBA | 0.0 | 80% | | |
| 70 | (70.0, 75.0) Basalt: dense medium bluish gray (5B 5/1) mixed with dark gray to grayish red, grades to loose to consolidated clinker-like zone from 72.5-75 ft. | | VLBA | 0.0 | 90% | | |
| 75 | (75.0, 80.0) Basalt: dark gray to grayish black (N2), broken rock, black cinder inclusions, 20% to 30% voids, overall weak rock, looks permeable but does not appear to contain water, red to orange soft silica and harder tan silica in voids and cracks, lost water circulation after this run | | VLBA | 0.0 | 40% | | |
| 80 | (80.0, 85.0) Basalt: grayish black (N2), pumice-like vesicular, small-spherical voids up to 40%, some infilling of voids with soft silica, few angled fractures with soft reddish orange silica, moderate strength and density, porous and could transmit water | | VLBA | 0.0 | 60% | | |
| 85 | (85.0, 90.0) Basalt: SAA, vesicular, slight lower void percentage, few fractures with silica coating | | VLBA | 0.0 | 80% | | |
| 90 | | | | | | | |

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# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 19-Sept-14<br>DATE COMPLETED: 6-Oct-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 4 OF 8<br>WELL NO.: RHMW07 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 216.53 ft amsl<br>SOUNDING TUBE ELEV.: 220.29 ftl | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Ream, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 12" Ream, 4" Core, 8" Air | NORTHING: 74964.96<br>EASTING: 1675189.52 | |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 90 | (90.0, 95.0) Basalt: SAA, some larger connected voids up to 5 mm., some fractures and voids with soft silica infilling, moderate strength and density, | | VLBA | 0.0 | >80% | | |
| 95 | (95.0, 100.0) Basalt: SAA, but more variable void shape and density, good RQD, i.e., limited fractures | | VLBA | 0.0 | 80% | | |
| 100 | (100.0, 105.0) Basalt: SAA, variable void percentage up to 30%, porous, few horizontal fractures | | VLBA | 0.0 | 90% | | |
| 105 | (105.0, 110.0) Basalt: SAA, with color change to lighter gray (N4), 6 in. grayish red band at 108 ft., weaker rock, some secondary infilling of voids, one high-angle fracture with soft silica on fracture surfaces | | VLBA | 0.0 | 60% | | |
| 110 | (110.0, 115.0) Basalt: possible large void, bit dropped from 110-111.5 ft., only 1.5 feet of recovery, olive gray basalt, zone of loose or broken rock | | VLBA | 0.0 | | | |
| 115 | (115.0, 120.0) Clinker: SAA, poor recovery, loose or broken rock, possible clinker zone | | VLBA | 0.0 | 40% | | |
| 120 | | | | | | | |

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| GEOLOGIC LOG | DATE STARTED: 19-Sept-14<br>DATE COMPLETED: 6-Oct-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 5 OF 8<br>WELL NO.: RHMW07 |
|---|---|---|---|
| COMPANY NAME: **PARSONS** | | DRILLING SUBCONTRACTOR: Valley Well Drilling | SURFACE ELEV.: 216.53 ft amsl |
| OFFICE LOCATION: South Jordan, Utah | | DRILL RIG TYPE: Mobile B-59 and B-90 | SOUNDING TUBE ELEV.: 220.29 ftl |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01 | | DRILLING METHOD: Ream, HQ core, Air Rotary | NORTHING: 74964.96 |
| LOCATION: Red Hill BFSF, HI | JOB NUMBER: 749435 | BOREHOLE DIAMETER: 12" Ream, 4" Core, 8" Air | EASTING: 1675189.52 |

| DEPTH (ft bgs) | DESCRIPTION OF MATERIALS | GRAPHIC LOG | ERPIMS LITHO-LOGIC CODE | PID HS, ppmv (DEPTH, ft bgs) | BLOW COUNT/ RQD | WELL CONSTRUCTION (ft bgs) | WELL CONSTRUCTION INFORMATION |
|---|---|---|---|---|---|---|---|
| 120 | (120.0, 125.0) Basalt: SAA from 120-122 ft., grades to dark reddish brown (10R 3/4) basalt, 20% to 30% irregular voids infilled with soft silica and black oxides, 50% infilled, some olivine phenocrysts in aphantic matrix, flow layering | | VLBA | 0.0 | 40% | | |
| 125 | (125.0, 130.0) Basalt: SAA, grades back to gray, small voids that grade larger (up to 5 mm,) from 128-130 ft., fractures and voids with secondary silica and dark oxide mineralization indicative of water percolation | | VLBA | 0.0 | 60% | | |
| 130 | (130.0, 135.0) Basalt: SAA to 132 ft., 20% large and mostly open voids, grades to hard and dense non-vesicular gray basalt, some partially weathered olivine, overall crystalline texture | | VLBA | 0.0 | 80% | | |
| 135 | (135.0, 140.0) Basalt: SAA, grades to large open voids (15%), then to increasingly smaller and more numerous small voids (30%), fractures and infilled voids at 133.5 ft. | | VLBA | 0.0 | 80% | | |
| 140 | (140.0, 145.0) Clinker: consolidated clinker-like fragments loosely held together by reddish soft sillica, overall conglomeritic appearance | | VLBA | 0.0 | 25% | | |
| 145 | (145.0, 150.0) Clinker: SAA, poor recovery | | VLBA | 0.0 | 25% | | |
| 150 | | | | | | | |

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# GEOLOGIC LOG

| | | | |
|---|---|---|---|
| DATE STARTED: 19-Sept-14<br>DATE COMPLETED: 6-Oct-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 6 OF 8<br>WELL NO.: RHMW07 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 216.53 ft amsl<br>SOUNDING TUBE ELEV.: 220.29 ftl | |
| PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01<br>LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435 | DRILLING METHOD: Ream, HQ core, Air Rotary<br>BOREHOLE DIAMETER: 12" Ream, 4" Core, 8" Air | NORTHING: 74964.96<br>EASTING: 1675189.52 | |

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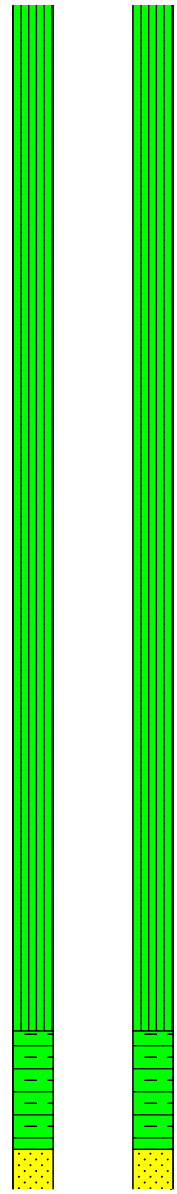
|---|---|---|---|---|---|---|---|
| 150 | (150.0, 155.0) Basalt: med gray (N4), flow layering w/ horizontallly stretched voids (10%), secondary black oxide mineral, volcanic lava inclusions, two horizontal fractures | | VLBA | 0.0 | | | |
| 155 | (155.0, 160.0) Basalt: SAA, highly fractured at 157 ft., parallel fractures w/ slate-like parting causing rock to block off in core tube, fewer voids | | VLBA | 0.0 | | | |
| 160 | (160.0, 165.0) Basalt: fractured to 161 ft., then vesicular basalt w/ stretched voids (10% to 15%), more competent | | VLBA | 0.0 | 70% | | |
| 165 | (165.0, 170.0) Basalt: SAA to 169 ft., compentent, few voids and fractures, bottom 1 foot is loose w/ soft silica | | VLBA | 0.0 | 90% | | |
| 170 | (170.0, 175.0) Basalt: SAA, continuous from above, overall weak rock, zones that are more competent with 1 in. voids, volcanic lava inclusions some that are reddish brown, capable of transmitting water | | VLBA | 0.0 | 40% | | |
| 175 | (175.0, 180.0) Basalt: dark gray, zones of healed high-angle fractures at 177 ft. and 179 ft., large open voids, 10% to 15% voids | | VLBA | 0.0 | 40% | | |
| 180 | | | | | | | |



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# GEOLOGIC LOG

DATE STARTED: 19-Sept-14
DATE COMPLETED: 6-Oct-14

LOGGER: TM Jensen
WEATHER: 90 degrees Fahrenheit



WELL NO.: RHMW07

COMPANY NAME: PARSONS
OFFICE LOCATION: South Jordan, Utah
PROJECT: Monitoring Well Installation N62583-11-D-0515, TO KB01
LOCATION: Red Hill BFSF, HI JOB NUMBER: 749435

DRILLING SUBCONTRACTOR: Valley Well Drilling
DRILL RIG TYPE: Mobile B-59 and B-90
DRILLING METHOD: Ream, HQ core, Air Rotary
BOREHOLE DIAMETER: 12" Ream, 4" Core, 8" Air

SURFACE ELEV.: 216.53 ft amsl
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NORTHING: 74964.96
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|---|---|---|---|---|---|---|---|
| 180 | (180.0, 185.0) Basalt: dark gray to black w/ lava inclusions, grades to gray to grayish red vesicular basalt, low-angle fractures, alot of soft red silica, 10% to 20% voids, some infilled, moderate strength | | VLBA | 0.0 | 50% | | |
| 185 | (185.0, 190.0) Basalt: dark gray to olive black, vesicular, 20% voids-large and open, some olivine, few fractures, large void from 188-189 no core, some white amorphous quartz silica or zeolite infilling voids at 190 ft | | VLBA | 0.0 | | | |
| 190 | (190.0, 195.0) Basalt: SAA, grades to smaller voids, healed fractures, moderate strength, core may be saturated, thin coating of secondary mineralization on void surfaces indicative of saturated or below water table conditions | | VLBA | 0.0 | 80% | | |
| 195 | (195.0, 200.0) Basalt: dark gray, vesicular, larger connected voids, dense, light olive brown coating in voids indicative of below water saturated conditions, some olivine, few horizontal fractures | | VLBA | 0.0 | 80% | | |
| 200 | (200.0, 205.0) Basalt: SAA, to 203 ft., grades to olive gray non-vesicular basalt with lava inclusions, weak- mechanical breaks from coring process, secondary black oxide and reddish soft silica | | VLBA | 0.0 | 60% | | |
| 205 | (205.0, 210.0) Clinker: rubbly and loose, pebbly fragments held loosely by soft reddish silica, partial run | | VLBA | 0.0 | 20% | | |
| 210 | | | | | | | |

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| | | | |
|---|---|---|---|
| DATE STARTED: 19-Sept-14<br>DATE COMPLETED: 6-Oct-14 | LOGGER: TM Jensen<br>WEATHER: 90 degrees Fahrenheit | PAGE 8 OF 8<br>WELL NO.: RHMW07 | |
| COMPANY NAME: **PARSONS**<br>OFFICE LOCATION: South Jordan, Utah | DRILLING SUBCONTRACTOR: Valley Well Drilling<br>DRILL RIG TYPE: Mobile B-59 and B-90 | SURFACE ELEV.: 216.53 ft amsl<br>SOUNDING TUBE ELEV.: 220.29 ftl | |
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|---|---|---|---|---|---|---|---|
| 210 | (210.0, 215.0) Basalt: med. dark gray, hard, dense, stronger rock, few voids, few thinly parted high angle fractures w/ limited secondary mineralization | | VLBA | 0.0 | 80% | | Well TD = 214 ft bgs |
| 215 | (215.0, 220.0) Basalt: SAA, hard and dense, few thinly parted and healed fractures- vertical to high angle, does not appear saturated | | VLBA | 0.0 | 80% | | |
| 220 | (220.0, 225.0) Basalt: SAA, but voids are horizontally stretched, bottom 2 feet weak and broken, core saturated in zones of weakness | | VLBA | 0.0 | 60% | | |
| 225 | (225.0, 230.0) Sand: medium to coarse moderately well sorted black sand (SW-SP), contains grains of weathered basalt and light grains of quartz, olivine, carbonate(?), angular to semi-rounded, probably a beach sand deposited between flows, deposited on grayish red fractured basalt that is present at bottom 2 feet of run | | VLBA | 0.0 | NA | | |
| 230 | (230.0, 235.0) Basalt: SAA, grayish red, few zones of broken fragments, thin clay zones, grades to gray basalt at bottom, poor recovery and RQD | | VLBA | 0.0 | <50% | | |
| 235 | (235.0, 240.0) Basalt: medium gray, vesicular, open voids with grayish coating, 20% voids, some black oxide and white (zeolite ?) mineralization, abundant green olivine (20%), olivine is mostly unweathered, looks permeable | | VLBA | 0.0 | 100% | | |
| 240 | | | | | | | |

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# PHOTOGRAPHIC DOCUMENTATION OF ROCK CORE

# RHMW06 CORE PHOTOGRAPHS

Core Interval 35 – 45 ft bgs

Core Interval 45 – 55 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 55 – 65ft bgs

Core Interval 65 – 75 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 75 – 85 ft bgs

Core Interval 85 – 93 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 93 – 100 ft bgs

Core Interval 100 – 110 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 110 – 120 ft bgs

Core Interval 120 – 130 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 130 – 140 ft bgs

Core Interval 140 – 150 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 150 – 160 ft bgs

Core Interval 160 – 170 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 170 – 180 ft bgs

Core Interval 180 – 190 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 190 – 200 ft bgs

Core Interval 200 – 210 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 210 – 220 ft bgs

Core Interval 220 – 230 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 230 – 240 ft bgs

Core Interval 240 – 250 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 250 – 260 ft bgs

Core Interval 260 – 270 ft bgs

# RHMW06 CORE PHOTOGRAPHS

Core Interval 270 – 280 ft bgs

Core Interval 280 – 285 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 40 – 50 ft bgs

Core Interval 50 – 60ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 60 – 70 ft bgs

Core Interval 70 – 80 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 80 – 90 ft bgs

Core Interval 90 – 100 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 100 – 110 ft bgs

Core Interval 110 – 120 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 120 – 130 ft bgs

Core Interval 130 – 140 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 140 – 150 ft bgs

Core Interval 150 – 160 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 160 – 170 ft bgs

Core Interval 170 – 180 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 180 – 190 ft bgs

Core Interval 190 – 200 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 200 – 210 ft bgs

Core Interval 210 – 220 ft bgs

# RHMW07 CORE PHOTOGRAPHS

Core Interval 220 – 230 ft bgs

Core Interval 230 – 240 ft bgs

# APPENDIX B

# WELL DEVELOPMENT AND GROUNDWATER SAMPLING FORMS

# MONITORING WELL DEVELOPMENT FORMS

CLIENT: JBPHH SITE: Red Hill Bulk Fuel Storage Facility

DATE: 9-10 October 2014 WELL NUMBER: RHMW06

DEVELOPER SIGNATURE: TMJ

DEVELOPMENT DESCRIPTION: Surged with block for 15 min, removed about 40 gallons on 9 October by surging and bailing with a clean 6-foot long, 3.5-inch-diameter, 4-gallon stainless steel bailer. Water was too turbid to measure accurately. Another 250 gallons were removed on 10 October until the turbidity was lower and the water relatively sediment free. A total of 290 gallons were removed. The evacuated groundwater was transferred to properly labeled 55-gallon drums and the on-site roll-off bin pending analytical results for proper off-site disposal.

| | | | |
|---|---|---|---|
| Depth to well bottom (ft-btoc): | 263.3 | Water Column in Well Pipe (ft) | 22.09 |
| Depth to water (ft-btoc) | 241.21 | Well Pipe Diameter (in) | 4.0 |
| Water Column (ft) | 22.09 | Well Pipe Factor (gal/ft) | 0.65 |
| Sand Pack Length (ft) | 46 | **Water Volume in Well Pipe (gal)** | **14.36** |
| Water Column in Sand Pack (ft) | 22.09 | **One Well Volume (gal)** | **18.782** |
| Borehole Diameter (in) | 8 | Volumes to be removed (min) | 10 |
| Sand Pack Factor (gal/ft) | 0.2 | **Gallons to be removed (min)** | **187.78** |
| **Water Volume in Sand Pack (gal)** | **4.42** | | |

PURGE MEASUREMENTS: A Horiba U-52 meter with flow cell was used.

Purge Device: Stainless steel bailer Purge Rate (gal/hr): 40 to 50

| **Time** | **Vol** (gal) | **Temp** (ºC) | **pH** | **Cond** (mS/cm) | **Turb** (NTU) | **DO** (mg/L) | **ORP** (mv) | **Comments** |
|---|---|---|---|---|---|---|---|---|
| 1400 | 20 | 23.39 | 7.42 | 1.27 | over | 4.62 | 142 | Turbid |
| 1430 | 40 | 23.43 | 7.61 | 0.992 | over | 5.08 | 145 | No drawdown |
| 10/10 | | | | | | | | |
| 0735 | 60 | 24.20 | 7.02 | 0.840 | 953 | 4.87 | 196 | |
| 0754 | 80 | 23.08 | 7.74 | 0.771 | 623 | 4.76 | 155 | Sediment |
| 0924 | 120 | 24.03 | 7.52 | 0.701 | 227 | 4.73 | 157 | |
| 1005 | 170 | 24.41 | 7.17 | 0.671 | 112 | 4.70 | 148 | Let settle |
| 1050 | 195 | 24.49 | 7.43 | 0.655 | 87.6 | 4.65 | 136 | |
| 1210 | 250 | 24.53 | 6.85 | 0.650 | 90.3 | 5.06 | 130 | |
| 1226 | 275 | 24.37 | 6.99 | 0.656 | 89.1 | 4.53 | 129 | |
| 1236 | 285 | 23.98 | 6.82 | 0.656 | 83.9 | 4.76 | 124 | |
| 1320 | 290 | 24.39 | 6.86 | 0.665 | 79.3 | 4.94 | 130 | Some fine sand |

Notes: Final water level was the same as pre-development. Final height of well casing was same as for development or about 2.5 ft above ground surface. Limited drawdown indicates good recharge and high permeability at this location.

CLIENT: JBPHH SITE: Red Hill Bulk Fuel Storage Facility

DATE: 8-9 Oct 2014 WELL NUMBER: RHMW07

DEVELOPER SIGNATURE: TMJ

DEVELOPMENT DESCRIPTION: Surged with block for 20 min, removed about 40 gallons and surged again. Water was turbid and foamy from drilling foam used to fluidize and lift cuttings from the open hole. Approximately 220 gallons of water were removed on 8 October by surging and bailing with a clean 6-foot long, 3.5-inch-diameter, 4-gallon stainless steel bailer. Another 260 gallons were removed on 9 October until the turbidity was low and the water sediment free. A total of 480 gallons were removed. The evacuated groundwater was transferred to properly labeled 55-gallon drums and the on-site roll-off bin pending analytical results for proper off-site disposal.

| | | | |
|---|---|---|---|
| Depth to well bottom (ft-btoc): | 217.6 | Water Column in Well Pipe (ft) | 20.2 |
| Depth to water (ft-btoc) | 197.4 | Well Pipe Diameter (in) | 4.0 |
| Water Column (ft) | 20.2 | Well Pipe Factor (gal/ft) | 0.65 |
| Sand Pack Length (ft) | 51 | **Water Volume in Well Pipe (gal)** | **13.13** |
| Water Column in Sand Pack (ft) | 20.2 | **One Well Volume (gal)** | **17.17** |
| Borehole Diameter (in) | 8 | Volumes to be removed (min) | 10 |
| Sand Pack Factor (gal/ft) | 0.2 | **Gallons to be removed (min)** | **171.7** |
| **Water Volume in Sand Pack (gal)** | **4.04** | | |

PURGE MEASUREMENTS: A Horiba U-52 meter with flow cell was used.

Purge Device: Stainless steel bailer Purge Rate (gal/hr): 40 to 50

| **Time** | **Vol** (gal) | **Temp** (ºC) | **pH** | **Cond** (mS/cm) | **Turb** (NTU) | **DO** (mg/L) | **ORP** (mv) | **Comments** |
|---|---|---|---|---|---|---|---|---|
| 0955 | 55 | 27.35 | 9.36 | 1.75 | over | 10.9 | 95 | Water foamy |
| 1015 | 75 | 25.84 | 9.71 | 1.57 | 1000 | 10.08 | 67 | |
| 1030 | 95 | 25.58 | 9.88 | 1.54 | 649 | 10.14 | 73 | WL=206 |
| 1038 | 110 | | | | | | | WL=201 after 22 min. of recovery |
| 1115 | 130 | 25.65 | 6.39 | 1.44 | 233 | 8.97 | 94 | |
| 1135 | 150 | 26.72 | 6.43 | 1.32 | 82 | 9.08 | 96 | |
| 1237 | 170 | 25.71 | 7.40 | 1.12 | 15 | 9.86 | 123 | Recalibrate pH |
| 1300 | 205 | 25.74 | 7.42 | 0.999 | 10.4 | 9.61 | 105 | |
| 10/9 | | | | | | | | |
| 0710 | 230 | 25.10 | 6.67 | 1.35 | 35.1 | 7.40 | 192 | |
| 1000 | 415 | 24.81 | 7.28 | 1.13 | 13.3 | 7.57 | 118 | WL=207.2 |
| 1100 | 440 | 24.51 | 7.22 | 1.07 | 9.2 | 7.02 | 98 | |
| 1115 | 455 | 24.44 | 7.67 | 0.989 | 10.7 | 7.02 | 77 | |
| 1125 | 470 | 24.04 | 7.37 | 0.962 | 5.4 | 6.93 | 87 | Water still foamy |
| 1145 | 480 | 24.49 | 7.34 | 0.962 | 7.5 | 7.03 | 88 | Little fine sand |

Notes: Initial pH inaccurate, replaced electrode solution. Accurate after 170 gallons removed and recalibration. Maximum drawdown was about 10 feet, or half of the water column, and indicates poor recharge and lower permeability at this location.

# GROUNDWATER SAMPLING FORMS

PARSONS

# Groundwater Sampling Form

**Project Name:** Red Hill FS Facility at JBPHH **Project Number:** 749435

Well Designation: RHMW04 Date: 21 Oct 2014

Weather: hot, humid, light rain

Static Water Level (ft-btoc): 241.21 Casing Diameter (in): 4

Total Well Depth (ft-btoc): ≈263.30 Well Notes: set pump on 10/16/14

Purging Method: Bail / Bladder Pump / Grundfos Redi-Flo2 / Peristaltic Pump / Other-

Casing Volume (gal.) CV =(CID/24)$^2$(TD-WL)(PI)(7.48) gallons/casing

| Time | Vol. Purged (gallons) | Temp. (°C) | pH (SU) | Specific Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | Redox Potential (mv) | Turbidity (NTUs) | Observations |
|---|---|---|---|---|---|---|---|---|
| Stabilization Criteria: | | ± 1.0 °C | ± 0.1 | ± 3% | ± 0.3 mg/L | ± 10 mV | ± 10% | |
| 0820 | 1.0 | 24.05 | 6.92 | 1.36 | 6.80 | 242 | 3.1 | |
| 0830 | 3.0 | 23.30 | 7.17 | 1.46 | 6.85 | 225 | 1.6 | |
| 0900 | 10.0 | 23.43 | 7.20 | 1.41 | 6.41 | 200 | 1.6 | WL=241.30 |
| 0920 | 12.0 | 23.26 | 7.20 | 1.40 | 6.07 | 189 | 1.4 | |
| 0930 | 14.0 | 23.42 | 7.22 | 1.46 | 6.25 | 189 | 1.2 | |
| 0940 | 17.0 | 23.34 | 7.18 | 1.39 | 6.16 | 187 | 1.0 | |
| | | | | | | | | |
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| | | | | | | | | |

Total Volume Removed: ≈19 (gal / liters) _____ (stabilized?)

Sample ID: RHMW06-GW-01 Date/Time Sampled: 10/21/14 1100

Duplicate Sample ID: _____ MS/MSD collected? Yes / No

**Laboratory Analytical Methods:**

| | | |
|---|---|---|
| ✓ | VOCs by SW 8260B | 3x - 40 ml VOA |
| ✓ | EDB by SW8011 | 3x - 40 ml VOA ~~w/HNO3~~ |
| ✓ | PAHs by SW8270C | 2x - 1 L amber glass |
| ✓ | TPH-GRO by EPA 8015B-P | 3x - 40 ml VOA |
| ✓ | TPH-DRO, RRO by EPA 8015Bm-E | 2x - 1 L amber glass |
| ✓ | Methane by RSK 175 | 3x - 40 ml VOA |
| ✓ | Alkalinity and Sulfate | 250 mL poly |
| ✓ | Nitrate/Nitrite as N by EPA 353.2 | 125 mL poly w/H2SO4 |
| ✓ | Dissolved Lead by SW6020 | 500 mL poly w/HNO3 |

**Field Geochemistry:** **Results:** **Method/Comment:**

Sampled By: TWS, JT - Environet

Notes: pressure 150 psi.
test pump and equipment on Oct 16, 2014, got water

PARSONS

# Groundwater Sampling Form

**Project Name:** Red Hill FS Facility at JBPHH **Project Number:** 749435

Well Designation: ~~Red Hill~~ RHMW07 Date: 20 Oct 2014

Weather: overcast, humid, hot

Static Water Level (ft-btoc): 198.05 Casing Diameter (in): 4

Total Well Depth (ft-btoc): ≈ 217.60 Well Notes: set pump on 10/16/14

Purging Method: Bail / Bladder Pump/ Grundfos Redi-Flo2 / Peristaltic Pump / Other-

Casing Volume (gal.) ≈ 12.7 gal CV =(CID/24)$^2$(TD-WL)(PI)(7.48) gallons/casing

| Time | Vol. Purged (gallons) | Temp. (°C) | pH (SU) | Specific Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | Redox Potential (mv) | Turbidity (NTUs) | Observations |
|---|---|---|---|---|---|---|---|---|
| Stabilization Criteria: | | ± 1.0 °C | ± 0.1 | ± 3% | ± 0.3 mg/L | ± 10 mV | ± 10% | |
| 0845 | ≈ 1 gal | 26.35 | 5.97 | 1.92 | 7.16 | 267 | 2.1 | |
| 0848 | 2 | 24.11 | 7.23 | 1.85 | 0.24 | 106 | 0 | WL=198.85 |
| 0853 | 3 | 23.91 | 7.13 | 1.84 | 0.21 | 76 | 0.0 | |
| 0900 | 5 | 23.84 | 7.16 | 1.88 | 0.12 | 54 | 0.0 | |
| 0915 | 8 | 23.49 | 7.17 | 1.77 | 0.07 | 46 | 0.0 | WL=199.35 |
| 0935 | 12 | 23.54 | 7.17 | 1.71 | 0.11 | 25 | 0.0 | ΔH=1.3 feet |
| 1000 | 15 | 23.49 | 7.15 | 1.65 | 0.10 | 17 | 0.0 | |
| | | | | | | | | |
| 1000 | Sample | | | | | | final WL= | |
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| | | | | | | | | |

Total Volume Removed: ≈ 17.5 (gal / liters) yes (stabilized?)

Sample ID: RHMW07-GW-01 Date/Time Sampled: 10/20/14 1100

Duplicate Sample ID: RHMW07-GW-01FD MS/MSD collected? Yes / No

**Laboratory Analytical Methods:**

| | | |
|---|---|---|
| ✓ | VOCs by SW 8260B | 3x - 40 ml VOA |
| ✓ | EDB by SW8011 | 3x - 40 ml VOA ~~w/HNO3~~ |
| ✓ | PAHs by SW8270C | 2x - 1 L amber glass EMAX |
| ✓ | TPH-GRO by EPA 8015B-P | 3x - 40 ml VOA Emax |
| ✓ | TPH-DRO, RRO by EPA 8015Bm-E | 2x - 1 L amber glass Emax |
| ✓ | Methane by RSK 175 | 3x - 40 ml VOA |
| ✓ | Alkalinity and Sulfate | 250 mL poly |
| ✓ | Nitrate/Nitrite as N by EPA 353.2 | 125 mL poly w/H2SO4 |
| ✓ | Dissolved Lead by SW6020 | 500 mL poly w/HNO3 |

**Field Geochemistry:** **Results:** **Method/Comment:**

Sampled By: TMJ, JT - Environet

Notes: pressure 120 psi, ≈ 0.75 L per cycle
test pump and equipment on oct 16, 2014, got water

PARSONS

# Groundwater Sampling Form

**Project Name:** Red Hill FS Facility at JBPHH **Project Number:** 749435

Well Designation: RHMW07 Date: Oct 27, 2014

Weather:

Static Water Level (ft-btoc): 198.09 Casing Diameter (in):

Total Well Depth (ft-btoc): ≈ 217.60 Well Notes:

Purging Method: Bail / Bladder Pump/ Grundfos Redi-Flo2 / Peristaltic Pump / Other-

Casing Volume (gal.) ≈ 12.7 CV =(CID/24)$^2$(TD-WL)(PI)(7.48) gallons/casing

| Time | Vol. Purged (gallons) | Temp. (°C) | pH (SU) | Specific Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | Redox Potential (mv) | Turbidity (NTUs) | Observations |
|---|---|---|---|---|---|---|---|---|
| Stabilization Criteria: | | ± 1.0 °C | ± 0.1 | ± 3% | ± 0.3 mg/L | ± 10 mV | ± 10% | |
| 0835 | 1 | 23.32 | | 1.84 | 0.47 | 56 | 0.0 | no pH cal |
| 0840 | 2 | 23.26 | | 1.85 | 0.26 | 55 | 0 | |
| 0845 | 3 | 23.23 | | 1.84 | 0.21 | 57 | 0.0 | |
| 0850 | 4 | 23.14 | | 1.82 | 0.20 | 44 | 0.0 | WL= 198.95 |
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Total Volume Removed: _____ (gal / liters) _____ (stabilized?)

Sample ID: RHMW07-GW-01 Date/Time Sampled: 10/27/2014 0900

Duplicate Sample ID: RHMW07-GW-01FD MS/MSD collected? Yes / No

**Laboratory Analytical Methods:**

| | | |
|---|---|---|
| | VOCs by SW 8260B | 3x - 40 ml VOA |
| | EDB by SW8011 | 3x - 40 ml VOA ~~w/HNO3~~ |
| | PAHs by SW8270C | 2x - 1 L amber glass |
| ✓ | TPH-GRO by EPA 8015B-P | 3x - 40 ml VOA |
| | TPH-DRO, RRO by EPA 8015Bm-E | 2x - 1 L amber glass |
| | Methane by RSK 175 | 3x - 40 ml VOA |
| | Alkalinity and Sulfate | 250 mL poly |
| | Nitrate/Nitrite as N by EPA 353.2 | 125 mL poly w/H2SO4 |
| | Dissolved Lead by SW6020 | 500 mL poly w/HNO3 |

**Field Geochemistry:** **Results:** **Method/Comment:**

Sampled By: TMJ, JT - Environet

Notes: missed TPH-GRO trip blank for original sample on Oct 21, 2014

PARSONS

# Groundwater Sampling Form

**Project Name:** Red Hill FS Facility at JBPHH **Project Number:** 749435

Well Designation: Fire hydrant located between 99-056 and 99-059 Kaoha Way Date: 11/6/14

Weather: sunny

Static Water Level (ft-btoc): NA Casing Diameter (in): NA

Total Well Depth (ft-btoc): NA Well Notes: NA

Purging Method: Bail / Bladder Pump/ Grundfos Redi-Flo2 / Peristaltic Pump / Other- NA

Casing Volume (gal.) NA CV =(CID/24)$^2$(TD-WL)(PI)(7.48) gallons/casing

| Time | Vol. Purged (gallons) | Temp. (°C) | pH (SU) | Specific Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | Redox Potential (mv) | Turbidity (NTUs) | Observations |
|---|---|---|---|---|---|---|---|---|
| Stabilization Criteria: | | ± 1.0 °C | ± 0.1 | ± 3% | ± 0.3 mg/L | ± 10 mV | ± 10% | |
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Total Volume Removed: 10 (gal / liters) NA (stabilized?)

Sample ID: ~~HW110614-01~~ HW111214-01 Date/Time Sampled: ~~11/6/14~~ 11/12/14

Duplicate Sample ID: ~~HW110614-02~~ HW111214-02 MS/MSD collected? Yes / No

**Laboratory Analytical Methods:**

| | | |
|---|---|---|
| APPL | VOCs by SW 8260B | 3x - 40 ml VOA |
| APPL | EDB by SW8011 | 3x - 40 ml VOA |
| EMAX | PAHs by SW8270C | 2x - 1 L amber glass |
| EMAX | TPH-GRO by EPA 8015B-P | 3x - 40 ml VOA |
| EMAX | TPH-DRO, RRO by EPA 8015Bm-E | 2x - 1 L amber glass |
| APPL | Methane by RSK 175 | 3x - 40 ml VOA |
| APPL | Alkalinity and Sulfate + dissolved lead | ~~250~~ 500 mL poly |
| APPL | Nitrate/Nitrite as N by EPA 353.2 | 125 mL poly w/H2SO4 |
| | ~~Dissolved Lead by SW6020~~ | ~~500 mL poly w/HNO3~~ |

**Field Geochemistry:** **Results:** **Method/Comment:**

Sampled By: JT

Notes: two 5-gal bucket fulls were purged prior to sampling over a 2 min span; water was clear prior to sampling.

Hydrant Sampling

| Hydrant | No. of Analytical Samples | No. of Field Duplicate/Triplicate Samples | No. of MS/MSD Pairs | No. of Field Blanks | No. of Equipment Rinsates | No. of Trip Blanks | Analytical Parameters | Sample Containers | |
|---|---|---|---|---|---|---|---|---|---|
| Between 99-056 and 99-048 Koaha Way | 1 primary | 1 dup | 0 | 0 | 0 | 1 (1 to each lab for VOC and TPH-GRO analysis, respectively) | VOCs, EDB, PAHs, TPH-GRO, TPH-DRO/RRO, Methane, Alkalinity and Sulfate, Nitrate/Nitrite, and Dissolved Lead | (12) 40-mL VOA w/out preserve, (4) 1-L amber w/out preserve, (1) 250-mL poly w/out preserve, (1) 125-mL poly w/preserve, and (1) 500-mL poly w/preserve | |

| Sample Location | Sample Name | PID Reading | Depth to Water | Date Collected | Time Collected | Sampler | Water Description | TPH-DRO/RRO, PAHs (4 x 1-L amber glass) | VOCs, EDB, TPH-GRO, Methane (12 x 40-mL VOA) | Alkalinity and Salinity (1 x 250-mL poly) | Nitrate/Nitrite (1 x 125-mL poly with preserve) | Dissolved Lead (1 x 500-mL poly with preserve) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 99-056 and 99-048 Koaha Way | HW date - 01 Primary | NA | NA | | | | | | | | | |
| 99-056 and 99-048 Koaha Way | HW date - 02 Duplicate | NA | NA | | | | | | | | | |

Total for shipment = 24 VOAs, 8 ambers, 2 250-mL, 2 125-mL, 2 500-mL.

APPL analyses → [3 VOAs] VOCs, EDB, [3 VOAs] Methane, [3 VOAs] Alkalinity and sulfate [1 250 mL], Nitrite/Nitrate [1 125-mL], Dissolved Lead [1 500-mL]

ENAX analyses → TPH-GRO [(3) VOAs]; TPH-DRO/RRO [(2) Ambers], PAHs [2 ambers]

HW111214-01 - 1000 (primary)

HW111214-02 - 1015 (duplicate)

# APPENDIX C

# CHAIN-OF-CUSTODY FORMS, LABORATORY ANALYTICAL DATA REPORTS, DATA QUALITY ASSESSMENT REPORT

# CHAIN-OF-CUSTODY FORMS

74672
2.5
YL 10/21/14

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

# CHAIN OF CUSTODY RECORD

C.O.C. 44316

Report to: PLEASE PRINT
Company Name: Battelle / Parsons Phone: 801 553-3317
Address:
Fax:
Attn: Gene Wright

Invoice to: PLEASE PRINT
Company Name: Phone:
Address:
Fax:
Attn:

Project Name/Number: 749435
Purchase Order Number:
Sampler (Print): Jim Terry / Environet
Sampler (Signature): Jim Terry

Date Shipped: 10/20/14
Carrier: Fedex
Waybill No.: 8033 9337 1525
Comments: drilling foam in water
i.e. ethylglycolester

| Sample Identification | Location | Date Collected | Time Collected | Time Zone | No. of Containers | Matrix: Aq | Sed. | Soil | | VOCs | EDB | 3 methane | Alk/SO4 | Total N | Lead | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHMW07-GW-01 | Red Hill, HI | 10/20/14 | 1100 | HI | 12 | / | | | | ~~3~~ | ~~3~~ | ~~3~~ | 1 | 1 | 1 | | | | | | | | |
| RHMW07-GW-01FD | Red Hill, HI | 10/20/14 | 1100 | HI | 12 | / | | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | | |
| TB 102014 | " " | " " | " | " | 2 | / | | | | 2 | | | | | | | | | | | | | |

Shuttle Temperature:
Turnaround Requested: Check one ☐ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other
Sample Disposal: ☐ Return to client ☐ Disposal by Lab (30-day retention)

| Relinquished by sampler: | Date | Time | Received by: | Relinquished by: | Date | Time | Received by: |
|---|---|---|---|---|---|---|---|
| Jim Terry | 10/20/14 | 1530 | | | | | |
| **Relinquished by:** | **Date** | **Time** | **Received by:** | **Relinquished by:** | **Date** | **Time** | **Received at lab by:** |
| | | | | | 10/21/14 | 09:40 | Yong Zu |

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

*See reverse side for Container Preservative and Sampling Information*

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

# CHAIN OF CUSTODY RECORD

2.5
74701

C.O.C. 44313

**Report to:** PLEASE PRINT
Company Name: Battelle c/o Parsons Phone: 801 553 3317
Address:
Fax:
Attn: Gene Wright

**Invoice to:** PLEASE PRINT
Company Name: Phone:
Address:
Fax:
Attn:

Project Name/Number: 749435
Purchase Order Number:
Sampler (Print): Jim Terry / Environmental
Sampler (Signature):

Date Shipped:
Carrier:
Waybill No.:
Comments:

| Sample Identification | Location | Date Collected | Time Collected | Time Zone | No. of Containers | Matrix: Aq | Matrix: Sed. | Matrix: Soil | Analysis Requested/Method Number: VOCs | EDB | methane | Alk/SO4 | NH3 N | Lead | | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHMW06-GW-01 | Red Hill, HI | 10/21/14 | 1100 | HI | 12 | ✓ | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | | lead filtered in field |
| RHMW06-GW-01MS | " " | " | 1100 | | 12 | ↓ | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | | |
| RHMW06-GW-01MSD | " " | " | 1100 | | 12 | ↓ | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | | |
| TB102114 | " " | " | 1100 | | 1 | ✓ | | | 1 | | | | | | | | | | | | | |

Shuttle Temperature:

Turnaround Requested: Check one
☐ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☐ Disposal by Lab (30-day retention)

| Relinquished by sampler: | Date | Time | Received by: | Relinquished by: | Date | Time | Received by: |
|---|---|---|---|---|---|---|---|
| [signature] | 10/21/14 | 1530 | | | | | |
| **Relinquished by:** | **Date** | **Time** | **Received by:** | **Relinquished by:** | **Date** | **Time** | **Received at lab by:** |
| | | | | | 10/22/14 | 1000 | [signature] |

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

*See reverse side for Container Preservative and Sampling Information*

74924
4.0

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

# CHAIN OF CUSTODY RECORD

C.O.C. 47921

**Report to:** PLEASE PRINT

Company Name: Battelle
Phone: 215-504-5003
Address: 301 South State St., Ste. N001
Newtown, PA 18940
Fax: 614-458-6620
Attn: Carolyn Scala

**Invoice to:** PLEASE PRINT

Company Name: Battelle
Phone: 215-504-5003
Address: 301 South State St., Ste. N001
Newtown, PA 18940
Fax: 614-458-6620
Attn: Carolyn Scala

Project Name/Number: Red Hill Phase 1b
Purchase Order Number:
Sampler (Print): James Terry
Sampler (Signature): James Terry

Date Shipped: 11/12/14
Carrier: FEDEX
Waybill No.:
Comments:

| Sample Identification | Location | Date Collected | Time Collected | Time Zone | No. of Containers | Matrix: Aq | Matrix: Sed. | Matrix: Soil | | VOCs (SW 8260B) | EDB (SW8011) | Methane (RSK 175) | Alkalinity and Sulfate | Nitrate/Nitrite (SEPA 353.2) | Dissolved Lead (SW6020) | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRIP111214 | | 11/12/14 | 0930 | Hi | 3 | X | | | | X | | | | | | | | | | | | * dissolved lead |
| HW111214-01 | 99-048 Koaha Way Fire Hydrant | ↓ | 1000 | ↓ | 11 | X | | | | X | X | X | X | X | X | | | | | | | sample not field |
| HW111214-02 | ↓ | ↓ | 1015 | ↓ | 11 | X | | | | X | X | X | X | X | X | | | | | | | filtered. |

Shuttle Temperature:

Turnaround Requested: Check one
☒ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☒ Disposal by Lab (30-day retention)

| Relinquished by sampler: | Date | Time | Received by: | Relinquished by: | Date | Time | Received by: |
|---|---|---|---|---|---|---|---|
| James Terry / James Terry | 11/12/14 | 1400 | | | | | |

| Relinquished by: | Date | Time | Received by: | Relinquished by: | Date | Time | Received at lab by: |
|---|---|---|---|---|---|---|---|
| | | | | | 11/13/14 | 10:20 | Yang |

White: Return to client with report  Yellow: Laboratory Copy  Pink: Sampler

*See reverse side for Container Preservative and Sampling Information*

# CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. * 14J130

PROJECT CODE:

CLIENT: Battelle / Parsons
PROJECT: 749435
COORDINATOR: Mitch Jansen
TEL: 801 380 1375 FAX: EMAIL:
SEND REPORT TO: Gene Wright 801 553 3317
COMPANY: Parsons
ADDRESS:
EMAX PM: not known

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

TAT: ☐ Rush ____hrs. ☐ Rush ____days ☐ 7 days ☐ 14 days ☐ 21 days ☐ 30 days ☐ ____days ☐

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | TPH-GRO | TPH-DRO/RRO | PAHs | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 1 | RHMW07-GW-01 | Hawaii | 10/20/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | | | | | | no preservative |
| * 2 | RHMW07-GW-01FD | " " | 10/20/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | | | | | | no preservative |
| * 3 | | | | | | | | | | | | | | | | | | |
| * 4 | | | | | | | | | | | | | | | | | | note: water has drilling |
| * 5 | | | | | | | | | | | | | | | | | | foam i.e ethylglycol ether |
| * 6 | | | | | | | | | | | | | | | | | | |
| * 7 | | | | | | | | | | | | | | | | | | |
| * 8 | | | | | | | | | | | | | | | | | | |
| * 9 | | | | | | | | | | | | | | | | | | |
| * 0 | | | | | | | | | | | | | | | | | | |

Instructions

| Cooler # | Temp. (°C) | Sample #s |
|---|---|---|
| 1 | 5.7 | |

SAMPLER

COURIER/AIRBILL: Fedex 4033 6937 1554

| RELINQUISHED BY | Date | Time | RECEIVED BY |
|---|---|---|---|
| [signature] | 10/20/14 | 1530 | |
| | 10/21/14 | 09:15 | [signature] |

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepancies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

# CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE
EMAX CONTROL NO. * 14J144
PROJECT CODE:

CLIENT: Battelle c/o Parsons
PROJECT: Red Hill 749435
COORDINATOR: Mitch Jensen
TEL: 801 380-1375 FAX: EMAIL:
SEND REPORT TO: Gene Wright
COMPANY: Parsons
ADDRESS:
EMAX PM: 1

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

ANALYSIS REQUIRED: TPH - GRO; TPH - DRO, REO; PAHs

TAT: ☐ Rush ____hrs. ☐ Rush ____days ☐ 7 days ☐ 14 days ☐ 21 days ☐ 30 days ☐ ____days ☐

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | TPH - GRO | TPH - DRO, REO | PAHs | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RHMW06-GW-01 | Hawaii | 10/21/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | no preservation |
| 2 | RHMW06-GW-01MS | " | 10/21/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | " " |
| 3 | RHMW06-GW-01MSD | " | 10/21/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | " " |
| 4 | TB102114 | " | 10/21/14 | 1100 | 1 | | | | ✓ | 1 | | | " " |
| 5 | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |

Instructions: per contract w/ Battelle

| Cooler # | Temp. (°C) | Sample #s |
|---|---|---|
| 1 | 4.0° | |
| 2 | 5.7° | |

SAMPLER: Tim Terry / Environet
COURIER/AIRBILL: Fedex

| RELINQUISHED BY | Date | Time | RECEIVED BY |
|---|---|---|---|
| [signature] | 10/21/14 | 1530 | |
| | 10/22/14 | 09:15 | [signature] |

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

# CHAIN OF CUSTODY

**EMAX LABORATORIES, INC.**
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE
EMAX CONTROL NO. *14 J 206
PROJECT CODE:

CLIENT: Battelle c/o Parsons
PROJECT: Red Hill
COORDINATOR: Mitch Jenson 801 380 1375
TEL / FAX / EMAIL: Gene.Wright@Parsons.com
SEND REPORT TO: Gene Wright 801 553 3317
COMPANY: Parsons
ADDRESS: 10235 S. Jordan Gateway #300, South Jordan, Utah 84095
EMAX PM: Nguyen

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

ANALYSIS REQUIRED: TPH-GRO

TAT:
- ☐ Rush ____hrs.
- ☐ Rush ____days
- ☐ 7 days
- ☐ 14 days
- ☐ 21 days
- ☐ 30 days
- ☐ ____days
- ☑ per contract / QAPP

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | PRESERVATIVE CODE | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RHMW07-GW-01 | Oahu, HI | 10/27/14 | 0900 | 3 | 40ml | VOA | GW | | IC | unpreserved |
| 2 | RHMW07-GW-01FD | | 10/27/14 | 0900 | 3 | " | " | GW | | IC | " " |
| 3 | TB102714 | | 10/27/14 | 0900 | 2 | " | " | | X | IC | " " |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 0 | | | | | | | | | | | |

Instructions

| Cooler # | Temp. (°C) | Sample #s |
|---|---|---|
| 1 | 3.3 | |

SAMPLER

COURIER/AIRBILL: Fedex

| RELINQUISHED BY | Date | Time | RECEIVED BY | Date | Time |
|---|---|---|---|---|---|
| [signature] | 10/27/14 | 1030 | [signature] | 10/28/14 | 09:15 |

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepancies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

# CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. * 14K089
PROJECT CODE:

CLIENT Battelle
PROJECT Red Hill Phase 1b
COORDINATOR Carolyn Scala
TEL 215-504-5003 FAX 614-458-6620 EMAIL scalac@battelle.com
SEND REPORT TO Carolyn Scala
COMPANY Battelle
ADDRESS 301 South State St., Ste. N001, Newtown, PA 18940
EMAX PM Andy Mai

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

TAT: ☐ Rush ____hrs. ☐ Rush ____days ☐ 7 days ☐ 14 days ☒ 21 days ☐ 30 days ☐ ____days ☐

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | PAHs (SW8270C) IC | TPH-GRO (EPA 8015B-P) HC | TPH-DRO, HRO (EPA 8015Bm-E) HC | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TRIP111214 | | 11/12/14 | 0930 | 3 | 40 mL | VOA | O | X | | X | | | | | | | |
| 2 | HW111214-01 | 99-088 Koolau Village | ↓ | 1000 | 7 | 4oz 1-L | VOA + Amber | O | | X | X | X | | | | | | |
| 3 | HW111214-02 | ↓ | ↓ | 1015 | 7 | ↓ | ↓ | O | | X | X | X | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | | |

Instructions

| Cooler # | Temp. (°C) |
|---|---|
| 1 | 5.4 |

Sample #s

SAMPLER

| RELINQUISHED BY | Date | Time | RECEIVED BY |
|---|---|---|---|
| James Terry / James Terry | 11/12/14 | 1400 | |
| | 11-13-14 | 0930 | Stefanna |

COURIER/AIRBILL

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepancies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associated with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

# LABORATORY ANALYTICAL DATA REPORTS

**APPL**

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

# Data Validatable Report

December 2, 2014

Parsons
10235 South Jordan Gateway, Suite 300
South Jordan, Utah 84095

Attn: Gene Wright

Title: Report of Data: Case 74672

Project: 749435 Red Hill TO 0068, Hawaii

Contract #: Prime contract for DoD: ESAT Contract N62583-11-D-0515 TO 0068
Battelle Purchase Order # US001-0000434917

Dear Mr Wright:

Three water samples were received October 21, 2014, in good condition. Written results for the requested analyses are provided on this December 3, 2014.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Diane Anderson, danderson@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM v4.2. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/cm
Enclosure
cc: File

Number of pages in this report: _____

# Data Validation Package
# for
# 749435 Red Hill TO 0068
# ARF 74672

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LABORATORY NAME: *APPL, Inc.*


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# SAMPLE RECEIPT INFORMATION

# Sample Receipt Information

ARF: 74672

Project: 749435 Red Hill TO 0068

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: CA00046 (HW)

DoD-ELAP Certificate number: 74807

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

**Sample Receipt Information:**

The water samples were received October 21, 2014, at 2.5°C. The samples were assigned Analytical Request Form (ARF) number 74672. The sample numbers and requested analyses were compared to the chain of custody. No exception was noted.

**Sample Table**

| CLIENT ID | APPL ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| RHMW07-GW-01 | AZ05388 | WATER | 10/20/14 | 10/21/14 |
| RHMW07-GW-01FD | AZ05389 | WATER | 10/20/14 | 10/21/14 |
| TB102014 | AZ05390 | WATER | 10/20/14 | 10/21/14 |

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

APPL's laboratory control limits generated in house statistically do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control spike recoveries for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

# CASE NARRATIVE

# EPA Method 8011

**Sample Preparation:**

The water samples were extracted according to EPA method 8011. All holding times were met.

**Sample Analysis Information:**

The samples were analyzed according to the method using an Agilent Gas Chromatograph with a flame ionization detector.

**Quality Control/Assurance**

**Calibrations:**

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

**Blanks:**

No target analyte was detected above one-half the limit of quantitation (LOQ) in the method blank.

**Spikes:**

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

**Surrogates**

The surrogate recoveries are summarized in the Form 2 & 8. All surrogate recoveries were within the control limits.

**Summary:**

No problem was encountered.

**AMENDED PAGE**

# EPA Method 8260C
## Volatile Organic Compounds

**Sample Preparation:**

The water samples were purged according to EPA method 5030B. All holding times were met.

**Sample Analysis Information:**

The samples were analyzed according to EPA method 8260C using an Agilent Gas Chromatograph with a mass spectrometer detector. The samples were received in unpreserved vials and were analyzed within seven days of collection. All holding times were met.

**Quality Control/Assurance:**

**Spike Recovery:**

A Laboratory Control Spike (LCS) was used for quality assurance. A second-source standard was used for the LCS. All LCS recoveries were acceptable.

No sample was designated by the client for MS/MSD analysis.

**Surrogates:**

The surrogate recoveries are summarized in the Form 2 & 8. All surrogate recoveries were within the control limits.

**Method blanks:**

No target analyte was detected above one-half the limit of quantitation (LOQ) in the method blank.

**Calibration:**

Initial and continuing calibrations were analyzed according to the method. All calibration criteria were met.

**Tuning:**

The instrument was tuned using BFB. All method criteria were met.

**Internal Standards:**

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8260C. All method criteria were met.

**Summary:**

No analytical exception is noted. All data generated are acceptable.

**AMENDED PAGE**

# Dissolved Methane
# RSK-175

## Sample Preparation and Analysis

The water samples were analyzed with guidance from RSK-175. The samples were allowed to equilibrate for 10 minutes at 40°C and a portion of the headspace was analyzed using a Hewlett Packard Gas Chromatograph with a flame ionization detector. The samples were received in unpreserved vials and were analyzed within seven days of collection. All holding times were met.

## Quality Control/Assurance

### Spike Recovery

Laboratory Control Spikes (LCS/LCSD) were used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

### Method blanks

The blank contained no target analyte above one-half the limit of quantitation (LOQ.

### Calibration

The initial and continuing calibrations were performed with guidance from RSK-175. All acceptance criteria were met.

## Summary:

No analytical exception is noted.

# EPA Methods 6020A
# Metals

## Sample Preparation Information

The water samples were digested according to EPA methods 3015. No exception was encountered. All holding times were met.

## Analysis Information:

### Samples:

The samples were analyzed for dissolved lead according to EPA method 6020A using an Agilent 7700X ICP-MS. Due to the high sodium content in the samples, they were analyzed at a DF5. The reporting limit was raised (DF2) to the level supported by the calibration.

### Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration acceptance criteria were met.

### Blanks:

No target compound was detected at or above one-half the LOQ in the method blank.

### Spikes:

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met in the LCS.

No sample was designated by the client for MS/MSD analysis. Sample RHMW06-GW-01, from APPL SDG 74701, was selected by the laboratory as the QC sample for the analytical batch. The MS/MSD, serial dilution test, and post digestion spike will be reported in APPL report 74701.

### Internal Standards:

All method criteria were met for the internal standards.

## Summary:

No analytical exception is noted. All data are acceptable.

**AMENDED PAGE**

# EPA Methods 353.2, 9056 and SM 2320B

# Nitrate-Nitrite-N, Anions, and Alkalinity

**Sample Preparation Information:**

The water samples were prepared according to the methods.

**Analysis Information:**

**Samples:**

The samples were analyzed according to the methods. A Dionex DX500 ion chromatograph was used for the EPA 9056 analysis. A Lachat was used for the EPA 353.2 analysis. All holding times were met.

**Calibrations:**

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration criteria were met.

**Blanks:**

No target analyte was detected above one-half the LOQ in the method blanks.

**Spikes:**

Laboratory Control Spikes (LCS and/or LCS/LCSD) were used for quality assurance. All recoveries were within acceptance limits.

No sample was designated by the client for MS/MSD analysis.

**Summary:**

No analytical exception is noted. All data are acceptable.

AMENDED PAGE

# APPL Inc.
# Abbreviations and Flags

| FLAG | DESCRIPTION |
|---|---|
| # | Recovery or RPD outside control limits |
| * | Recovery or RPD outside control limits |
| B | Analyte detected in associated method blank |
| C1 | Reason for correction: wrote incorrect response |
| C2 | Reason for correction: calculated incorrectly |
| C3 | Reason for correction: needs to be rechecked |
| C4 | Reason for correction: data not usable |
| DO | Diluted out |
| E | Exceeds linear range |
| F | Estimated value |
| G1 | Includes a wide range of hydrocarbons which does not match our gasoline standard |
| G10 | Includes a match to hydrocarbon profiles within the range of mineral spirits |
| G11 | Includes a match to hydrocarbon profiles within the range of JP-4 |
| G12 | Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8 |
| G13 | Closely resembles the hydrocarbon profile of aviation gasoline |
| G14 | Analyte concentration may be biased due to carry over |
| G2 | Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline |
| G3 | Includes higher boiling hydrocarbons |
| G4 | Includes dominant peak(s) not indicative of petroleum hydrocarbons |
| G5 | Is mainly dominant peak(s) not indicative of petroleum hydrocarbons |
| G6 | Contains recognizable contaminant peak(s) which has been removed from quantitation |
| G7 | Is mainly a match to hydrocarbons within the range of gasoline |
| G8 | Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline |
| G9 | Includes hydrocarbons within the range of kerosene |
| J | Estimated value |
| M | Matrix effect |
| MI1 | Manual integration: integration does not follow baseline |
| MI2 | Manual integration: non-target peak interference |
| MI3 | Manual integration: to split a peak that was integrated as one peak by the computer. |
| MI4 | Manual integration: to integrate a split peak |
| MI5 | Manual integration: the whole peak or part of the peak was not integrated |
| MI6 | Manual integration: computer integrated wrong peak |
| MI7 | Manual integration: other – (See case narrative) |
| MDL | Method detection limit |
| ND | Not detected |
| NT | Non-target |
| Q | Acceptance criteria not met |
| T1 I | Includes wide range of hydrocarbons not indicative of diesel |
| T1 M | Is mainly wide range of hydrocarbons not necessarily indicative of diesel |
| T2 I | Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas |
| T2 M | Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas |
| T3 I | Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel |
| T3 M | Is mainly higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel |
| T4 I | Includes dominant peak(s) not indicative of hydrocarbons |
| T4 M | Is mainly dominant peak(s) not indicative of hydrocarbons |
| T5 | Contains recognizable contaminant peak(s) which has been removed from quantitation |
| T6 | Is mainly a match to hydrocarbons within range of diesel fuel |
| T7 | Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel |
| T8 | Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel |
| T9 I | Includes non-diesel hydrocarbons within boiling point range of diesel fuel |
| T9 M | Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel |
| U | Not detected |
| Y | Percent difference between primary and confirmation column > 40% |

# CHAIN OF CUSTODY,
# ARF, CRF, AND
# CLIENT COMMUNICATION

# APPL - Analysis Request Form

74672

Client: Parsons
Address: 10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095
Attn: Gene Wright
Phone: 801-553-3317 Fax:
Job: 749435 Red Hill TO 0068
PO #: PO#434917
Chain of Custody (Y/N): Y # 44316
RAD Screen (Y/N): Y pH (Y/N): Y
Turn Around Type: 2 WEEKS

Received by: CM
Date Received: 10/21/14 Time: 09:40
Delivered by: FED EX
Shuttle Custody Seals (Y/N): N Time Zone: -10
Chest Temp(s): 2.5°C
Color: VOA/D-YELL/O-ORGGRN
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Diane Anderson
QC Report Type: DVP4/NEDD/NIRIS/HI
Due Date: 11/04/14

Comments:
*pdf ARF and prelims to gene.wright@parsons.com & scalac@battelle.org*
*10 business days for form 1s; 21 calendar days for final DVP with Internal COC.*
*send 1 hardcopy DVP4 and PDF bookmarked on CD to Gene;*
*pdf via email or ftp to scalac@battelle.org*
*Guidance: DoD QSMv4.2; DoD forms U flag at LOD, LOD database*
*EDD: NEDD/NIRIS to gene.wright@parsons.com & scalac@battelle.org*
*8011 = EDB & DBCP only; RSK = Methane only*
*add chloride to 9056 anlaysis per 11/3 email (chc)*

Sample Distribution:
GC: 2-$8011
Extractions: 2-_MWE012
VOA: 3-$86CREDW, 2-$RSK50
Metals: 2-$62A14WD(Pb)
Wetlab: 2-$232W(ALK), 2-$35OF(TOXN), 1-$9056DOD(CL,SO4), 1-$9056DOD(SO4)
Other: 2-_M3015F

Charges:

Invoice To:
BATTELLE MEMORIAL INSTITUTE
accountspayable@battelle.org
505 King Ave
Columbus OH 43201-2696

| | Client ID | APPL ID | Sampled | Analyses Requested |
|---|---|---|---|---|
| 1. | RHMW07-GW-01 | AZ05388W | 10/20/14 11:00 | $232W(ALK), $35OF(TOXN), $62A14WD(Pb), $8011, $86CREDW, $9056DOD(CL,SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs |
| 2. | RHMW07-GW-01FD | AZ05389W | 10/20/14 11:00 | $232W(ALK), $35OF(TOXN), $62A14WD(Pb), $8011, $86CREDW, $9056DOD(SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs |
| 3. | TB102014 | AZ05390W | 10/20/14 11:00 | $86CREDW -- unpreserved VOA 7day HT; LL VOCs |

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -10 UTC

# APPL Sample Receipt Form

ARF# **74672**

| Sample | Container Type | Count | pH |
|---|---|---|---|
| AZ05388 | 2 PL 500mL | 1 | NA |
| | 7 PL 250mL - HNO3 | 1 | 1.7 |
| | 29 PL 125mL - H2SO4 | 1 | 1.7 |
| | 15 VOAs - NP | 9 | NA |
| AZ05389 | 2 PL 500mL | 1 | NA |
| | 7 PL 250mL - HNO3 | 1 | 1.7 |
| | 29 PL 125mL - H2SO4 | 1 | 1.7 |
| | 15 VOAs - NP | 9 | NA |
| AZ05390 | 15 VOAs - NP | 2 | NA |

| Sample | Container Type | Count | pH |
|---|---|---|---|

74672
2.5
YL 10/21/14

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

# CHAIN OF CUSTODY RECORD

C.O.C. 44316

Report to: PLEASE PRINT
Company Name: Battelle / Parsons Phone: 801 553-3317
Address:
Fax:
Attn: Gene Wright

Invoice to: PLEASE PRINT
Company Name: Phone:
Address:
Fax:
Attn:

Project Name/Number: 749435
Purchase Order Number:
Sampler (Print): Jim Terry / Environet
Sampler (Signature): Jim Terry

Date Shipped: 10/20/14
Carrier: Fedex
Waybill No.: 8033 9337 1525
Comments: drilling foam in water

| Sample Identification | Location | Date Collected | Time Collected | Time Zone | No. of Containers | Matrix: Aq | Sed. | Soil | | VOCs | EDB | methane | TAK/SO4 | Total N | Lead | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHMW07-GW-01 | Red Hill, HI | 10/20/14 | 1100 | HI | 12 | / | | | | ~~3~~ | ~~3~~ | ~~3~~ | 1 | 1 | 1 | | | | | | | | | |
| RHMW07-GW-01FD | Red Hill, HI | 10/20/14 | 1100 | HI | 12 | / | | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | | | |
| TB 102014 | " " | " " | " | " | 2 | / | | | | 2 | | | | | | | | | | | | | | |

Analysis Requested/Method Number

i.e. ethylglycol ester
~~VOCs~~
Lead filtered

Shuttle Temperature:
Turnaround Requested: Check one
☐ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☐ Disposal by Lab (30-day retention)

| Relinquished by sampler: | Date | Time | Received by: | Relinquished by: | Date | Time | Received by: |
|---|---|---|---|---|---|---|---|
| Jim Terry | 10/20/14 | 1530 | | | | | |
| Relinquished by: | Date | Time | Received by: | Relinquished by: | Date | Time | Received at lab by: |
| | | | | | 10/21/14 | 09:40 | Yong Zu |

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

*See reverse side for Container Preservative and Sampling Information*

**COOLER RECEIPT FORM** **ARF: 74672**

1) Project: 749435 Red Hill TO 0068 Date Received: 10/21/14

**2) Coolers:** Number of Coolers: 1

3) No Were custody seals present and intact?
How many? 0 Name/Date on seal?

4) YES Was there a shipping slip? Carrier name: FED EX

5) Type of packing in cooler: X bubble wrap __ popcorn __ foam __ plastic bags
X wet ice __ dry ice __ no ice __ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use A39267

8) Cooler temp(s): In °C
1: 2.5 2: 3: 4: 5: 6:
7: 8: 9: 10: 11: 12:

**Chain of custody:**

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

**Sample Labels:**

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

**Sample Containers:**

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea:
Smaller than a pea:

**Preservation Hold time:**

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) Yes Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) Yes Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) Yes Were unpreserved VOA Vials received?

23) Yes Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF? 10/22/14 10:30
pH strip lot number: 90B04
Lab notified if pH was not adequate:

Notes/Deficiencies:

Personnel receiving samples: YL Second reviewer: BB
Personnel labeling samples: MM
Project manager notified: Date/Time of notification
Name of client notified: Date/Time of notification

# Chain of Custody

ARF: 74672

Client: Parsons
ATTN: Gene Wright
Project: 749435 Red Hill TO 0068
PO: PO#434917

| Container | Moved To | Date - Time | User Name | Reason For Move |
|---|---|---|---|---|
| **Sample Number: AZ05388** | **Client ID: RHMW07-GW-01** | | | |
| W01 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/24/2014 11:26:31 | Saldana, Regina | VOA Key -> Regina Saldana |
| W02 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/26/2014 12:53:19 | Gokal, Dipti | VOA Key -> Dipti Gokal |
| W03 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W04 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-FRODO | 10/22/2014 20:49:46 | Fong, Leonard | VOA Key -> Leonard Fong |
| | pH_Test | 10/28/2014 16:28:09 | Saldana, Regina | pH Verification: pH = 6 (lot HC412469) |
| W05 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W06 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W07 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Extraction | 10/27/2014 13:34:52 | Yang, Kia | Key #3 -> Kia Yang Extraction/Spent |
| | Extraction | 10/27/2014 15:22:38 | Caballero, Irvin | Key #3 -> Irvin Caballero Extraction/Spen |
| W08 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W09 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W10 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Wetlab | 10/22/2014 11:00:00 | Mehlman, Moriah | Key #7 -> Moriah Mehlman |
| | D - Yellow | 10/22/2014 15:29:05 | Mehlman, Moriah | Moriah Mehlman -> Key #7 |
| | Wetlab | 11/03/2014 08:36:17 | Bulnes, Briana | Key #7 -> Briana Bulnes |
| | D - Yellow | 11/03/2014 14:54:07 | Bulnes, Briana | Briana Bulnes -> Key #7 |
| W11 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Wetlab | 11/04/2014 12:17:20 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | D - Yellow | 11/04/2014 13:36:30 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| | Wetlab | 11/05/2014 11:23:02 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | D - Yellow | 11/05/2014 15:18:03 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| W12 | O-OrangeGreen | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Metals | 11/05/2014 10:42:39 | Moreyda, Nick | Key #2 -> Nick Moreyda |
| | O - OrangeGree | 11/05/2014 12:04:52 | Moreyda, Nick | Nick Moreyda -> Key #2 |

# Chain of Custody

ARF: 74672

Client: Parsons
ATTN: Gene Wright
Project: 749435 Red Hill TO 0068
PO: PO#434917

| Container | Moved To | Date - Time | User Name | Reason For Move |
|---|---|---|---|---|
| **Sample Number: AZ05389** | **Client ID: RHMW07-GW-01FD** | | | |
| W01 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/24/2014 11:26:33 | Saldana, Regina | VOA Key -> Regina Saldana |
| W02 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/26/2014 12:53:18 | Gokal, Dipti | VOA Key -> Dipti Gokal |
| W03 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W04 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-FRODO | 10/22/2014 20:49:49 | Fong, Leonard | VOA Key -> Leonard Fong |
| | pH_Test | 10/28/2014 16:28:12 | Saldana, Regina | pH Verification: pH = 6 (lot HC412469) |
| W05 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W06 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W07 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W08 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Extraction | 10/27/2014 13:34:49 | Yang, Kia | Key #3 -> Kia Yang Extraction/Spent |
| | Extraction | 10/27/2014 13:34:55 | Yang, Kia | Key #3 -> Kia Yang Extraction/Spent |
| | Extraction | 10/27/2014 15:22:38 | Caballero, Irvin | Key #3 -> Irvin Caballero Extraction/Spen |
| W09 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| W10 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Wetlab | 10/22/2014 11:00:02 | Mehlman, Moriah | Key #7 -> Moriah Mehlman |
| | D - Yellow | 10/22/2014 15:29:07 | Mehlman, Moriah | Moriah Mehlman -> Key #7 |
| | Wetlab | 11/03/2014 08:36:22 | Bulnes, Briana | Key #7 -> Briana Bulnes |
| | D - Yellow | 11/03/2014 14:54:10 | Bulnes, Briana | Briana Bulnes -> Key #7 |
| W11 | D-Yellow | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Wetlab | 11/04/2014 12:17:14 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | D - Yellow | 11/04/2014 13:36:32 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| | Wetlab | 11/05/2014 11:23:06 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | D - Yellow | 11/05/2014 15:18:11 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| W12 | O-OrangeGreen | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | Metals | 11/05/2014 10:42:38 | Moreyda, Nick | Key #2 -> Nick Moreyda |
| | O - OrangeGree | 11/05/2014 12:04:50 | Moreyda, Nick | Nick Moreyda -> Key #2 |

# Chain of Custody

Client: Parsons
ATTN: Gene Wright
Project: 749435 Red Hill TO 0068
PO: PO#434917

ARF: 74672

| Container | Moved To | Date - Time | User Name | Reason For Move |
|---|---|---|---|---|
| **Sample Number: AZ05390** | **Client ID: TB102014** | | | |
| W01 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/24/2014 11:25:19 | Saldana, Regina | VOA Key -> Regina Saldana |
| | pH_Test | 11/12/2014 10:23:43 | Gokal, Dipti | pH Verification: pH = 6 (lot HC421273) |
| W02 | VOA_Frig | 10/21/2014 09:40:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/26/2014 12:53:15 | Gokal, Dipti | VOA Key -> Dipti Gokal |

# 8011
# for
# DBCP & EDB Fumigants

APPL, INC.

# 8011
# for
# DBCP & EDB Fumigants
# QC Summary

APPL, INC.

# Method Blank
## EPA 8011

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141027W-05593 - 191515**
Batch ID: #8011-141027A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | SURROGATE: 1,3-DIBROMOPRO | 99.0 | 70-132 | | | % | 10/27/14 | 10/30/14 |

Quant Method:80111027.M
Run #:1022112
Instrument:Herbie
Sequence:141022
Initials:MA

*GC SC-Blank-REG MDLs*
*Printed: 11/14/14 2:56:49 PM*

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 74672

Case No: 74672 Date Analyzed: 10/30/14

Matrix: WATER Instrument: Herbie

| APPL ID. | Client Sample No. | SURROGATE: 1,3-DIBROMOPROPANE (S) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141027A-BLK | Blank | 70-132 | 99.0 | | | | |
| 141027A-LCS | Lab Control Spike | 70-132 | 104 | | | | |
| AZ05388 | RHMW07-GW-01 | 70-132 | 99.2 | | | | |
| AZ05389 | RHMW07-GW-01FD | 70-132 | 90.5 | | | | |

Comments: Batch: #8011-141027A

# Laboratory Control Spike Recovery
## EPA 8011

APPL ID: **141027W-05593 LCS - 191515**
Batch ID: #8011-141027A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| DBCP | 0.482 | 0.507 | 105 | 60-140 |
| EDB | 0.482 | 0.491 | 102 | 60-140 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | 0.364 | 104 | 70-132 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | 80111027.M |
| Extraction Date : | 10/27/14 |
| Analysis Date : | 10/30/14 |
| Instrument : | Herbie |
| Run : | 1022114 |
| Initials : | MA |

*Printed: 11/14/14 2:56:51 PM*
*APPL Standard LCS*

# 8011

Form 4

## Blank Summary

Lab Name: APPL, Inc. SDG No: 74672

Case No: 74672 Date Analyzed: 10/30/14

Matrix: WATER Instrument: Herbie

Blank ID: 141027A-BLK Time Analyzed: 1235

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141027A-BLK | Blank | 1022112 | 10/30/14 1235 |
| 141027A-LCS | Lab Control Spike | 1022114 | 10/30/14 1316 |
| AZ05388 | RHMW07-GW-01 | 1022115 | 10/30/14 1336 |
| AZ05389 | RHMW07-GW-01FD | 1022116 | 10/30/14 1357 |

Comments: Batch: #8011-141027A

*Printed: 11/14/14 2:57:07 PM*
*Form 4, Blank Summary*

# 8011
# for
# DBCP & EDB Fumigants
# Sample Data

APPL, INC.

# EPA 8011

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05388**
QCG: #8011-141027A-191515

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| 8011 | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 10/27/14 | 10/30/14 |
| 8011 | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 10/27/14 | 10/30/14 |
| 8011 | SURROGATE: 1,3-DIBROMOPROPANE | 99.2 | 70-132 | | | % | 10/27/14 | 10/30/14 |

Quant Method: 80111027.M
Run #: 1022115
Instrument: Herbie
Sequence: 141022
Dilution Factor: 1
Initials: MA

*Printed: 11/14/14 2:57:08 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022115.D\ECD1A.CH Vial: 15
Signal #2 : G:\HERBIE\DATA\141022\1022115.D\ECD2B.CH
Acq On : 10-30-14 13:36:53 Operator: MA
Sample : AZ05388W07 2/34.03G Inst : Herbie
Misc : soil Multiplr: 1.03
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

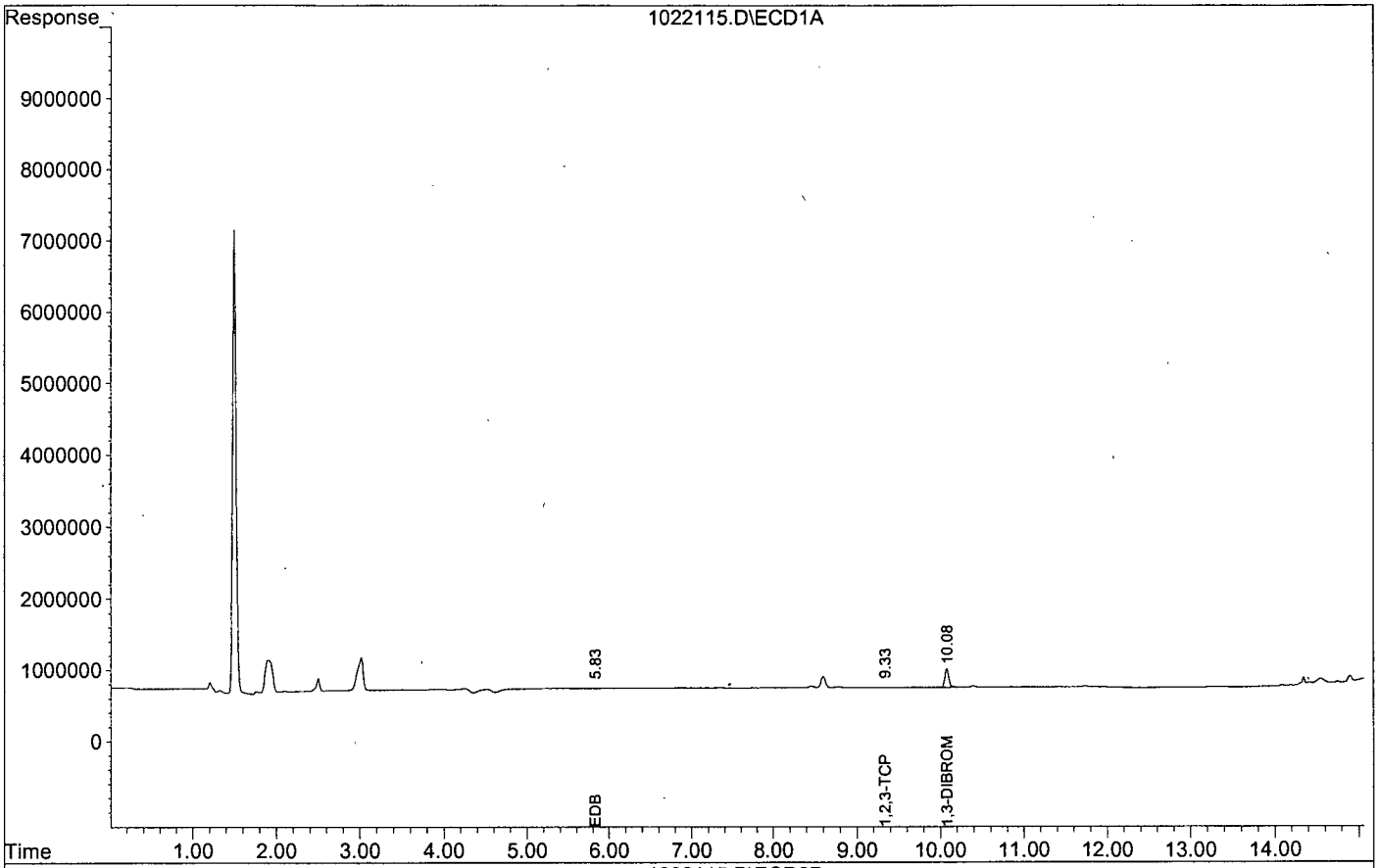
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 261792 | 334382 | 0.357 | 0.344 |
| Spiked Amount 0.360 | | | Recovery | = | 99.17% | 95.56% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.83 | 7.31 | 1054 | 1296 | 0.001 | 0.001 |
| 2) TM 1,2,3-TCP | 9.33 | 0.00 | 1047 | 0 | 0.006 | N.D. # |
| Target Compounds | | | | | | |
| 4) TM DBCP | 0.00 | 0.00 | 0 | 0 | N.D. | N.D. |

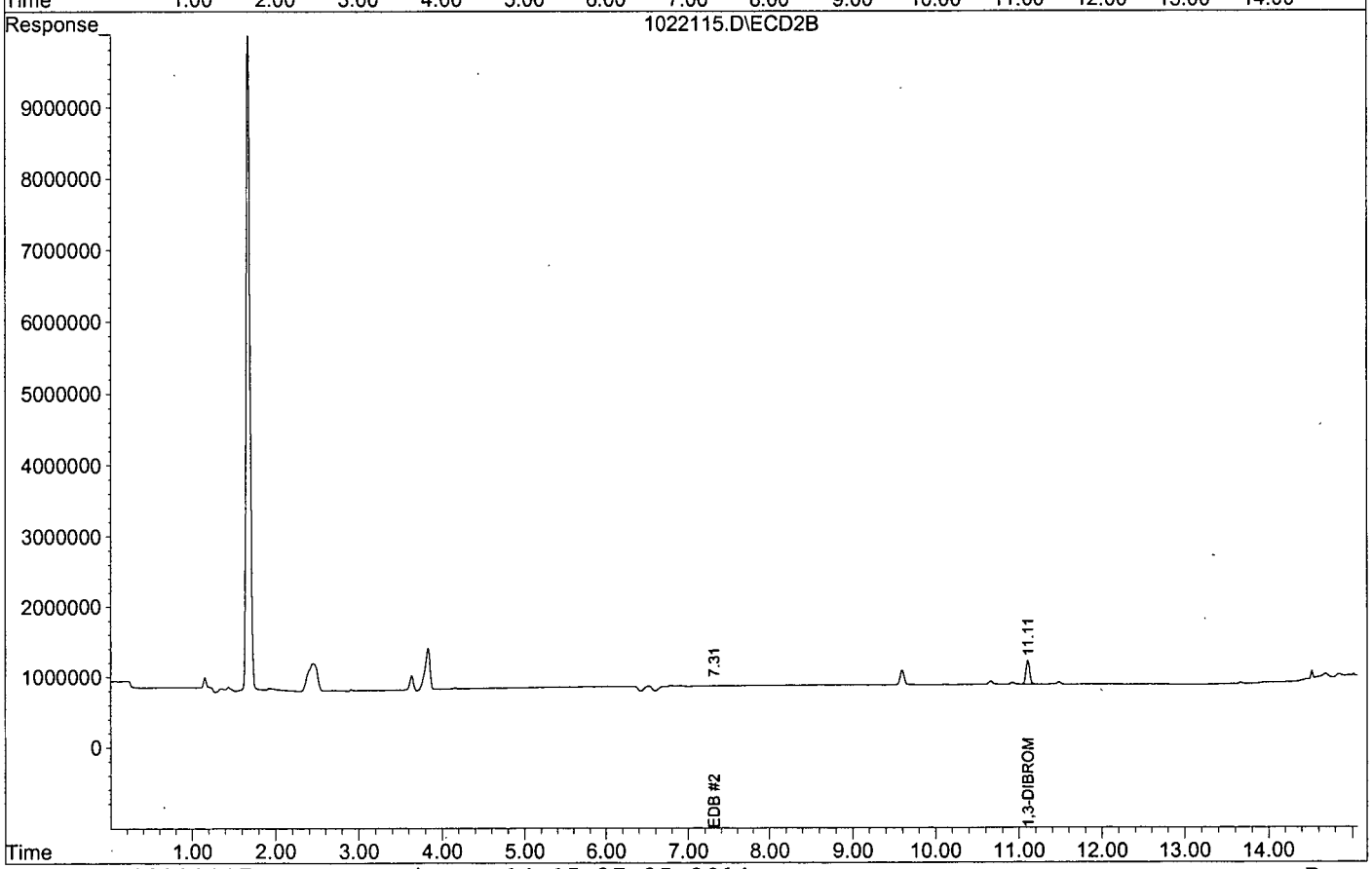
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022115.D
Acq On : 10-30-14 13:36:53
Sample : AZ05388W07 2/34.03G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 15
Operator: MA
Inst : Herbie
Multiplr: 1.03



# EPA 8011

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01FD**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05389**
QCG: #8011-141027A-191515

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| 8011 | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 10/27/14 | 10/30/14 |
| 8011 | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 10/27/14 | 10/30/14 |
| 8011 | SURROGATE: 1,3-DIBROMOPROPANE | 90.5 | 70-132 | | | % | 10/27/14 | 10/30/14 |

Quant Method: 80111027.M
Run #: 1022116
Instrument: Herbie
Sequence: 141022
Dilution Factor: 1
Initials: MA

*Printed: 11/14/14 2:57:08 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022116.D\ECD1A.CH Vial: 16
Signal #2 : G:\HERBIE\DATA\141022\1022116.D\ECD2B.CH
Acq On : 10-30-14 13:57:13 Operator: MA
Sample : AZ05389W08 2/34.63G Inst : Herbie
Misc : soil Multiplr: 1.01
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

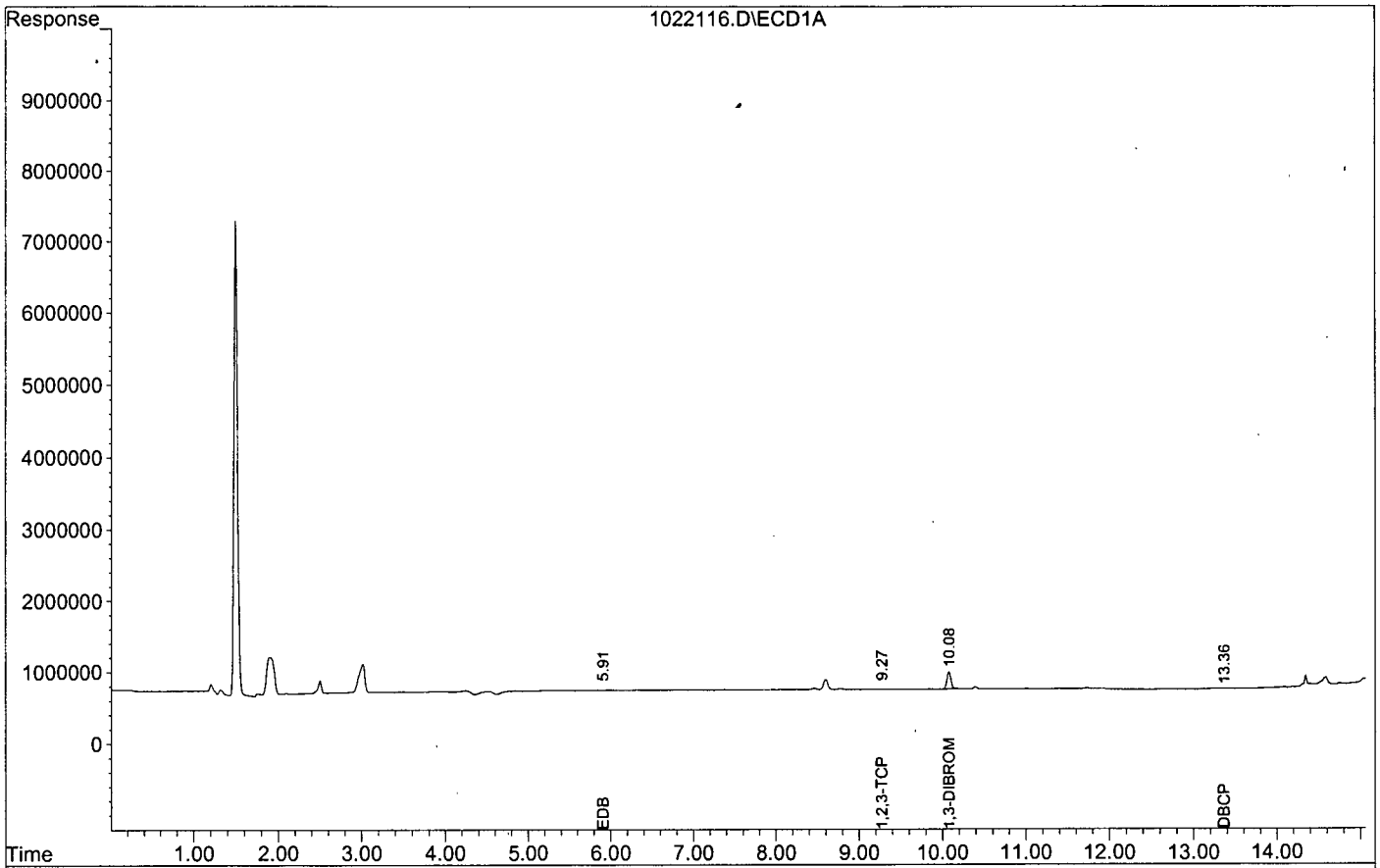
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 238977 | 315981 | 0.320 | 0.319 |
| Spiked Amount 0.354 | | | Recovery | = | 90.46% | 90.18% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.91f | 7.38f | 1264 | 1261 | 0.001 | 0.001 # |
| 2) TM 1,2,3-TCP | 9.27 | 10.43f | 748 | 1802 | 0.004 | 0.007 # |
| 4) TM DBCP | 13.36 | 14.14 | 933 | 1325 | 0.000 | 0.000 |
| Target Compounds | | | | | | |

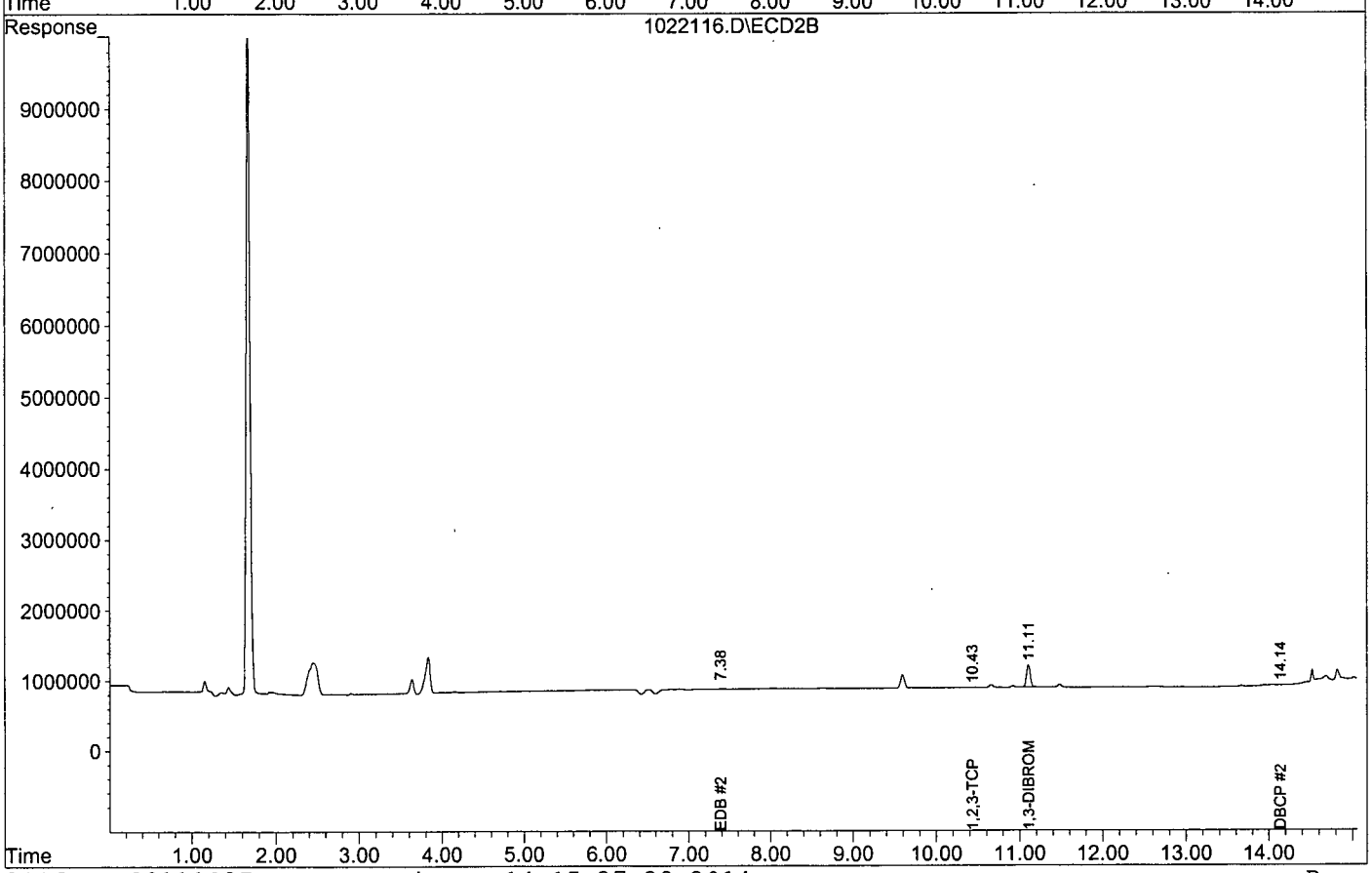
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022116.D
Acq On : 10-30-14 13:57:13
Sample : AZ05389W08 2/34.63G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 16
Operator: MA
Inst : Herbie
Multiplr: 1.01



# 8011
# for
# DBCP & EDB Fumigants
# Calibration Data

APPL, INC.

DBCP/EDB/1,2,3-TCP Analysis by
504 8011 1027

# Form 6
## Initial Calibration

Lab Name: APPL, Inc. SDG No: 74672
Case No: Initial Cal. Date: 10/30/14
Matrix: Soil Instrument: Herbie Initials: MA

| | | Compound | 1022106.D 1 | 1022107.D 2 | 1022108.D 3 | 1022109.D 4 | 1022110.D 5 | 1022111 D 6 | | | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TM | EDB | 595765 | 547208 | 481543 | 479920 | 452904 | 437705 | | | | | 499174 | 12 | TM | |
| 2 | TM | 1,2,3-TCP | 47118 | 112491 | 102571 | 104225 | 102452 | 98076 | | | | | 94489 | 25 | TM | NT |
| 3 | S | 1,3-DIBROMOPROPANE(S) | 432382 | 417897 | 364507 | 363434 | 348947 | 334319 | | | | | 376914 | 10 | S | |
| 4 | TM | DBCP | 1446588 | 1276064 | 1188817 | 1204223 | 1179283 | 1158534 | | | | | 1242251 | 8.7 | TM | |
| 5 | | Signal #2 | | | | | | | | | | | | | | |
| 6 | TM | EDB #2 | 855176 | 796248 | 727444 | 754469 | 723203 | 700367 | | | | | 759485 | 7.5 | TM | |
| 7 | TM | 1,2,3-TCP #2 | 33412 | 152616 | 139687 | 139903 | 135633 | 130487 | | | | | 121956 | 36 | TM | NT |
| 8 | S | 1,3-DIBROMOPROPANE(S) #2 | 519235 | 542629 | 489701 | 494323 | 486242 | 466663 | | | | | 499799 | 5.4 | S | |
| 9 | TM | DBCP #2 | 2186294 | 2340950 | 2153601 | 2312769 | 2302967 | 2293735 | | | | | 2265053 | 3.4 | TM | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
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| 32 | | | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | |

3.1029252

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022106.D\ECD1A.CH Vial: 6
Signal #2 : G:\HERBIE\DATA\141022\1022106.D\ECD2B.CH
Acq On : 10-30-14 10:34:12 Operator: MA
Sample : 8011-1 10/27/14 2/33.04G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:32 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

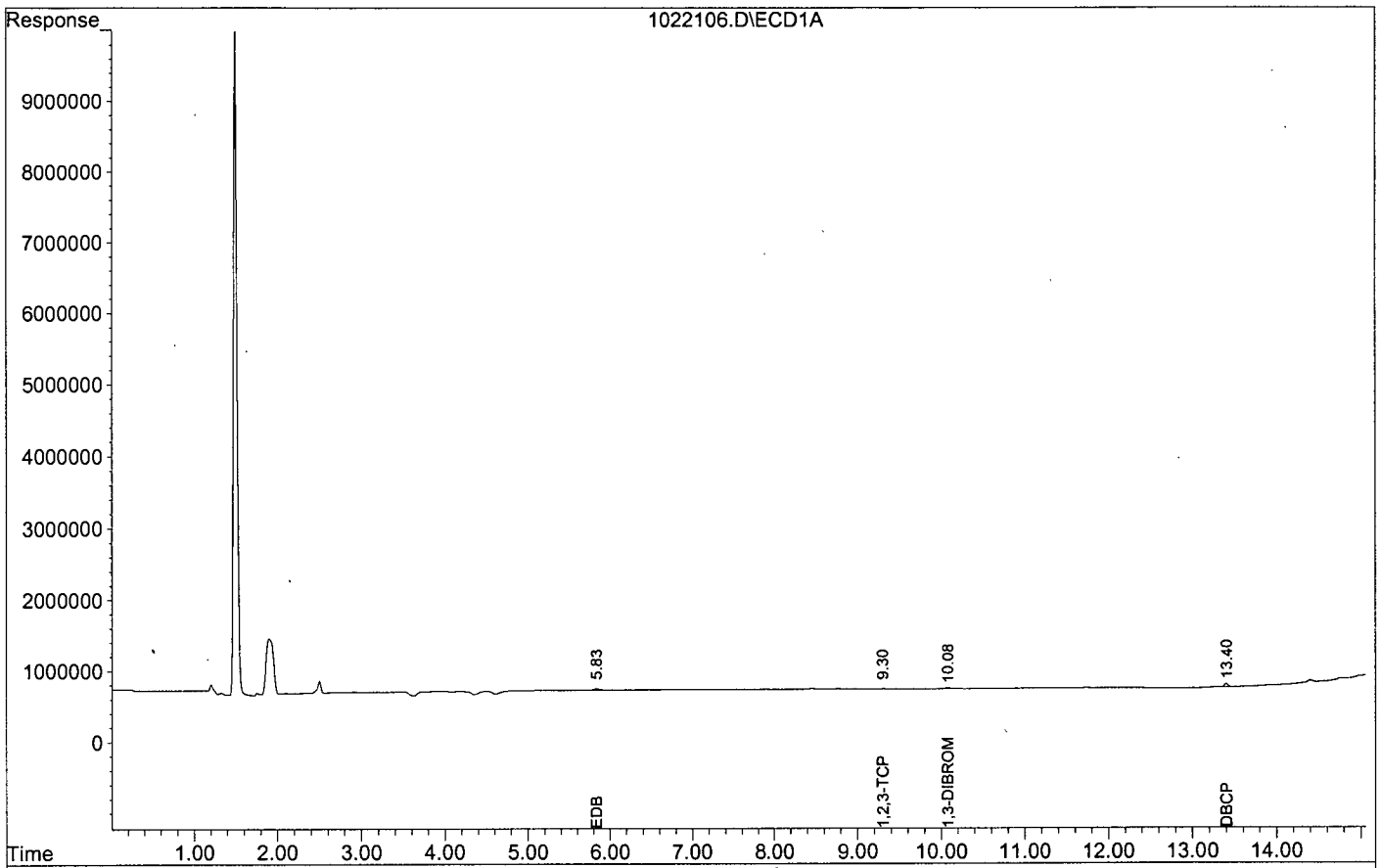
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 14701 | 17654 | 0.020 | 0.018 |
| Spiked Amount 0.350 | | | Recovery | = | 5.71% | 5.14% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.83 | 7.28 | 20256 | 29076 | 0.020 | 0.019 |
| 2) TM 1,2,3-TCP | 9.30 | 10.51 | 1602 | 1136 | 0.008 | 0.005 # |
| 4) TM DBCP | 13.40 | 14.13 | 49184 | 74334 | 0.020 | 0.016 |
| Target Compounds | | | | | | |

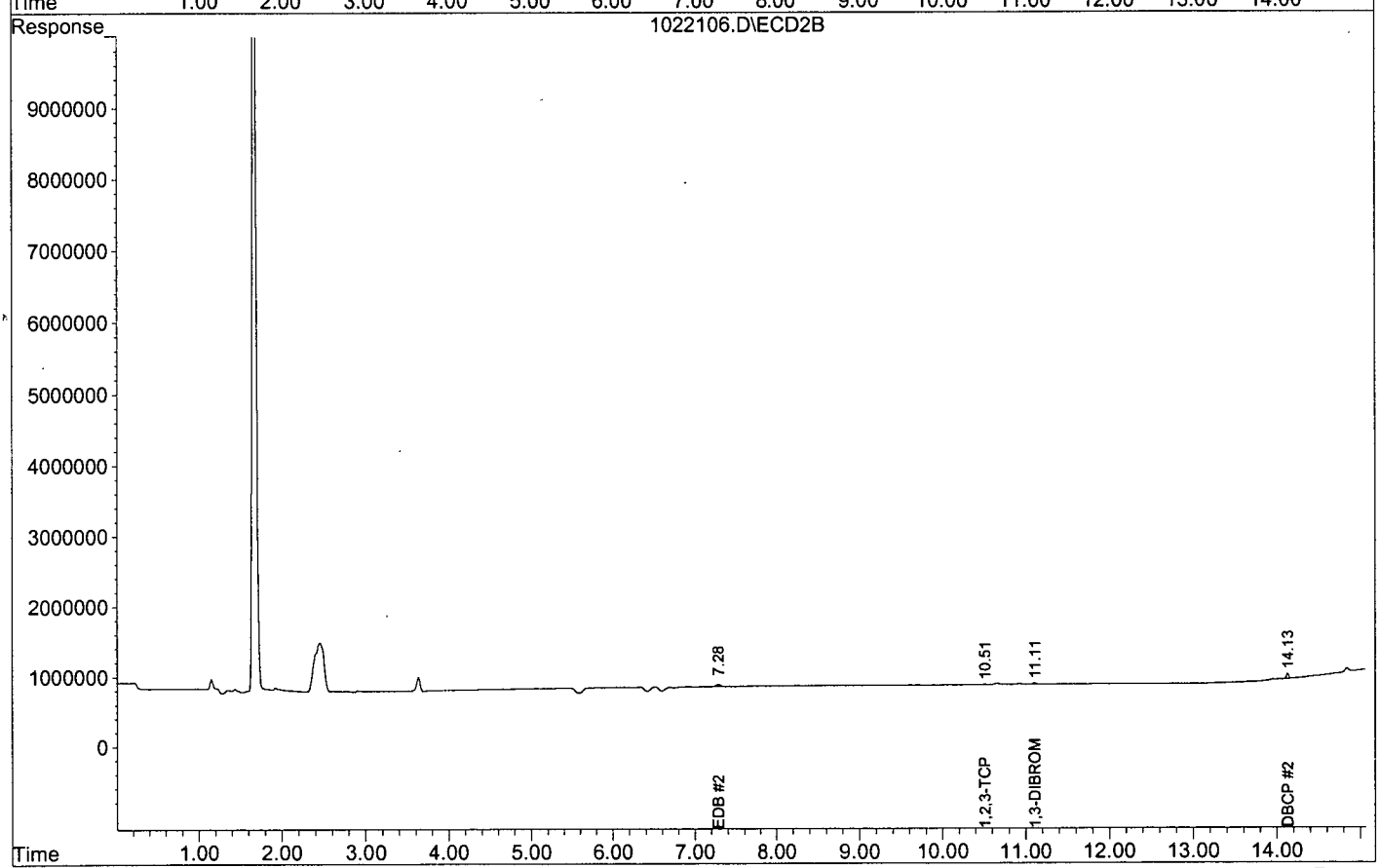
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022106.D
Acq On : 10-30-14 10:34:12
Sample : 8011-1 10/27/14 2/33.04G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 6
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022107.D\ECD1A.CH Vial: 7
Signal #2 : G:\HERBIE\DATA\141022\1022107.D\ECD2B.CH
Acq On : 10-30-14 10:54:24 Operator: MA
Sample : 8011-2 10/27/14 2/33.31G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:32 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 190561 | 247439 | 0.253 | 0.248 |
| Spiked Amount 0.350 | | | Recovery | = | 72.29% | 70.86% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 249527 | 363089 | 0.250 | 0.239 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 51296 | 69593 | 0.271 | 0.285 |
| 4) TM DBCP | 13.40 | 14.13 | 581885 | 1067473 | 0.234 | 0.236 |

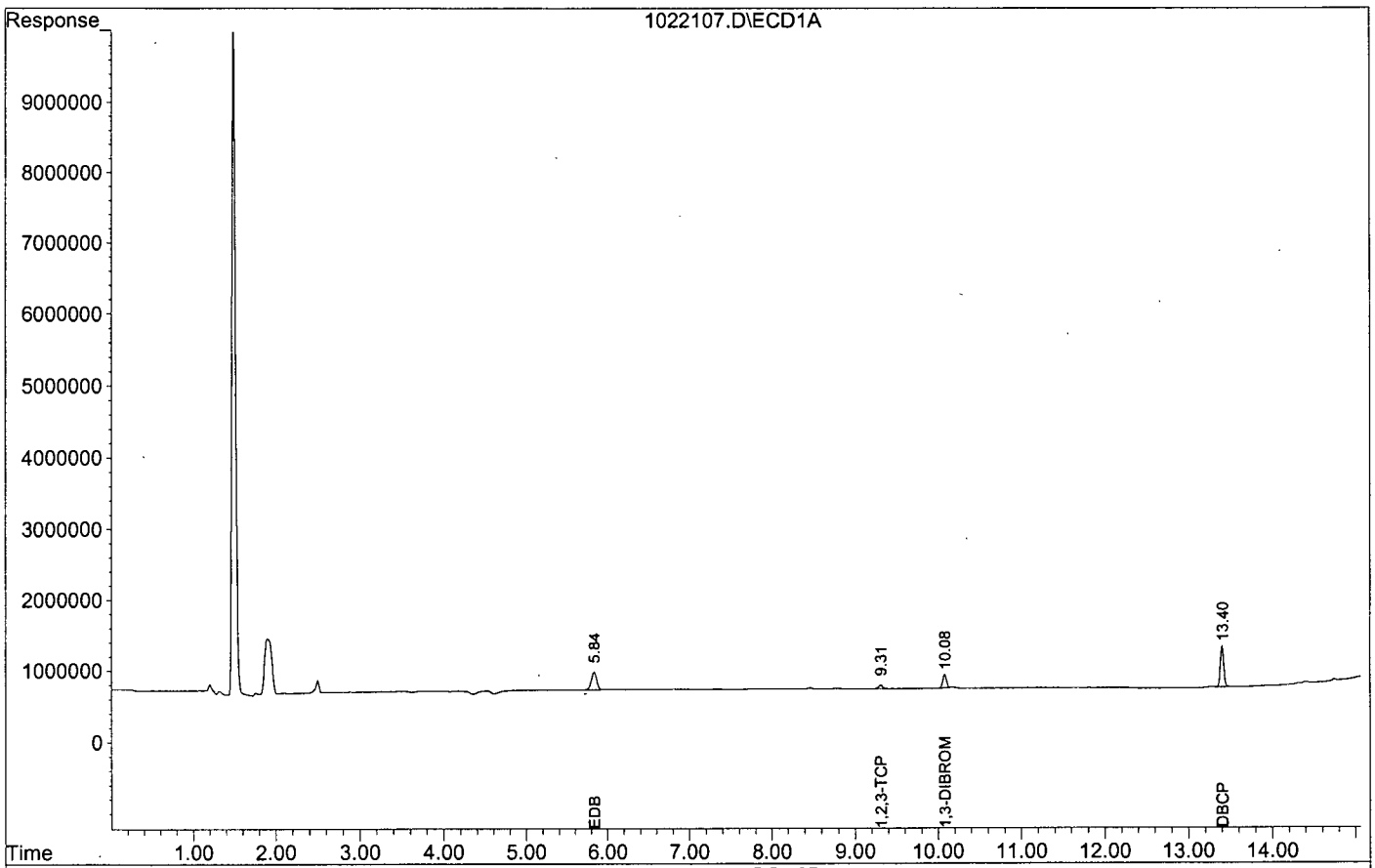
Target Compounds

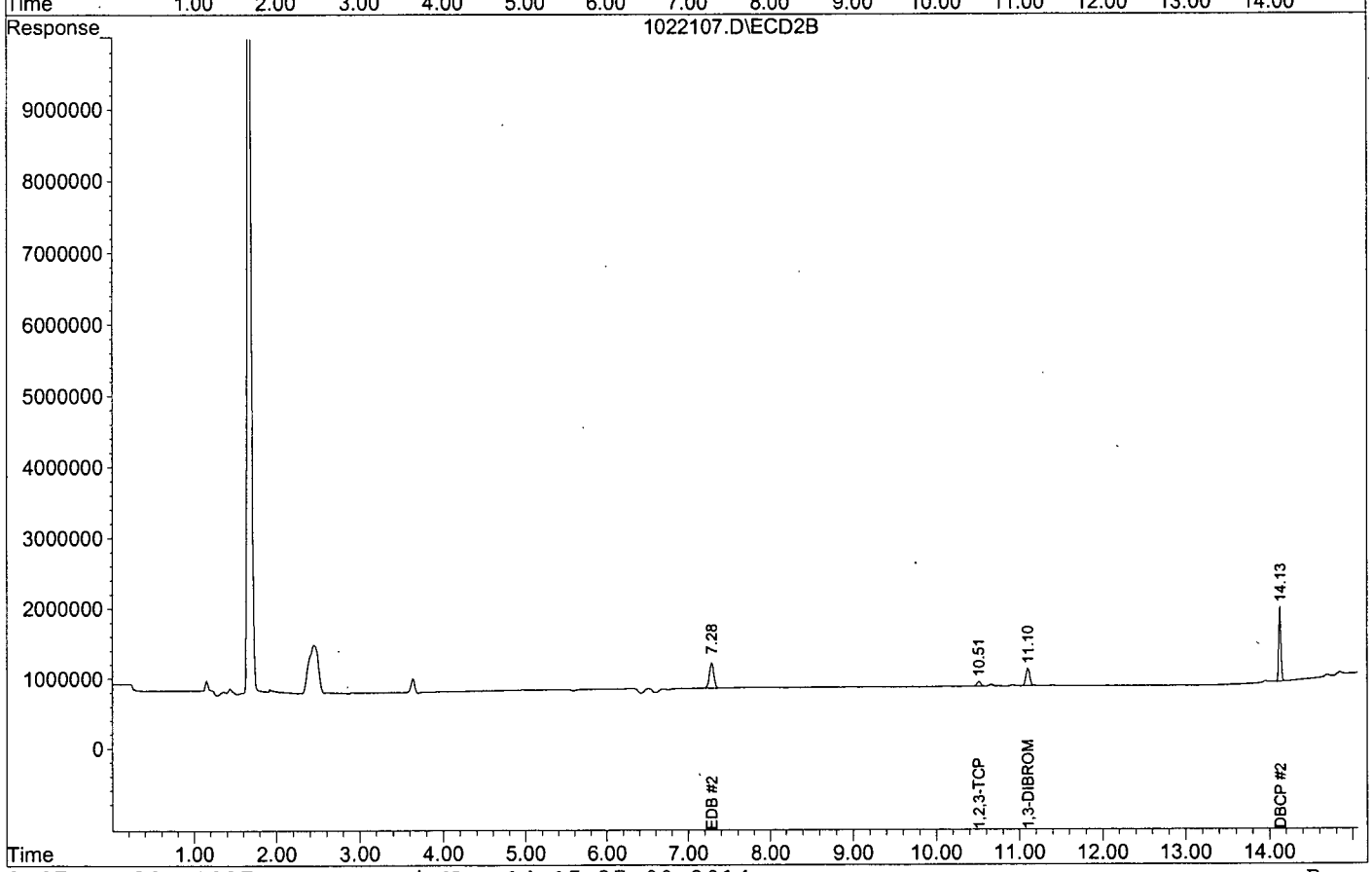
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022107.D
Acq On : 10-30-14 10:54:24
Sample : 8011-2 10/27/14 2/33.31G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 7
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022108.D\ECD1A.CH Vial: 8
Signal #2 : G:\HERBIE\DATA\141022\1022108.D\ECD2B.CH
Acq On : 10-30-14 11:14:47 Operator: MA
Sample : 8011-3 10/27/14 2/32.25G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

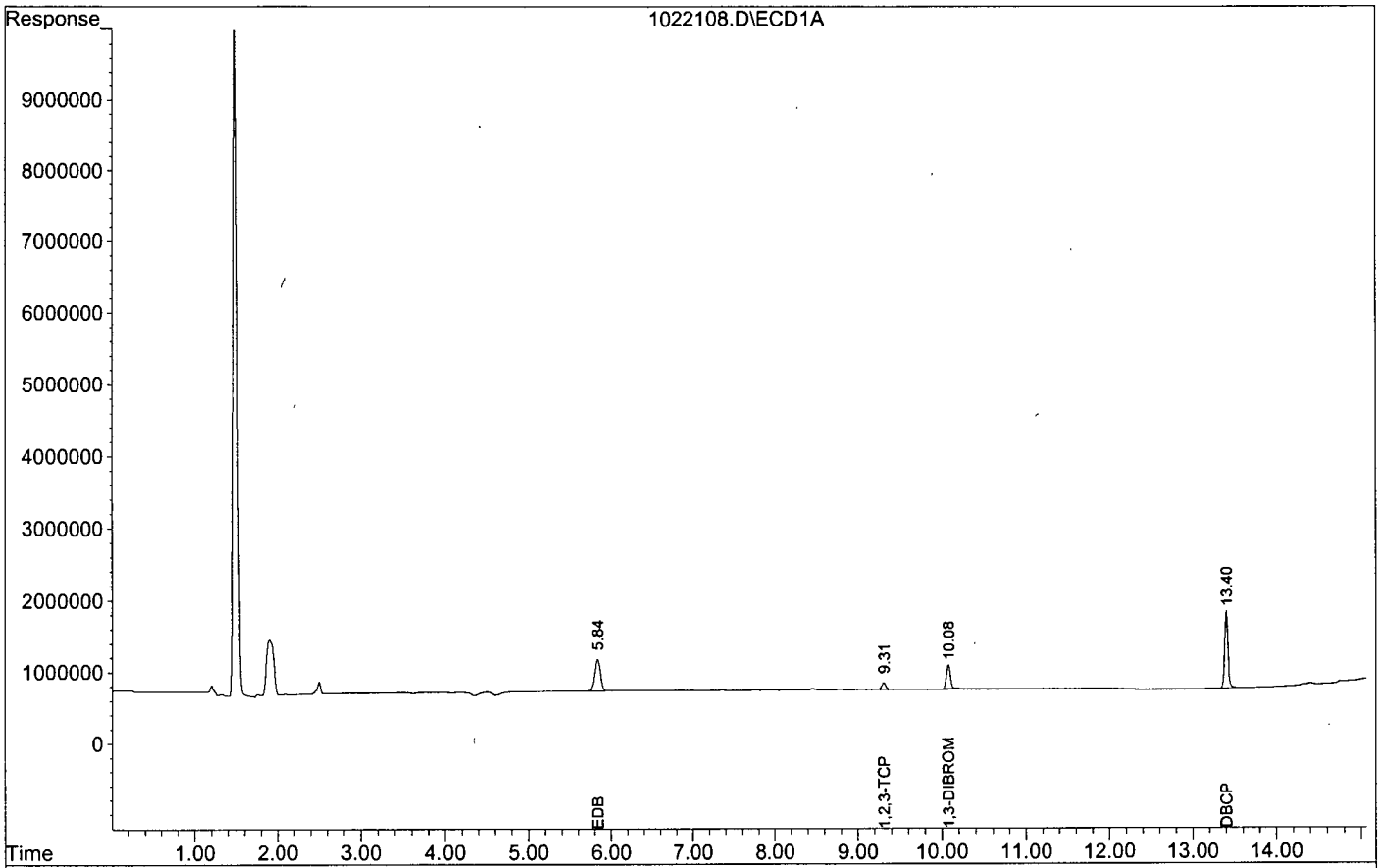
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 333159 | 447587 | 0.442 | 0.448 |
| Spiked Amount 0.350 | | | Recovery | = | 126.29% | 128.00% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 440130 | 664884 | 0.441 | 0.438 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 93750 | 127674 | 0.496 | 0.523 |
| 4) TM DBCP | 13.40 | 14.13 | 1086579 | 1968391 | 0.437 | 0.435 |
| Target Compounds | | | | | | |

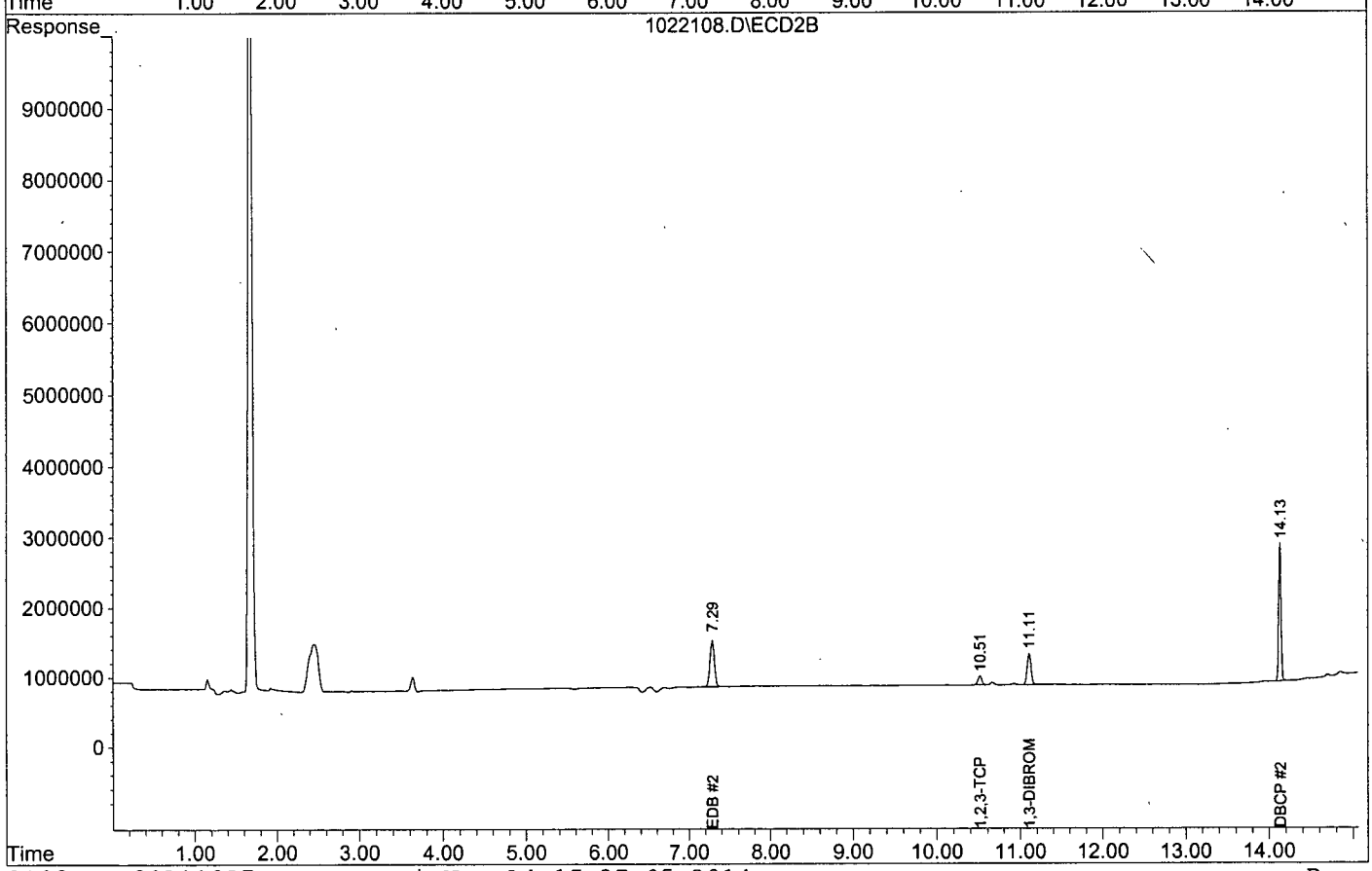
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022108.D
Acq On : 10-30-14 11:14:47
Sample : 8011-3 10/27/14 2/32.25G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 8
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022109.D\ECD1A.CH Vial: 9
Signal #2 : G:\HERBIE\DATA\141022\1022109.D\ECD2B.CH
Acq On : 10-30-14 11:35:01 Operator: MA
Sample : 8011-4 10/27/14 2/32.52G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

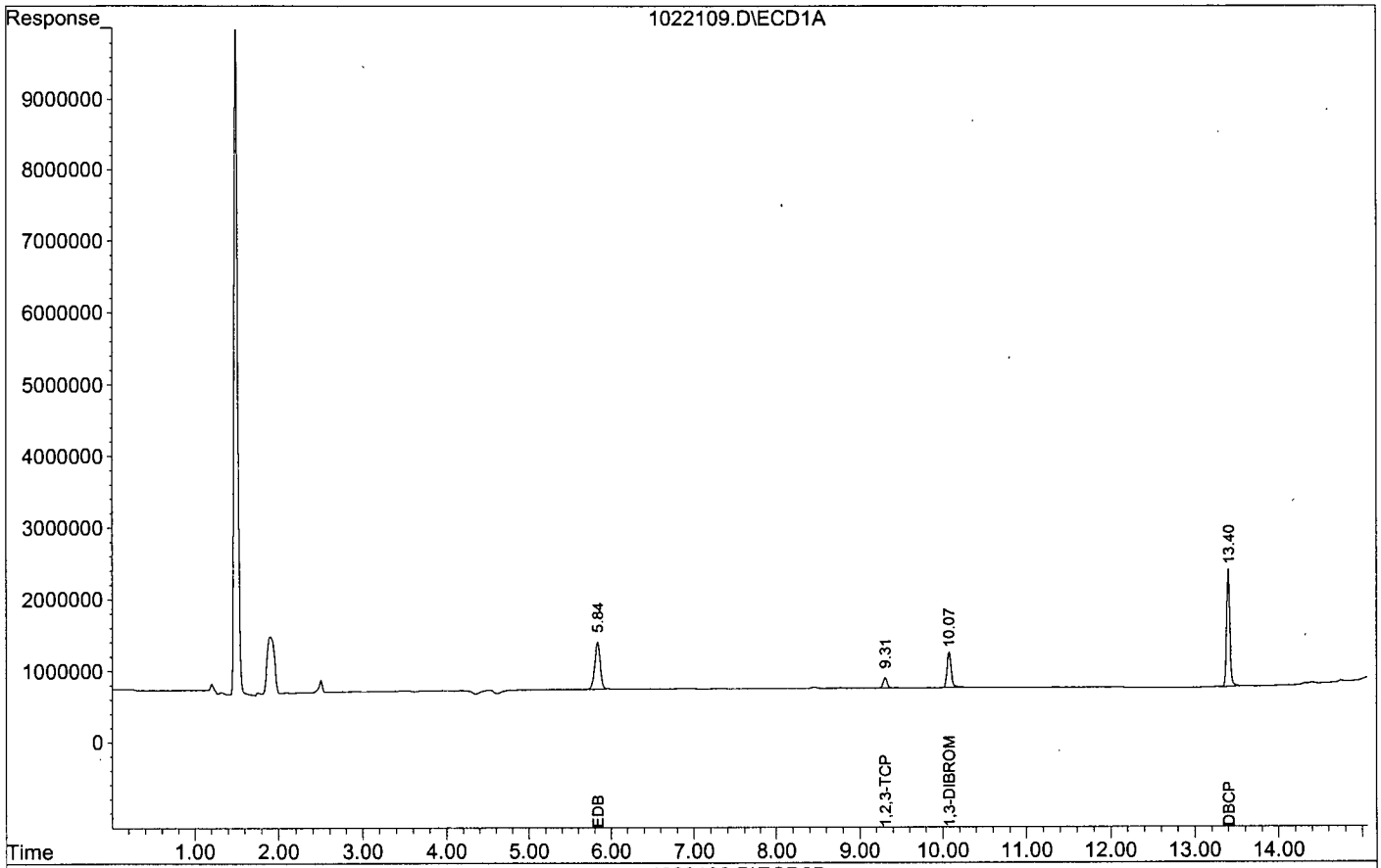
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.10 | 497904 | 677222 | 0.661 | 0.677 |
| Spiked Amount 0.350 | | | Recovery | = | 188.86% | 193.43% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 657490 | 1033623 | 0.659 | 0.680 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 142788 | 191667 | 0.756 | 0.786 |
| 4) TM DBCP | 13.40 | 14.13 | 1649785 | 3168494 | 0.664 | 0.699 |
| Target Compounds | | | | | | |

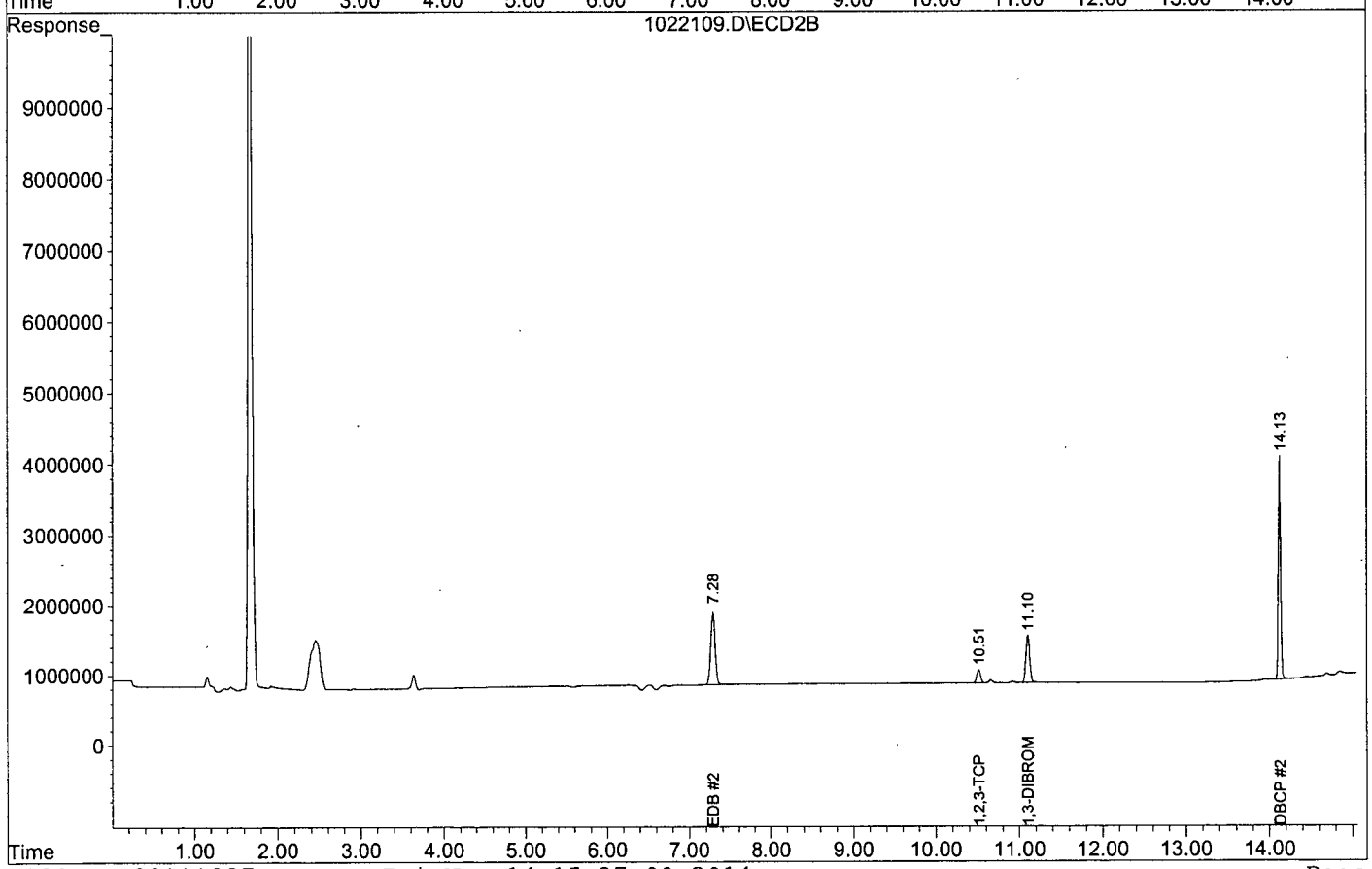
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022109.D
Acq On : 10-30-14 11:35:01
Sample : 8011-4 10/27/14 2/32.52G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 9
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022110.D\ECD1A.CH Vial: 10
Signal #2 : G:\HERBIE\DATA\141022\1022110.D\ECD2B.CH
Acq On : 10-30-14 11:55:17 Operator: MA
Sample : 8011-5 10/27/14 2/33.63G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

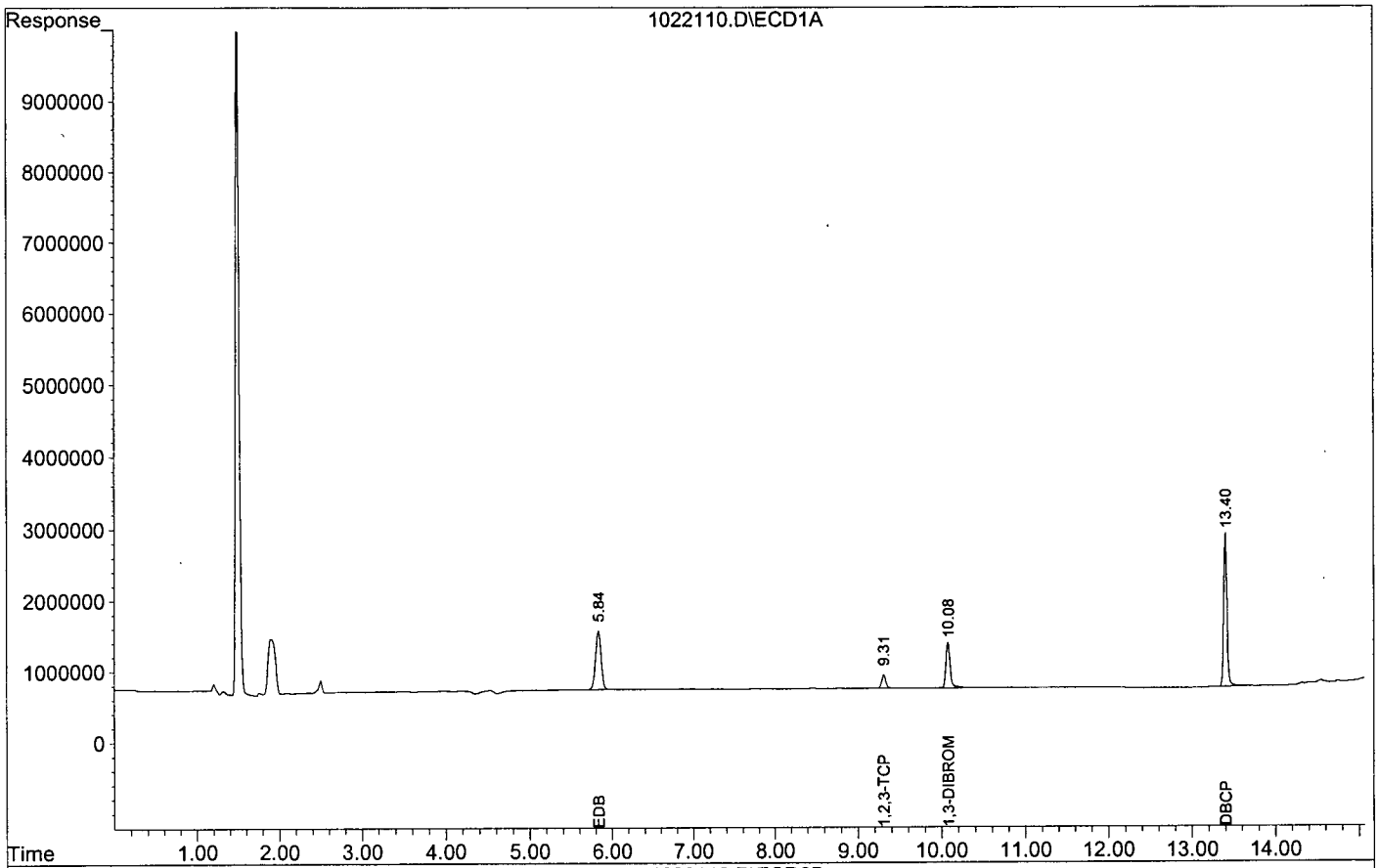
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 637875 | 888851 | 0.846 | 0.889 |
| Spiked Amount 0.350 | | | Recovery | = | 241.71% | 254.00% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 827908 | 1322015 | 0.829 | 0.870 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 187282 | 247937 | 0.991 | 1.016 |
| 4) TM DBCP | 13.40 | 14.13 | 2155730 | 4209824 | 0.868 | 0.929 |
| Target Compounds | | | | | | |

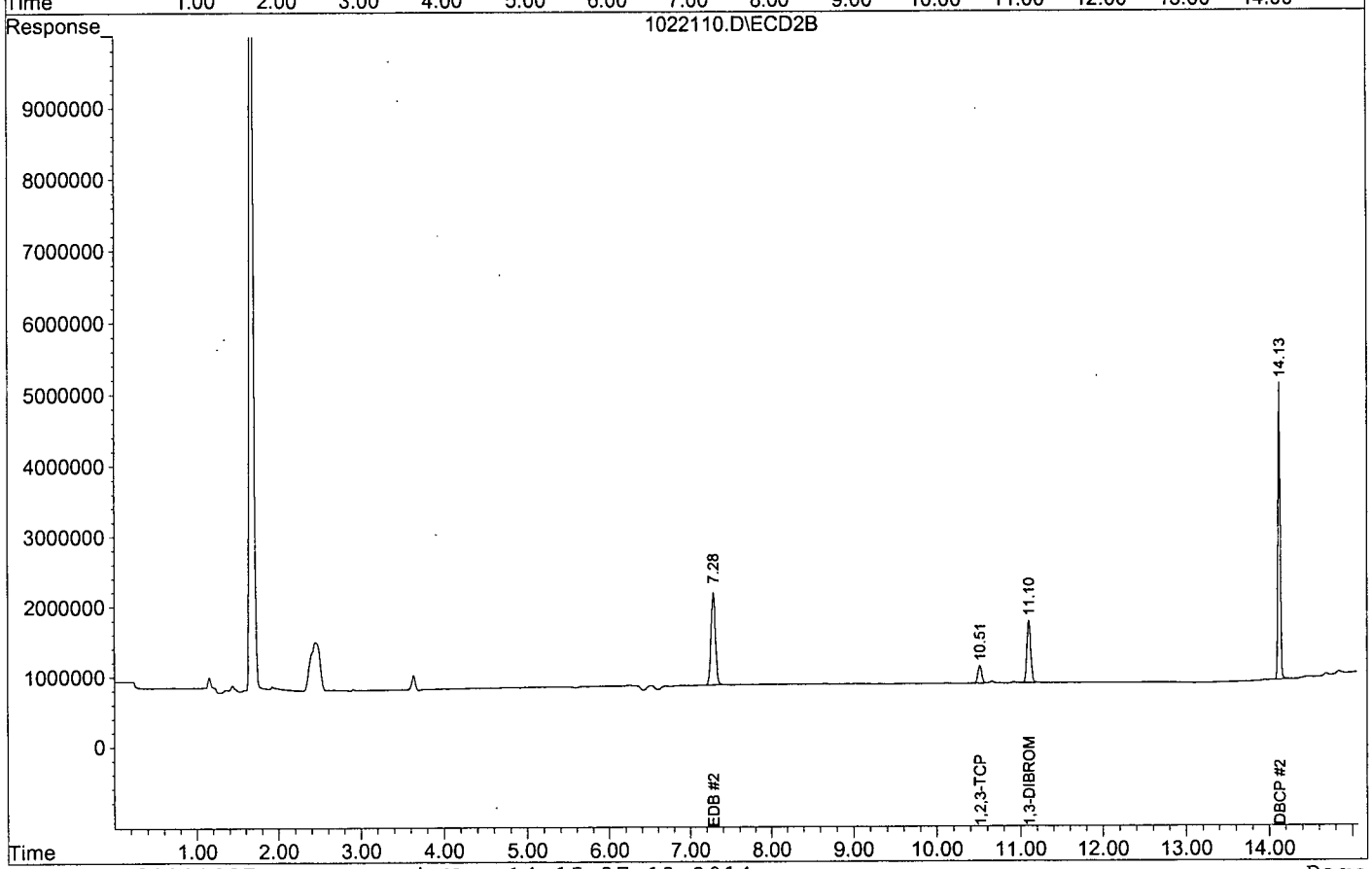
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022110.D
Acq On : 10-30-14 11:55:17
Sample : 8011-5 10/27/14 2/33.63G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 10
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022111.D\ECD1A.CH Vial: 11
Signal #2 : G:\HERBIE\DATA\141022\1022111.D\ECD2B.CH
Acq On : 10-30-14 12:15:39 Operator: MA
Sample : 8011-6 10/27/14 2/31.65G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

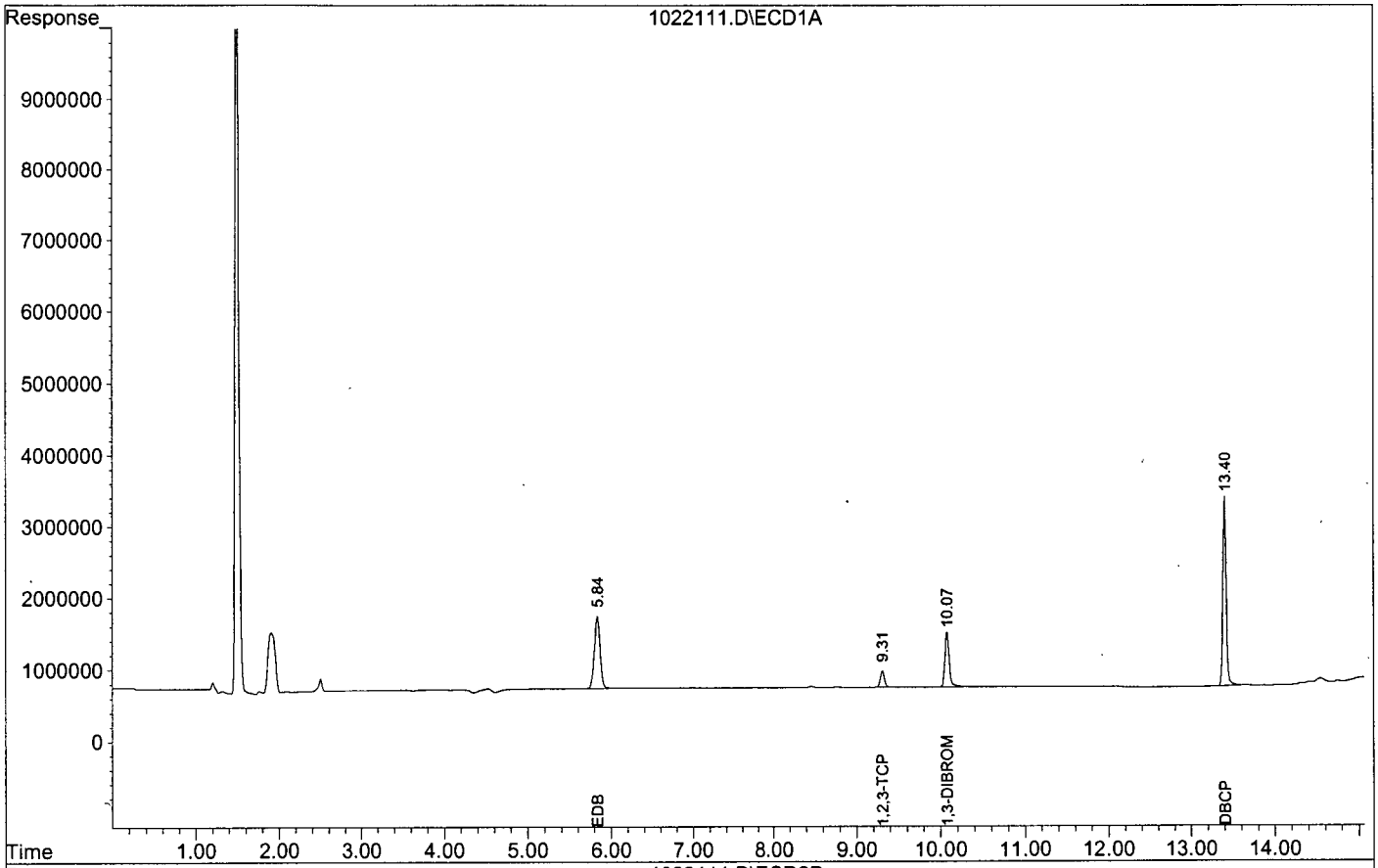
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.10 | 763585 | 1065858 | 1.013 | 1.066 |
| Spiked Amount 0.350 | | | Recovery | = | 289.43% | 304.57% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 999718 | 1599638 | 1.001 | 1.053 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 224005 | 298032 | 1.185 | 1.222 |
| 4) TM DBCP | 13.40 | 14.13 | 2646091 | 5238891 | 1.065 | 1.156 |
| Target Compounds | | | | | | |

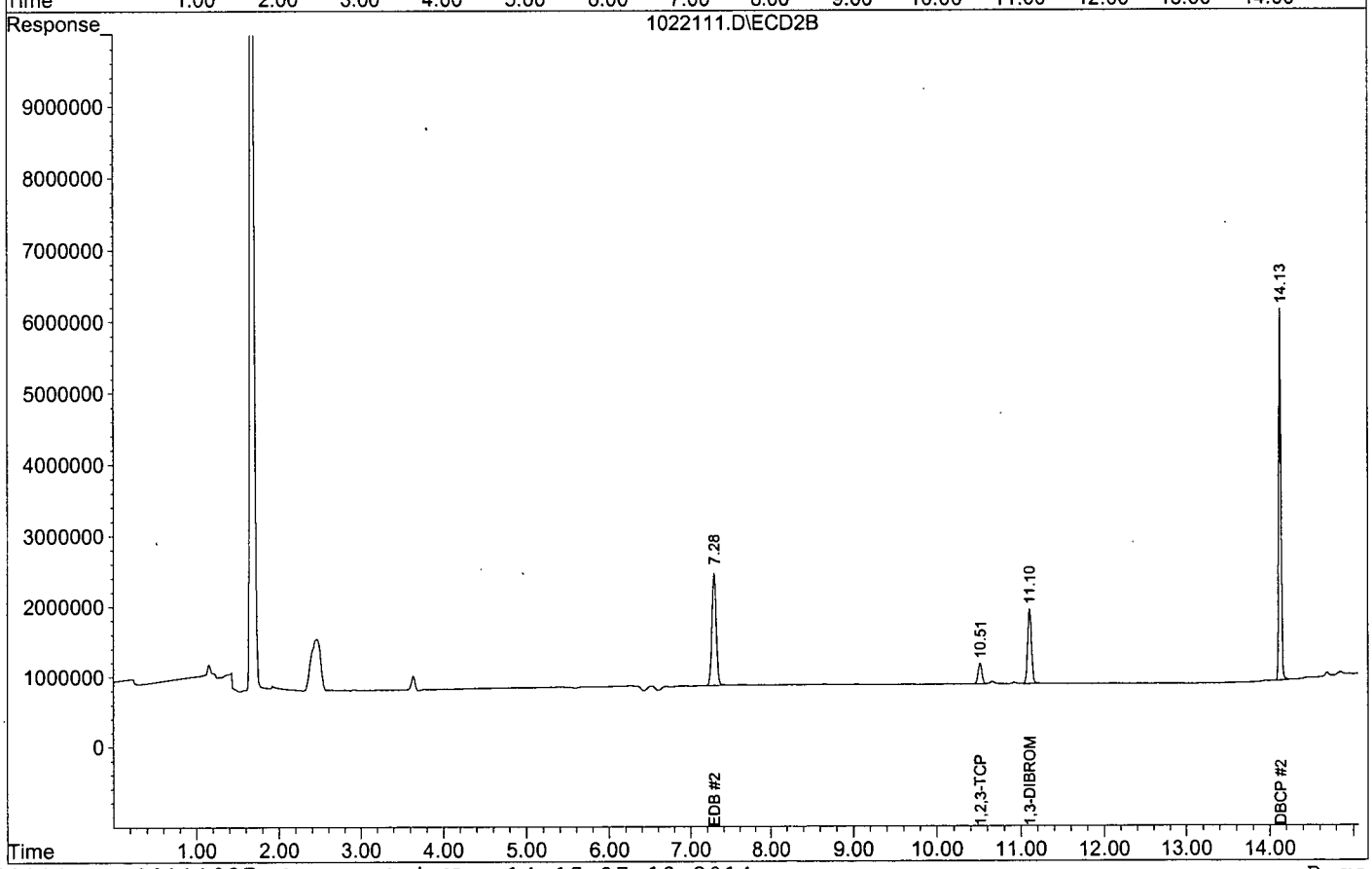
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022111.D
Acq On : 10-30-14 12:15:39
Sample : 8011-6 10/27/14 2/31.65G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 11
Operator: MA
Inst : Herbie
Multiplr: 1.00



DBCP/EDB/1,2,3-TCP Analysis by
8011 1027

Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Soil

SDG No: 74672
Date Analyzed: 10/30/14
Instrument: Herbie
Initial Cal. Date: 10/30/14
Data File: 1022114.D

| | | Compound | MEAN | CCRF | %D | | %Drift | |
|---|---|---|---|---|---|---|---|---|
| 1 | TM | EDB | 499174 | 505257 | 1.2 | TM | | |
| 2 | TM | 1,2,3-TCP | 94489 | 112004 | 19 | TM | | |
| | TM | DBCP | 1242250 | 1297130 | 4.4 | TM | | |
| 1 | signal #2 | | | | | | | |
| 2 | TM | EDB | 759485 | 777221 | 2.3 | TM | | |
| 3 | TM | 1,2,3-TCP | 121956 | 151336 | 24 | TM | | *NT |
| 4 | TM | DBCP | 2265050 | 2423580 | 7.0 | TM | | |
| 5 | | | | | | | | |
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| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | | | |
| 36 | | | | | | | | |
| 37 | | | | | | | | |
| | | Average | | | 11.6 | | | |

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022114.D\ECD1A.CH Vial: 14
Signal #2 : G:\HERBIE\DATA\141022\1022114.D\ECD2B.CH
Acq On : 10-30-14 13:16:33 Operator: MA
Sample : 141027A LCS-2 2/32.96G Inst : Herbie
Misc : soil Multiplr: 1.06
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

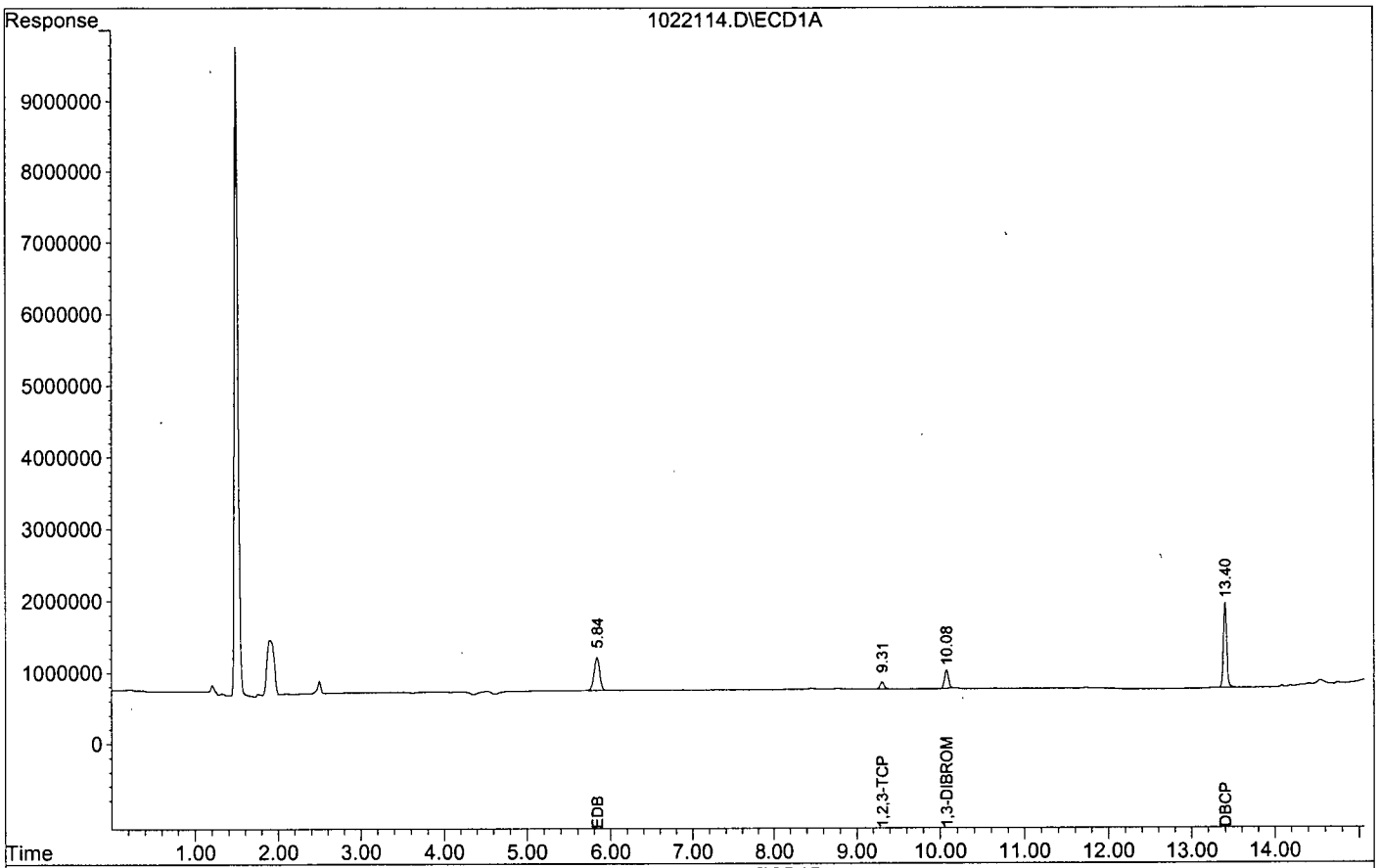
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 258654 | 346347 | 0.364 | 0.368 |
| Spiked Amount 0.372 | | | Recovery | = | 97.94% | 99.01% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 461805 | 710380 | 0.491 | 0.497 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 102372 | 138321 | 0.575 | 0.602 |
| 4) TM DBCP | 13.40 | 14.13 | 1185573 | 2215148 | 0.507 | 0.519 |
| Target Compounds | | | | | | |

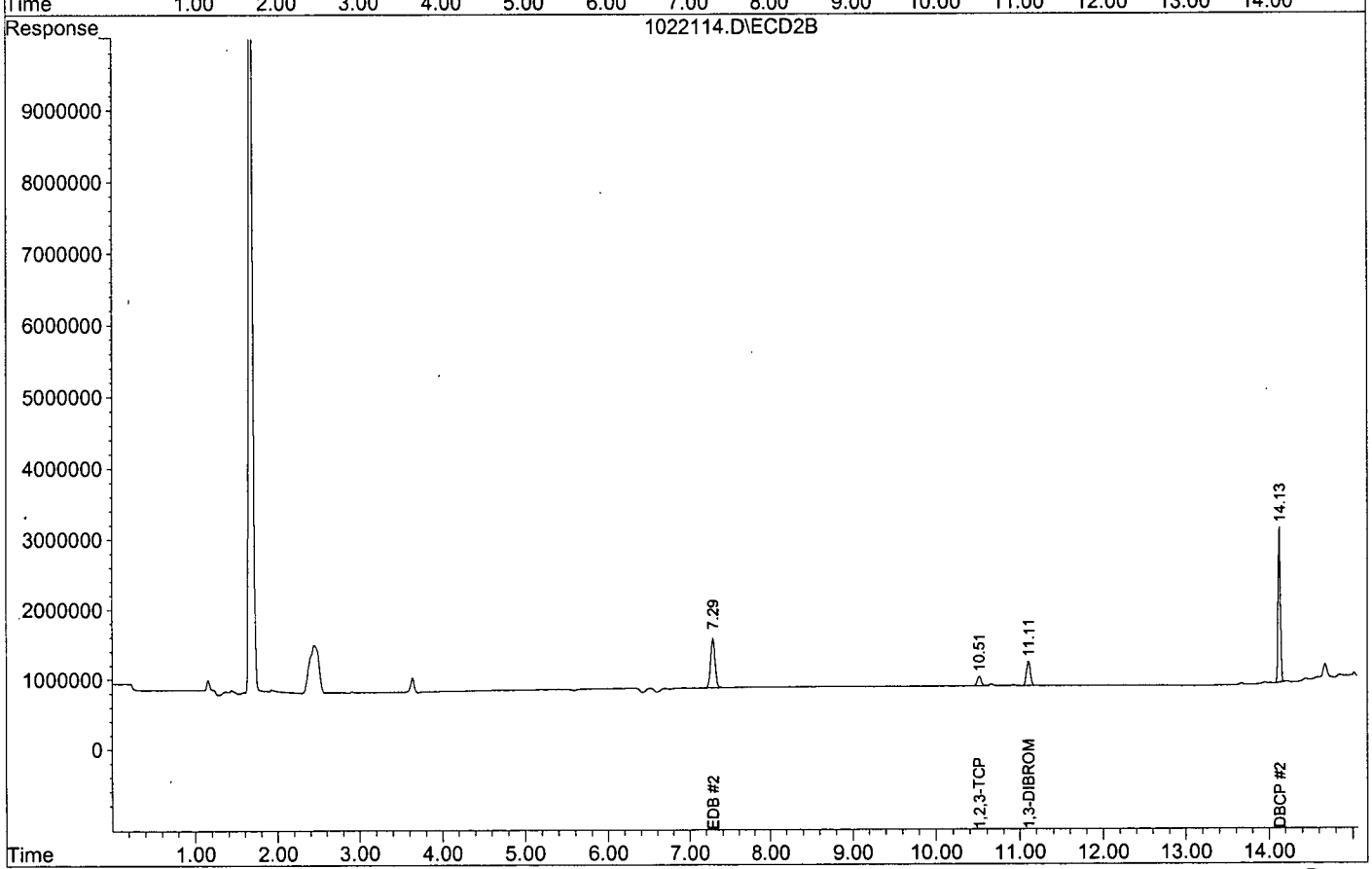
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022114.D
Acq On : 10-30-14 13:16:33
Sample : 141027A LCS-2 2/32.96G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 14
Operator: MA
Inst : Herbie
Multiplr: 1.06



DBCP/EDB/1,2,3-TCP Analysis by
8011 1027

Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 74672
Date Analyzed: 10/30/14
Instrument: Herbie
Initial Cal. Date: 10/30/14
Data File: 1022124.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | TM | EDB | 499174 | 479218 | 4.0 | TM | |
| 2 | TM | 1,2,3-TCP | 94489 | 104880 | 11 | TM | |
| 3 | S | 1,3-DIBROMOPROPANE(S) | 376914 | 381358 | 1.2 | S | |
| 4 | TM | DBCP | 1242250 | 1220540 | 1.7 | TM | |
| 5 | signal #2 | | | | | | |
| 6 | TM | EDB | 759485 | 734601 | 3.3 | TM | |
| 7 | TM | 1,2,3-TCP | 121956 | 142524 | 17 | TM | |
| 8 | S | 1,3-DIBROMOPROPANE(S) | 499799 | 499646 | 0.03 | S | |
| 9 | TM | DBCP | 2265050 | 2257100 | 0.35 | TM | |
| 10 | | | | | | | |
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| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | #REF! | | |

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022124.D\ECD1A.CH Vial: 24
Signal #2 : G:\HERBIE\DATA\141022\1022124.D\ECD2B.CH
Acq On : 10-30-14 16:40:41 Operator: MA
Sample : 8011-3 10/27/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

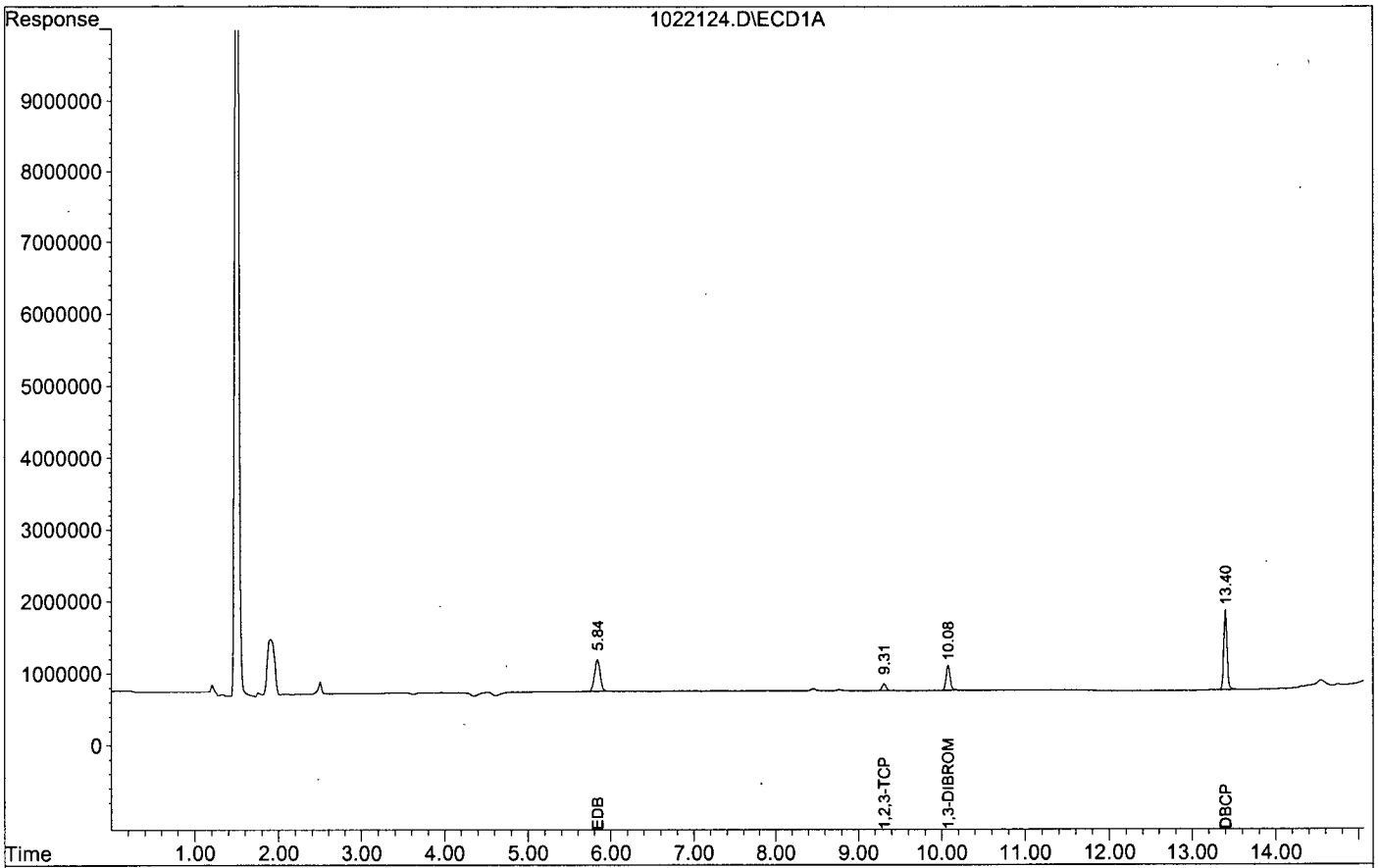
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 348561 | 456676 | 0.462 | 0.457 |
| Spiked Amount 0.350 | | | Recovery | = | 132.00% | 130.57% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 438005 | 671425 | 0.439 | 0.442 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 95860 | 130267 | 0.507 | 0.534 |
| 4) TM DBCP | 13.40 | 14.13 | 1115571 | 2062985 | 0.449 | 0.455 |
| Target Compounds | | | | | | |

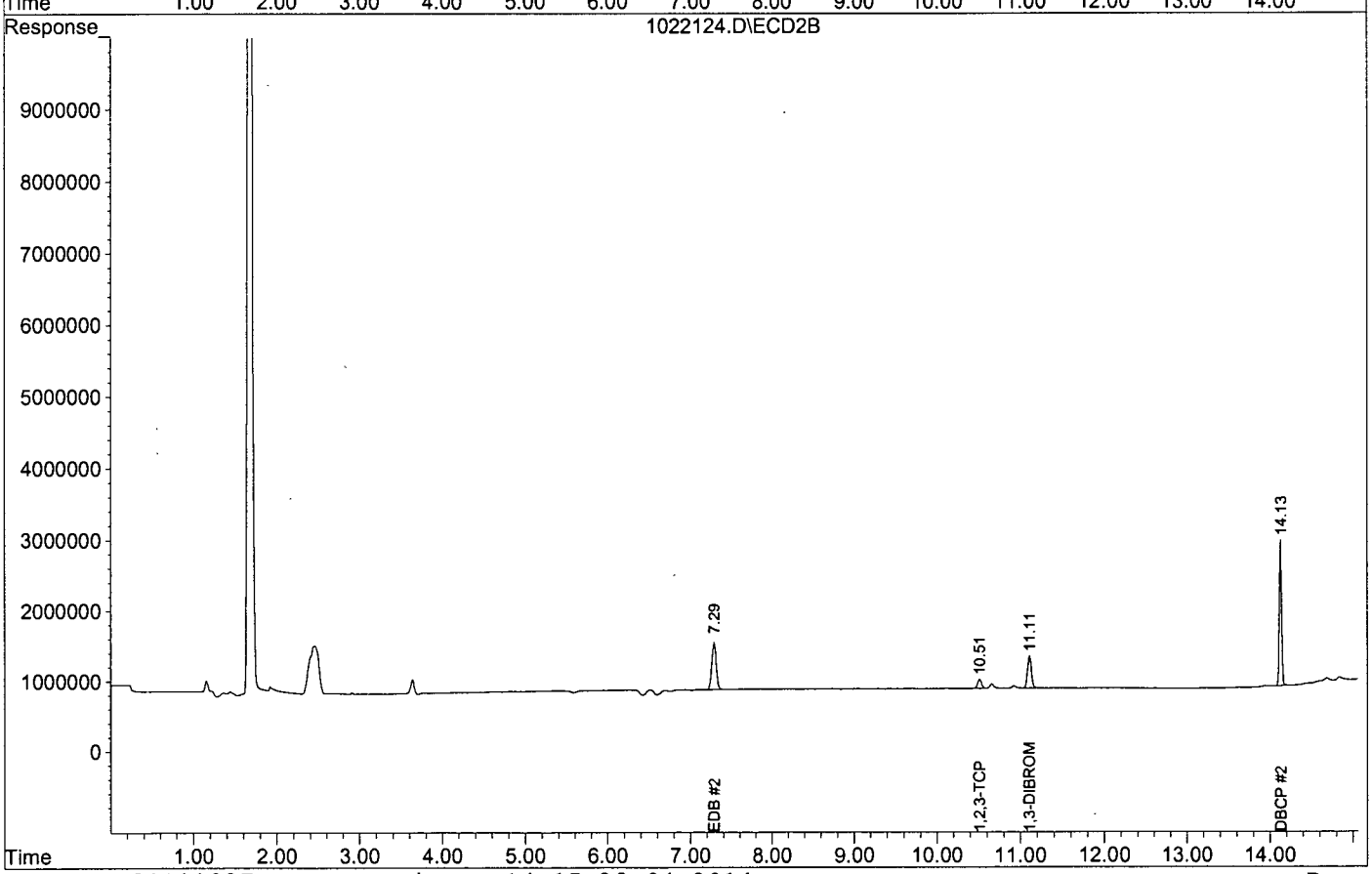
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022124.D
Acq On : 10-30-14 16:40:41
Sample : 8011-3 10/27/14
Misc :
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 24
Operator: MA
Inst : Herbie
Multiplr: 1.00



# 8011
# for
# DBCP & EDB Fumigants
# Raw Data

APPL, INC.

# Method Blank
## EPA 8011

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141027W-05593 - 191515**
Batch ID: #8011-141027A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | SURROGATE: 1,3-DIBROMOPRO | 99.0 | 70-132 | | | % | 10/27/14 | 10/30/14 |

Quant Method: 80111027.M
Run #: 1022112
Instrument: Herbie
Sequence: 141022
Initials: MA

*GC SC-Blank-REG MDLs*
*Printed: 11/14/14 2:57:13 PM*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022112.D\ECD1A.CH Vial: 12
Signal #2 : G:\HERBIE\DATA\141022\1022112.D\ECD2B.CH
Acq On : 10-30-14 12:35:52 Operator: MA
Sample : 141027A BLK 2/32.34G Inst : Herbie
Misc : soil Multiplr: 1.08
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

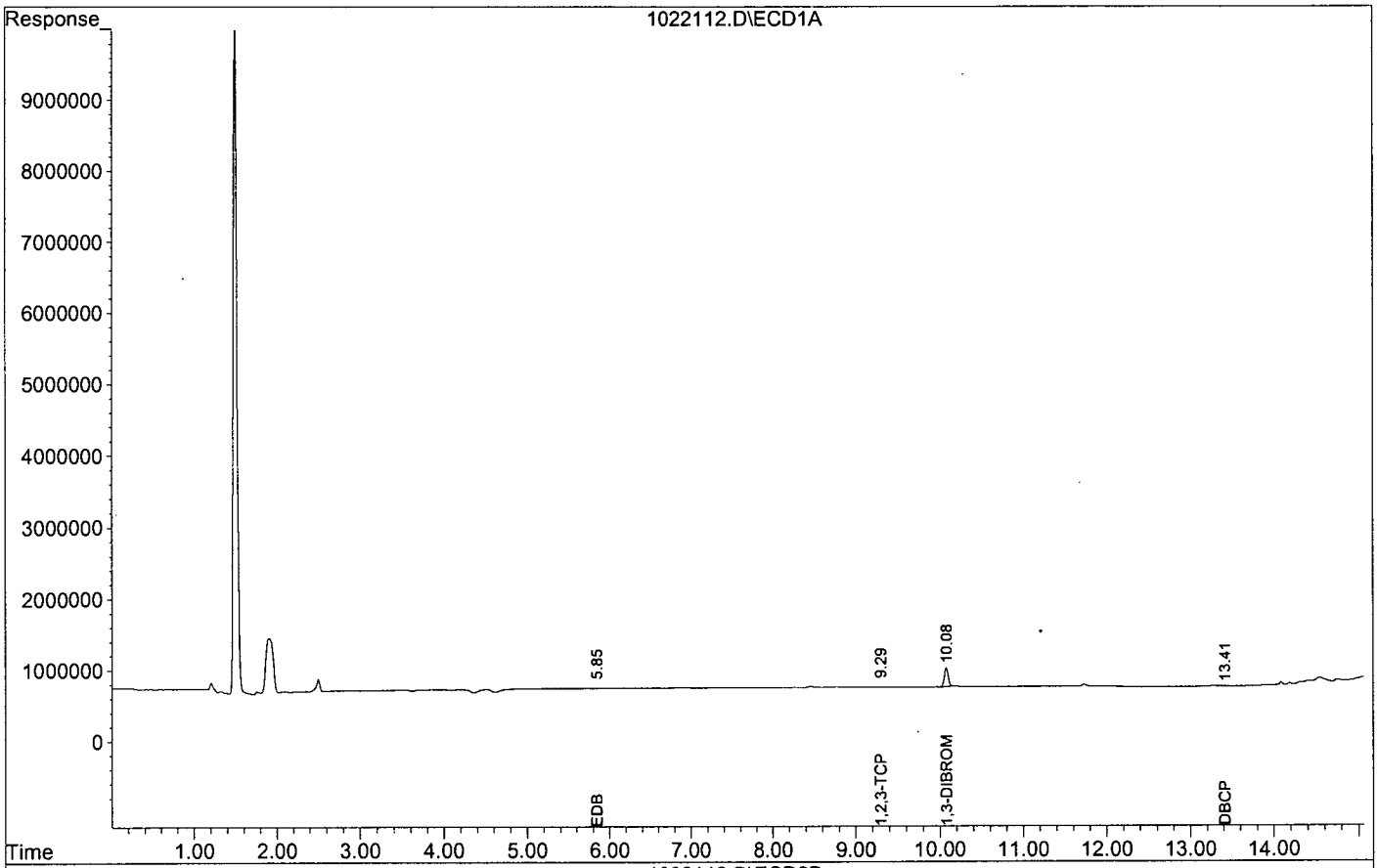
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 261484 | 351218 | 0.375 | 0.380 |
| Spiked Amount 0.379 | | | Recovery | = | 99.00% | 100.32% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.85 | 7.29 | 1201 | 1019 | 0.001 | 0.001 # |
| 2) TM 1,2,3-TCP | 9.29 | 10.52 | 772 | 1400 | 0.004 | 0.006 # |
| 4) TM DBCP | 13.41 | 0.00 | 1690 | 0 | 0.001 | N.D. # |
| Target Compounds | | | | | | |

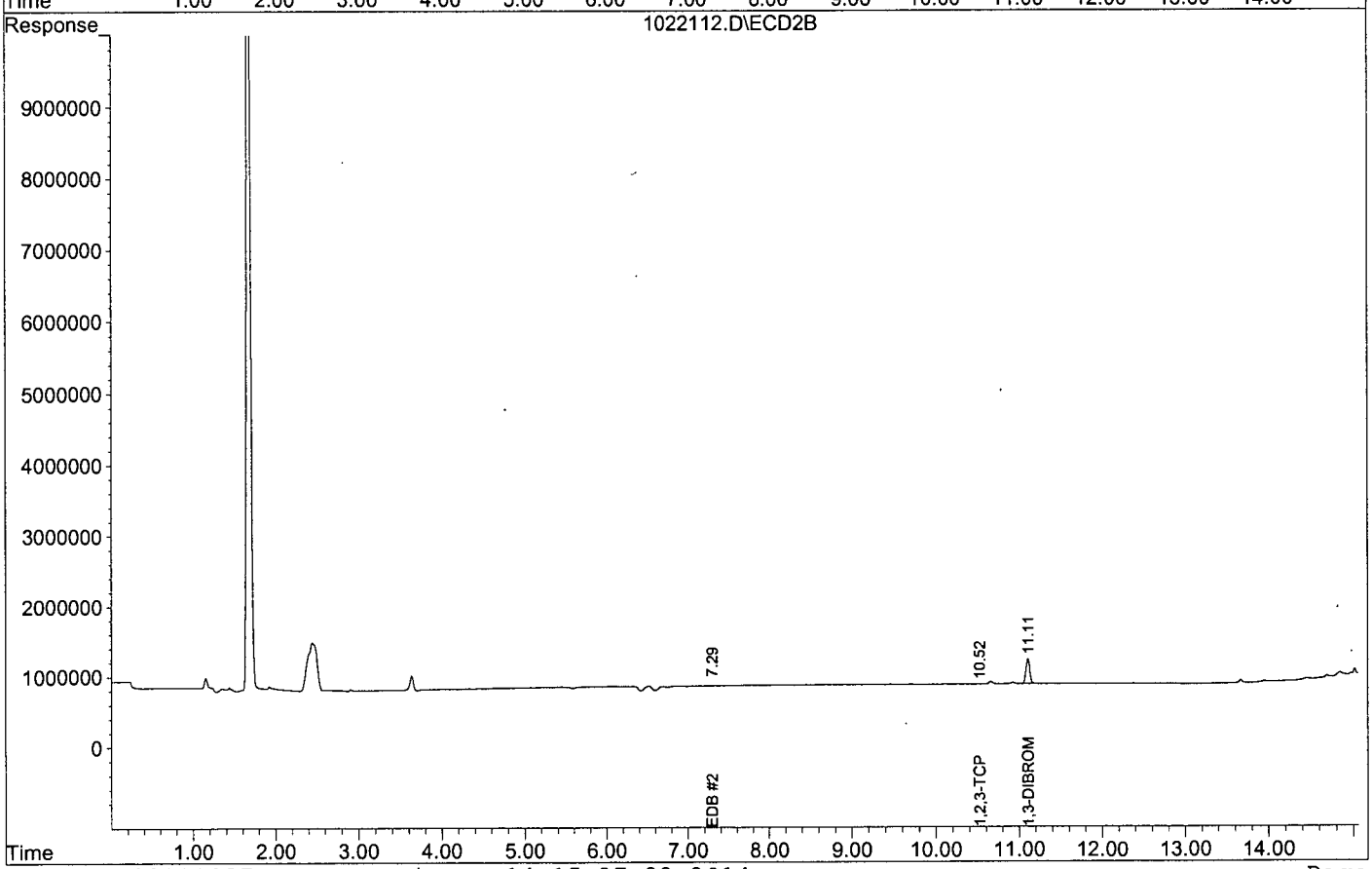
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022112.D
Acq On : 10-30-14 12:35:52
Sample : 141027A BLK 2/32.34G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 12
Operator: MA
Inst : Herbie
Multiplr: 1.08



# Laboratory Control Spike Recovery
## EPA 8011

APPL ID: **141027W-05593 LCS - 191515**
Batch ID: #8011-141027A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| DBCP | 0.482 | 0.507 | 105 | 60-140 |
| EDB | 0.482 | 0.491 | 102 | 60-140 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | 0.364 | 104 | 70-132 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | 80111027.M |
| Extraction Date : | 10/27/14 |
| Analysis Date : | 10/30/14 |
| Instrument : | Herbie |
| Run : | 1022114 |
| Initials : | MA |

*Printed: 11/14/14 2:57:14 PM*
*APPL Standard LCS*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022114.D\ECD1A.CH Vial: 14
Signal #2 : G:\HERBIE\DATA\141022\1022114.D\ECD2B.CH
Acq On : 10-30-14 13:16:33 Operator: MA
Sample : 141027A LCS-2 2/32.96G Inst : Herbie
Misc : soil Multiplr: 1.06
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 258654 | 346347 | 0.364 | 0.368 |
| Spiked Amount 0.372 | | | Recovery | = | 97.94% | 99.01% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 461805 | 710380 | 0.491 | 0.497 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 102372 | 138321 | 0.575 | 0.602 |
| 4) TM DBCP | 13.40 | 14.13 | 1185573 | 2215148 | 0.507 | 0.519 |

Target Compounds

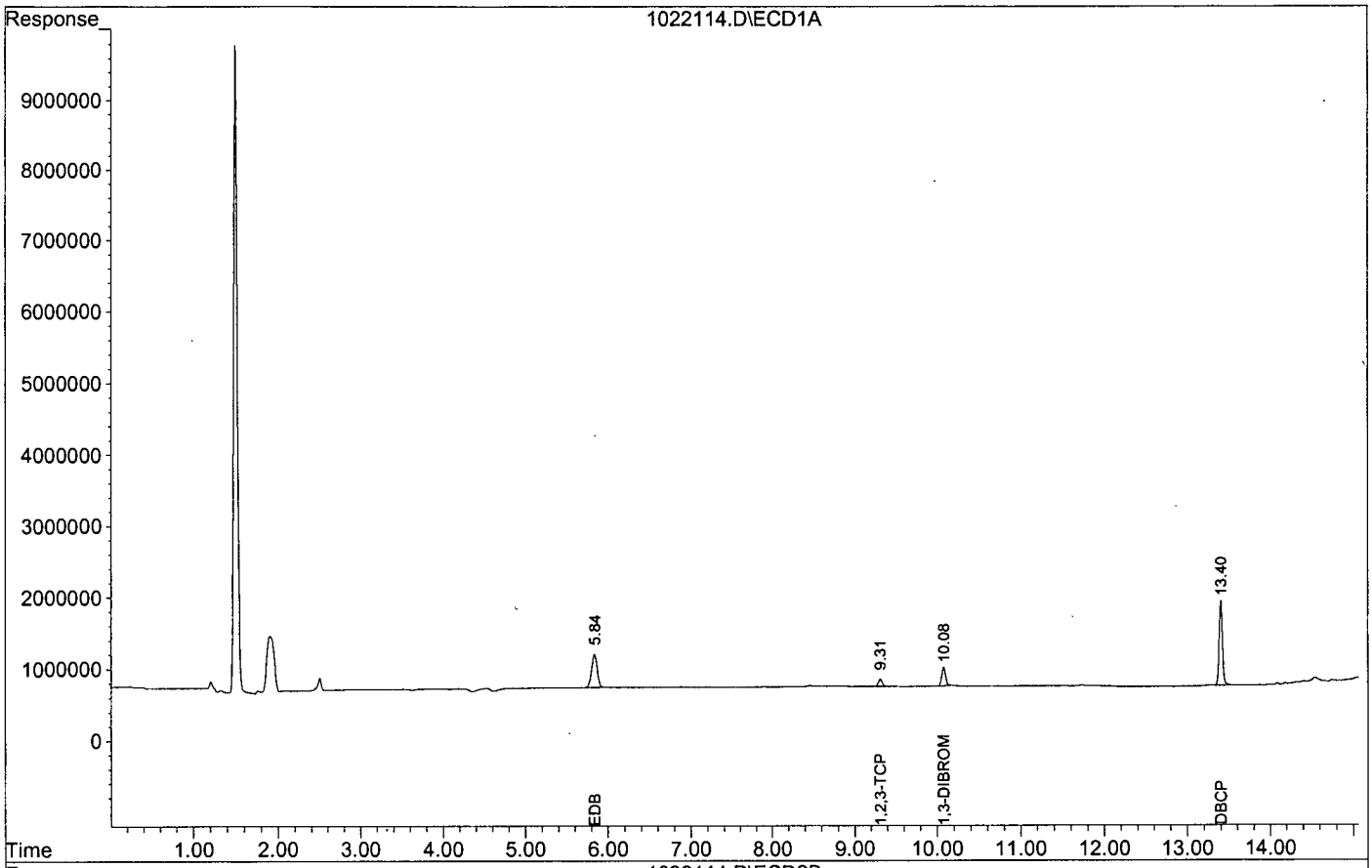
Algorithm = $\frac{461805 \times 1.06}{2 \times 499174}$ = 0.491 MA 11/14/14

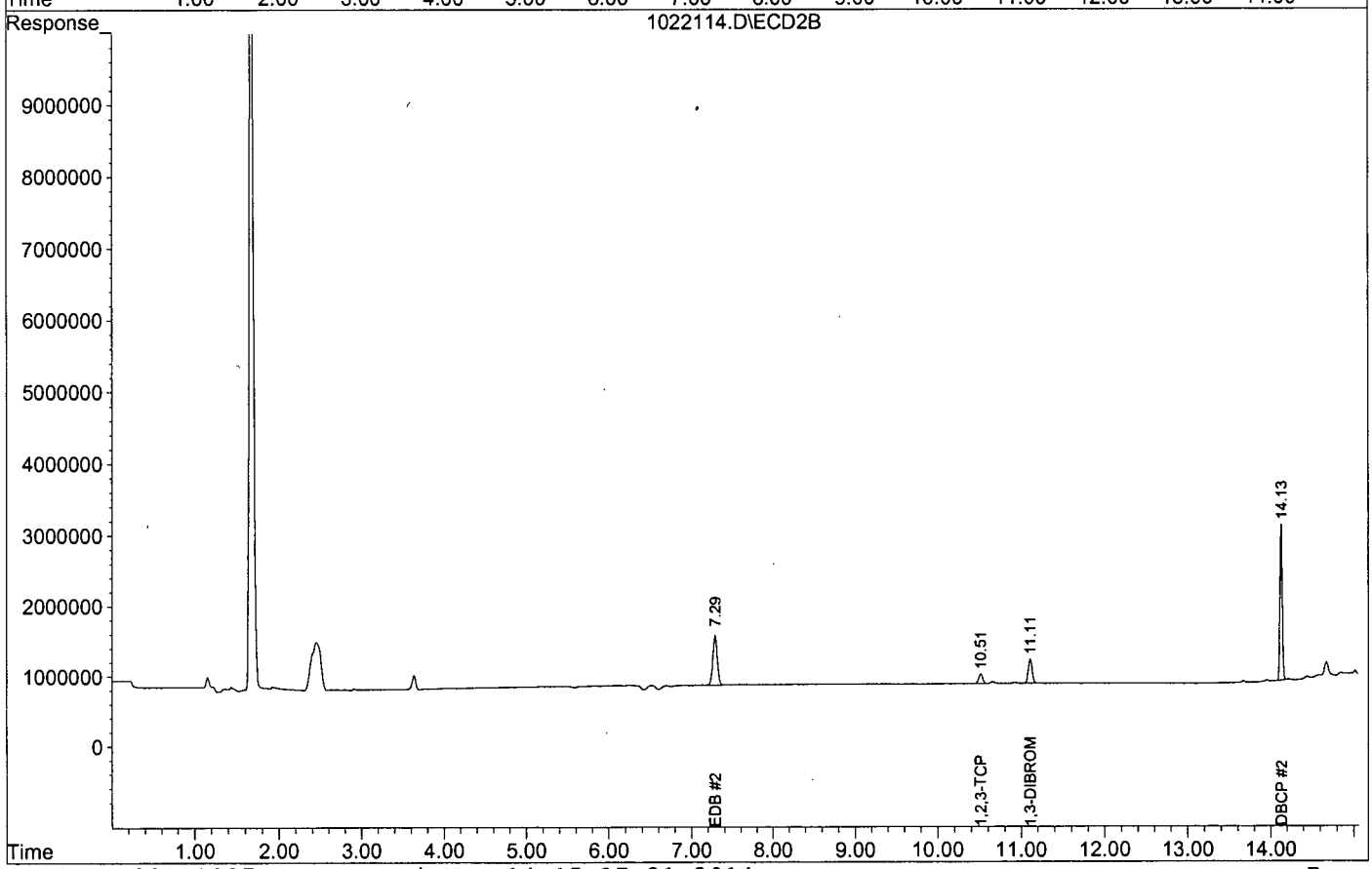
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022114.D
Acq On : 10-30-14 13:16:33
Sample : 141027A LCS-2 2/32.96G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 14
Operator: MA
Inst : Herbie
Multiplr: 1.06



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022113.D\ECD1A.CH Vial: 13
Signal #2 : G:\HERBIE\DATA\141022\1022113.D\ECD2B.CH
Acq On : 10-30-14 12:56:09 Operator: MA
Sample : 141027A LCS-1 2/32.27G Inst : Herbie
Misc : soil Multiplr: 1.08
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

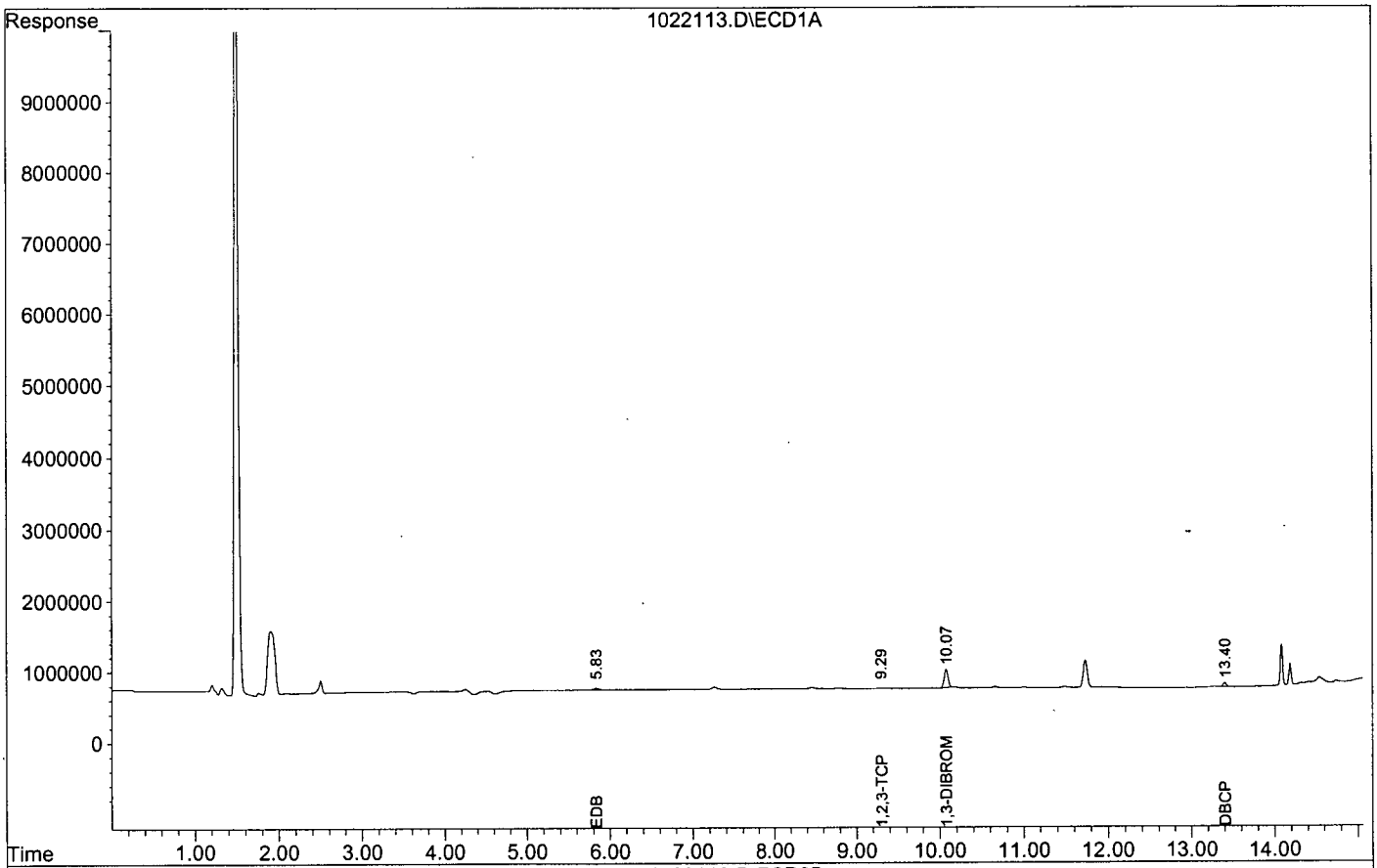
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.11 | 255831 | 339793 | 0.368 | 0.369 |
| Spiked Amount 0.380 | | | Recovery | = | 96.94% | 97.21% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.83 | 7.29 | 23228 | 32982 | 0.025 | 0.024 |
| 2) TM 1,2,3-TCP | 9.29 | 10.51 | 470 | 2585 | 0.003 | 0.011 # |
| 4) TM DBCP | 13.40 | 14.13 | 59566 | 93741 | 0.026 | 0.022 |
| Target Compounds | | | | | | |

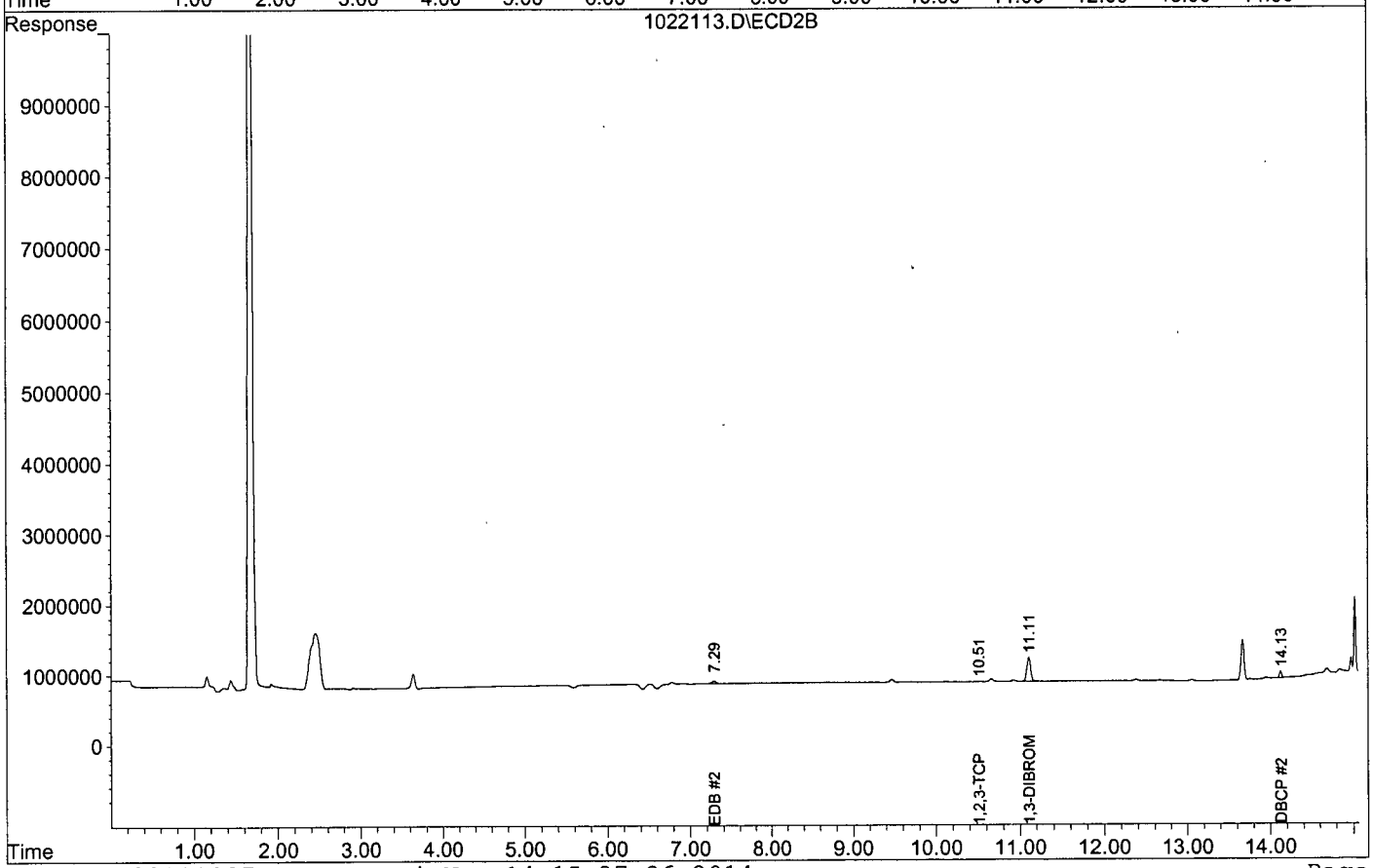
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022113.D
Acq On : 10-30-14 12:56:09
Sample : 141027A LCS-1 2/32.27G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 13
Operator: MA
Inst : Herbie
Multiplr: 1.08



| STANDARD | INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOLVENT LOT # | DATE / INITIALS |
|---|---|---|---|---|---|---|---|
| | | | | | | 081 | |

LOG BOOK #41

DIESEL SPIKE

Diesel Fuel #2 Composite (Second Source), 50,000 mg/L, 2 x 5 ml
011598-01-8S
Lot # 207749 | Storage ≤ -10 Degrees C | Expiry 4/27/16
Solv: Methylene Chloride
For R&D only; not for human consumption. Made in the USA

Diesel Fuel #2 Composite (SS)
Lot #: 207749 - 32376
Rec: 4/25/13 MFR exp. 4/27/16

Open 7/28/14 — 7/28/14 MA
Ex 7/28/15 — Ex 7/28/15

| | 504/8011 SURROGATE | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | CA 7/28/14 |
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent | |
| 1,3 DBP | 100 | 1,3 DBP STOCK prep.02/17/14 exp. 02/1715 | 35ul | 10mL | 0.35ug/mL | Methanol 070913A | CA 7/28/14 8/28/14 |

| | 504/8011 HIGH M STD | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | CA 7/28/14 |
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent | |
| EDB TCP DBCP 1,3 DBP | 20ug/mL | 504/DOHS STOCK prep. 07/28/14 exp 07/28/15 | 500uL | 25mL | 0.4ug/mL | Methanol 070913A | CA 7/28/14 8/28/14 |
| | 100ug/mL | 1,3 DBP STOCK prep. 02/17/14 exp. 02/17/15 | 100uL | | | | |

| | 504/8011 LOW M STD | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | CA 7/28/14 |
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent | |
| EDB TCP DBCP 1,3 DBP | 0.4ug/mL | 504/8011 HIGH M STD prep.07/28/14 exp: 08/28/14 | 750uL | 10mL | 0.03ug/mL | Methanol 070913A | CA 7/28/14 8/28/14 |

| | 504/8011 HIGH SPIKE | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | CA 7/28/14 |
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent | |
| EDB TCP DBCP | 200ug/mL | Absolute CAT 30096 Lot 080111-30272 open 1/29/14 exp 1/29/15 | 30uL | 25mL | 0.24ug/mL | Methanol 070913A | CA 7/28/14 8/28/14 |

| | 504/8011 LOW SPIKE | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | CA 7/28/14 |
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent | |
| EDB TCP DBCP | 0.24ug/mL | 504/8011 HIGH SPIKE prep. 07/28/14 Exp: 08/28/14 | 800uL | 10mL | 0.0192ug/mL | Methanol 070913A | CA 7/28/14 8/28/14 |

| PAC ECO CURVE | | | | | | | | | | | | | | CA 7/29/14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1a | 1b | 1 | 2 | 3 | 4 | 5 | 6 | |
| | ID# | [µg/mL] | LOT # | DATE | EXP. DATE | µL | µL | µL | µL | µL | µL | µL | µL | |
| | PAC ECO CAL STD | 6 | | 06/23/14 | 11/09/14 | 2 | 5 | 10 | 50 | 20 | 100 | 70 | 1000 | CA 7/29/14 |
| | | | | | | 998 | 995 | 990 | 950 | 80 | 100 | 30 | N/A | 11/9/14 |
| | Hexane | | 080613A | | Final VOL. | 1000 | 1000 | 1000 | 1000 | 100 | 200 | 100 | N/A | |

THC SURROGATE — open 7/29/14 — Kg
CAT: 110316-05 — Exp. 7/29/15 — 7/29/14
lot: 216091-33700 — EXP 7/29/15

_MWE012

# Organic Extraction Worksheet

| Method | EPA Method 8011 DBCP/EDB | Extraction Set | 141027A | Extraction Method | MWE012 | Units | mL |
|---|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Spiked ID 1 | 504.1 Low Spike 7-28-14 | | Surrogate ID 1 | 504.1 Surrogate 7-28-14 | |
| Spiked ID 2 | 504.1 High Spike 7-28-14 | | Surrogate ID 2 | | |
| Spiked ID 3 | 504.1 Low Method Standard 8-6-14 | | Surrogate ID 3 | | |
| Spiked ID 4 | 504.1 High Method Standard 7-28-14 | | Surrogate ID 4 | | |
| Spiked ID 5 | | | Surrogate ID 5 | | |
| Spiked ID 6 | | | Sufficient Vol for Matrix QC: | YES | |
| Spiked ID 7 | | | Ext. Start Time: | 10/27/14 16:20 | |
| Spiked ID 8 | | | Ext. End Time: | 10/28/14 16:00 | |
| | | | **GC Requires Extract By:** | **11/04/14 0:00** | |

| | | | | |
|---|---|---|---|---|
| pH1 | | | Water Bath Temp Criteria | |
| pH2 | | | | |
| pH3 | | | | |

**Spiked By:** IC **Date** 10/27/14 **Witnessed By:** DL **Date** 10/27/14

| | Sample | Sample Container | Spike Amount | Spike ID | Surrogate Amount | Surrogate ID | Extract Amount | Final Volume | pH | Extract Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 141027A Blk | | | | 0.035 | 1 equip | 32.34g | 2 | 7 | 10/27/14 16:20 | |
| 2 | 141027A LCS-1 | | 0.035 | 1 | 0.035 | 1 equip | 32.27g | 2 | 7 | 10/27/14 16:20 | |
| 3 | 141027A LCS-2 | | 0.070 | 2 | 0.035 | 1 equip | 32.96g | 2 | 7 | 10/27/14 16:20 | |
| 4 | AZ05388 | AZ05388W07 | | | 0.035 | 1 equip | 34.03g | 2 | 7 | 10/27/14 16:20 | 74672 RUSH 2 WEEKS |
| 5 | AZ05389 | AZ05389W08 | | | 0.035 | 1 equip | 34.63g | 2 | 7 | 10/27/14 16:20 | 74672 RUSH 2 WEEKS |
| 6 | AZ05518 | AZ05518W01 | 0.040 | 3 | 0.035 | 1 equip | 31.09g | 2 | 7 | 10/27/14 16:20 | 74692 LOQ |
| 7 | AZ05593 MS-1 | AZ05593W02 | 0.035 | 1 | 0.035 | 1 equip | 34.53g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 8 | AZ05593 MSD-1 | AZ05593W12 | 0.035 | 1 | 0.035 | 1 equip | 34.37g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 9 | AZ05593 MS-2 | AZ05593W13 | 0.070 | 2 | 0.035 | 1 equip | 34.28g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 10 | AZ05593 MSD-2 | AZ05593W07 | 0.070 | 2 | 0.035 | 1 equip | 34.51g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 11 | AZ05593 | AZ05593W10 | | | 0.035 | 1 equip | 34.54g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 12 | LOD | | 0.020 | 3 | NA | NA equip | 33.98g | 2 | 7 | 10/27/14 16:20 | |
| 13 | M STD 1 | | 0.020 | 3 | NA | NA equip | 33.04g | 2 | 7 | 10/27/14 16:20 | |
| 14 | M STD 2 | | 0.020 | 4 | NA | NA equip | 33.31g | 2 | 7 | 10/27/14 16:20 | |
| 15 | M STD 3 | | 0.040 | 4 | NA | NA equip | 32.25g | 2 | 7 | 10/27/14 16:20 | |
| 16 | M STD 4 | | 0.060 | 4 | NA | NA equip | 32.52g | 2 | 7 | 10/27/14 16:20 | |

| Solvent and Lot# | |
|---|---|
| GC2 Hexane | DH772 |
| NaCL | WJ11D |
| Sod. Thiosulfate | H15584 |

| Extraction COC Transfer | |
|---|---|
| Extraction lab employee Initials | KY |
| GC analyst's initials | LH |
| Date | 10/29/14 |
| Time | 1:01 |
| Refrigerator | Hobart |

| | Technician's Initials |
|---|---|
| Scanned By | IC |
| Sample Preparation | IC |
| Extraction | IC |
| Concentration | ---------- |

| | |
|---|---|
| Modified | 10/28/14 5:36:48 PM |

**Reviewed By:** **Date**

# Organic Extraction Worksheet

| Method | EPA Method 8011 DBCP/EDB | Extraction Set | 141027A | Extraction Method | MWE012 | Units | mL |
|---|---|---|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Spiked ID 1 | 504.1 Low Spike 7-28-14 | | Surrogate ID 1 | 504.1 Surrogate 7-28-14 |
| Spiked ID 2 | 504.1 High Spike 7-28-14 | | Surrogate ID 2 | |
| Spiked ID 3 | 504.1 Low Method Standard 8-6-14 | | Surrogate ID 3 | |
| Spiked ID 4 | 504.1 High Method Standard 7-28-14 | | Surrogate ID 4 | |
| Spiked ID 5 | | | Surrogate ID 5 | |
| Spiked ID 6 | | | Sufficient Vol for Matrix QC: | YES |
| Spiked ID 7 | | | Ext. Start Time: | 10/27/14 16:20 |
| Spiked ID 8 | | | Ext. End Time: | 10/28/14 16:00 |
| | | | **GC Requires Extract By:** | **11/04/14 0:00** |

| | | | |
|---|---|---|---|
| pH1 | | | Water Bath Temp Criteria |
| pH2 | | | |
| pH3 | | | |

**Spiked By:** IC **Date** 10/27/14 **Witnessed By:** DL **Date** 10/27/14

| | Sample | Sample Container | Spike Amount | Spike ID | Surrogate Amount | Surrogate ID | Extract Amount | Final Volume | pH | Extract Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | M STD 5 | | 0.080 | 4 | NA | NA | 33.63g | 2 | 7 | 10/27/14 16:20 | |
| | | | | | | equip | | | | | |
| 18 | M STD 6 | | 0.100 | 4 | NA | NA | 31.65g | 2 | 7 | 10/27/14 16:20 | |
| | | | | | | equip | | | | | |

LH 10/28/14

| Solvent and Lot# | |
|---|---|
| GC2 Hexane | DH772 |
| NaCL | WJ11D |
| Sod. Thiosulfate | H15584 |

| Extraction COC Transfer | |
|---|---|
| Extraction lab employee Initials | KY |
| GC analyst's initials | LH |
| Date | 10/29/14 |
| Time | 1:01 |
| Refrigerator | Hobart |

| | Technician's Initials |
|---|---|
| Scanned By | IC |
| Sample Preparation | IC |
| Extraction | IC |
| Concentration | ---------- |

| Modified | 10/28/14 5:36:48 PM |
|---|---|

**Reviewed By:** LH **Date** 10/28/14

# Injection Log

Directory: G:\HERBIE\DATA\141022\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 6 | 1022106.D | 1 | 8011-1 10/27/14 2/33.04G | soil | 10-30-14 10:34:12 |
| 2 | 7 | 1022107.D | 1 | 8011-2 10/27/14 2/33.31G | soil | 10-30-14 10:54:24 |
| 3 | 8 | 1022108.D | 1 | 8011-3 10/27/14 2/32.25G | soil | 10-30-14 11:14:47 |
| 4 | 9 | 1022109.D | 1 | 8011-4 10/27/14 2/32.52G | soil | 10-30-14 11:35:01 |
| 5 | 10 | 1022110.D | 1 | 8011-5 10/27/14 2/33.63G | soil | 10-30-14 11:55:17 |
| 6 | 11 | 1022111.D | 1 | 8011-6 10/27/14 2/31.65G | soil | 10-30-14 12:15:39 |
| 7 | 12 | 1022112.D | 1.08225 | 141027A BLK 2/32.34G | soil | 10-30-14 12:35:52 |
| 8 | 13 | 1022113.D | 1.0846 | 141027A LCS-1 2/32.27G | soil | 10-30-14 12:56:09 |
| 9 | 14 | 1022114.D | 1.06189 | 141027A LCS-2 2/32.96G | soil | 10-30-14 13:16:33 |
| 10 | 15 | 1022115.D | 1.0285 | AZ05388W07 2/34.03G | soil | 10-30-14 13:36:53 |
| 11 | 16 | 1022116.D | 1.01068 | AZ05389W08 2/34.63G | soil | 10-30-14 13:57:13 |
| 17 | 24 | 1022124.D | 1 | 8011-3 10/27/14 | | 10-30-14 16:40:41 |

# EPA METHOD 8260C
# Volatile Organic Compounds

APPL, INC.

# EPA METHOD 8260C
# Volatile Organic Compounds
# QC Summary

APPL, INC.

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DIBROMO-3-CHLOROPROPA | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,3-DICHLOROPROPENE (TOTA | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/14 | 10/26/14 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 10/29/14 4:48:01 PM*

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: 1,2-DICHLOROET | 104 | 70-120 | | | % | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: 4-BROMOFLUOR | 99.4 | 75-120 | | | % | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: DIBROMOFLUOR | 104 | 85-115 | | | % | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: TOLUENE-D8 (S) | 98.2 | 85-120 | | | % | 10/26/14 | 10/26/14 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 10/29/14 4:48:01 PM*

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 74672
Matrix: WATER

SDG No: 74672
Date Analyzed: 10/26/14
Instrument: Loki

| APPL ID. | Client Sample No. | SURROGATE: 1,2-DICHLOROETHANE-D4 (S) | | | SURROGATE: 4-BROMOFLUOROBENZENE (S) | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141026AL-LCS | Lab Control Spike | 70-120 | 87.7 | | 75-120 | 119 | |
| 141026AL-BLK | Blank | 70-120 | 104 | | 75-120 | 99.4 | |
| AZ05390 | TB102014 | 70-120 | 99.5 | | 75-120 | 102 | |
| AZ05389 | RHMW07-GW-01FD | 70-120 | 106 | | 75-120 | 102 | |
| AZ05388 | RHMW07-GW-01 | 70-120 | 104 | | 75-120 | 96.2 | |

Comments: Batch: #86CRE-141026AL

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 74672
Matrix: WATER

SDG No: 74672
Date Analyzed: 10/26/14
Instrument: Loki

| APPL ID. | Client Sample No. | SURROGATE: DIBROMOFLUOROMETHANE (S) | | | SURROGATE: TOLUENE-D8 (S) | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141026AL-LCS | Lab Control Spike | 85-115 | 88.0 | | 85-120 | 106 | |
| 141026AL-BLK | Blank | 85-115 | 104 | | 85-120 | 98.2 | |
| AZ05390 | TB102014 | 85-115 | 103 | | 85-120 | 102 | |
| AZ05389 | RHMW07-GW-01FD | 85-115 | 105 | | 85-120 | 100 | |
| AZ05388 | RHMW07-GW-01 | 85-115 | 102 | | 85-120 | 96.3 | |

Comments: Batch: #86CRE-141026AL

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | 9.15 | 91.5 | 80-130 |
| 1,1,1-TRICHLOROETHANE | 10.00 | 9.54 | 95.4 | 65-130 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | 10.9 | 109 | 65-130 |
| 1,1,2-TRICHLOROETHANE | 10.00 | 9.15 | 91.5 | 75-125 |
| 1,1-DICHLOROETHANE | 10.00 | 8.64 | 86.4 | 70-135 |
| 1,1-DICHLOROETHENE | 10.00 | 9.46 | 94.6 | 70-130 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | 9.50 | 95.0 | 75-125 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | 8.72 | 87.2 | 65-135 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | 10.6 | 106 | 50-130 |
| 1,2-DIBROMOETHANE | 10.00 | 9.54 | 95.4 | 80-120 |
| 1,2-DICHLOROBENZENE | 10.00 | 10.0 | 100 | 70-120 |
| 1,2-DICHLOROETHANE | 10.00 | 10.2 | 102 | 70-130 |
| 1,2-DICHLOROPROPANE | 10.00 | 9.39 | 93.9 | 75-125 |
| 1,3-DICHLOROBENZENE | 10.00 | 10.7 | 107 | 75-125 |
| 1,3-DICHLOROPROPENE (TOTAL) | 20.0 | 18.4 | 92.0 | 55-140 |
| 1,4-DICHLOROBENZENE | 10.00 | 10.4 | 104 | 75-125 |
| 2-BUTANONE | 10.00 | 9.58 | 95.8 | 30-150 |
| 4-METHYL-2-PENTANONE | 10.00 | 8.53 | 85.3 | 60-135 |
| ACETONE | 10.00 | 9.06 | 90.6 | 40-140 |
| BENZENE | 10.00 | 10.2 | 102 | 80-120 |
| BROMODICHLOROMETHANE | 10.00 | 9.43 | 94.3 | 75-120 |
| BROMOFORM | 10.00 | 8.95 | 89.5 | 70-130 |
| BROMOMETHANE | 10.00 | 11.0 | 110 | 30-145 |
| CARBON TETRACHLORIDE | 10.00 | 10.3 | 103 | 65-140 |
| CHLOROBENZENE | 10.00 | 9.77 | 97.7 | 80-120 |
| CHLOROETHANE | 10.00 | 11.4 | 114 | 60-135 |
| CHLOROFORM | 10.00 | 8.92 | 89.2 | 65-135 |
| CHLOROMETHANE | 10.00 | 8.91 | 89.1 | 40-125 |
| CIS-1,2-DICHLOROETHENE | 10.00 | 9.83 | 98.3 | 70-125 |
| DIBROMOCHLOROMETHANE | 10.00 | 9.40 | 94.0 | 60-135 |
| ETHYLBENZENE | 10.00 | 10.4 | 104 | 75-125 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/14 |
| Analysis Date : | 10/26/14 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

*Printed: 10/29/14 4:48:06 PM*
*APPL Standard LCS*

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | 9.79 | 97.9 | 50-140 |
| METHYL TERT-BUTYL ETHER | 10.00 | 9.21 | 92.1 | 65-125 |
| METHYLENE CHLORIDE | 10.00 | 9.94 | 99.4 | 55-140 |
| STYRENE | 10.00 | 11.1 | 111 | 65-135 |
| TETRACHLOROETHENE | 10.00 | 9.14 | 91.4 | 45-150 |
| TOLUENE | 10.00 | 10.5 | 105 | 75-120 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | 9.32 | 93.2 | 60-140 |
| TRICHLOROETHENE | 10.00 | 9.30 | 93.0 | 70-125 |
| VINYL CHLORIDE | 10.00 | 7.75 | 77.5 | 50-145 |
| XYLENES (TOTAL) | 30.0 | 31.3 | 104 | 75-130 |
| SURROGATE: 1,2-DICHLOROETHANE- | 27.7 | 24.3 | 87.7 | 70-120 |
| SURROGATE: 4-BROMOFLUOROBENZ | 22.2 | 26.5 | 119 | 75-120 |
| SURROGATE: DIBROMOFLUOROMETH | 27.2 | 23.9 | 88.0 | 85-115 |
| SURROGATE: TOLUENE-D8 (S) | 26.2 | 27.6 | 106 | 85-120 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/14 |
| Analysis Date : | 10/26/14 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

*Printed: 10/29/14 4:48:07 PM*
*APPL Standard LCS*

# EPA 8260C^LL

Form 4

## Blank Summary

Lab Name: APPL, Inc.
Case No: 74672
Matrix: WATER
Blank ID: 141026AL-BLK

SDG No: 74672
Date Analyzed: 10/26/14
Instrument: Loki
Time Analyzed: 1457

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141026AL-LCS | Lab Control Spike | 1026L05 | 10/26/14 1235 |
| 141026AL-BLK | Blank | 1026L10 | 10/26/14 1457 |
| AZ05390 | TB102014 | 1026L12 | 10/26/14 1553 |
| AZ05389 | RHMW07-GW-01FD | 1026L16 | 10/26/14 1746 |
| AZ05388 | RHMW07-GW-01 | 1026L17 | 10/26/14 1815 |

Comments: Batch: #86CRE-141026AL

*Printed: 10/29/14 4:49:30 PM*
*Form 4, Blank Summary*

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: ~~1024L01.D~~ 74672
Matrix: Water np 11-17-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: np 11-17-14 ~~Loki~~ 74672
Date Analyzed: 10/24/2014
Instrument: Loki
Time Analyzed: 10:32

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 0.1ug/L Vol Std 10-2 | 1024L05.D | 10/24/2014 12:19 |
| 2 | | 0.3ug/L Vol Std 10-2 | 1024L06.D | 10/24/2014 12:47 |
| 3 | | 0.5ug/L Vol Std 10-2 | 1024L07.D | 10/24/2014 13:16 |
| 4 | | 1.0ug/L Vol Std 10-2 | 1024L08.D | 10/24/2014 13:44 |
| 5 | | 5.0ug/L Vol Std 10-2 | 1024L09.D | 10/24/2014 14:12 |
| 6 | | 10ug/L Vol Std 10-24 | 1024L10.D | 10/24/2014 14:41 |
| 7 | | 20ug/L Vol Std 10-24 | 1024L11.D | 10/24/2014 15:09 |
| 8 | | 40ug/L Vol Std 10-24 | 1024L12.D | 10/24/2014 15:37 |
| 9 | | 100ug/L Vol Std 10-2 | 1024L13.D | 10/24/2014 16:05 |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 16.4 |
| 75 | 30 - 60% of mass 95 | 48.1 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.7 |
| 173 | 0 - 2.09% of mass 174 | 0.0 |
| 174 | 50 - 100% of mass 95 | 96.2 |
| 175 | 5 - 9% of mass 174 | 7.7 |
| 176 | 94.9 - 101% of mass 174 | 96.1 |
| 177 | 5 - 9% of mass 176 | 6.6 |

Form 5
Tune Summary

np 11-17-14

Lab Name: APPL Inc.
Case No: ~~1024L18.D~~ 74672
Matrix: Water np 11-17-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: ~~Loki~~ 74672
Date Analyzed: 10/24/2014
Instrument: Loki
Time Analyzed: 17:30

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 10ug/L Std 10-24-14( | 1024L18.D | 10/24/2014 18:27 |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
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| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 18.7 |
| 75 | 30 - 60% of mass 95 | 49.6 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 7.2 |
| 173 | 0 - 2.09% of mass 174 | 2.0 |
| 174 | 50 - 100% of mass 95 | 94.1 |
| 175 | 5 - 9% of mass 174 | 7.5 |
| 176 | 94.9 - 101% of mass 174 | 98.5 |
| 177 | 5 - 9% of mass 176 | 5.6 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 74672
Matrix: Water
ID: 10ug/L Std 10-26-14(CCV)

SDG No: 74672
Date Analyzed: 10/26/2014
Instrument: Loki
Time Analyzed: 12:07

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 10ug/L Std 10-26-14( | 1026L04.D | 10/26/2014 12:07 |
| 2 | Lab Control Spike | 141026A LCS-1WL | 1026L05.D | 10/26/2014 12:35 |
| 3 | Blank | 141026A BLK-1WL | 1026L10.D | 10/26/2014 14:57 |
| 4 | TB102014 | AZ05390W02 | 1026L12.D | 10/26/2014 15:53 |
| 5 | RHMW07-GW-01FD | AZ05389W02 | 1026L16.D | 10/26/2014 17:46 |
| 6 | RHMW07-GW-01 | AZ05388W02 | 1026L17.D | 10/26/2014 18:15 |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 18.3 |
| 75 | 30 - 60% of mass 95 | 49.1 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.4 |
| 173 | 0 - 2.09% of mass 174 | 1.9 |
| 174 | 50 - 100% of mass 95 | 91.2 |
| 175 | 5 - 9% of mass 174 | 7.6 |
| 176 | 94.9 - 101% of mass 174 | 95.7 |
| 177 | 5 - 9% of mass 176 | 6.7 |

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc. Contract: Review

Lab Code: SDG No.: 74672

Lab File ID (Standard): 1024L11.D Date Analyzed: 10/24/14

Instrument ID: Loki Time Analyzed: 15:09

GC Column: ID: Heated Purge: (Y/N)

| | | Fluorobenzene (IS) | | Chlorobenzene-D5 (IS) | | 1,4-Dichlorobenzene-D (IS) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 423488 | 5.95 | 363136 | 9.18 | 248000 | 11.51 |
| | UPPER LIMIT | 846976 | 6.45 | 726272 | 9.68 | 496000 | 12.01 |
| | LOWER LIMIT | 211744 | 5.45 | 181568 | 8.68 | 124000 | 11.01 |
| | SAMPLE NO. | | | | | | |
| 01 | 10ug/L Std 10-26-14(CC | 397248 | 5.95 | 332288 | 9.18 | 219840 | 11.51 |
| 02 | 141026A LCS-1WL | 395328 | 5.95 | 342336 | 9.18 | 219328 | 11.51 |
| 03 | 141026A BLK-1WL | 333440 | 5.95 | 314944 | 9.18 | 147328 | 11.51 |
| 04 | AZ05390W02 | 316608 | 5.95 | 286272 | 9.18 | 147840 | 11.51 |
| 05 | AZ05389W02 | 310592 | 5.95 | 294016 | 9.18 | 144000 | 11.51 |
| 06 | AZ05388W02 | 314432 | 5.95 | 298688 | 9.18 | 147264 | 11.51 |
| 07 | | | | | | | |
| 08 | | | | | | | |
| 09 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
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| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

# EPA METHOD 8260C
# Volatile Organic Compounds
# Sample Data

APPL, INC.

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05388**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | ACETONE | 1.9 J | 10.0 | 2.00 | 0.95 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/14 | 10/26/14 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L17
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 10/29/14 4:48:10 PM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05388**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 104 | 70-120 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 96.2 | 75-120 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 102 | 85-115 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 96.3 | 85-120 | | | % | 10/26/14 | 10/26/14 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L17
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 10/29/14 4:48:10 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141024\1026L17.D
Acq On : 26 Oct 14 18:15
Sample : AZ05388W02
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 16:15 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 314432 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 298688 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 147264 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 190123 | 27.75191 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 102.161% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 208131 | 28.68094 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 103.559% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 533051 | 25.18052 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 96.293% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 172492 | 21.37698 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 96.159% | |
| **Target Compounds** | | | | | Qvalue |
| 11) Acetone | 2.25 | 43 | 4627 | 1.90335 ppb # | 83 |

(#) = qualifier out of range (m) = manual integration

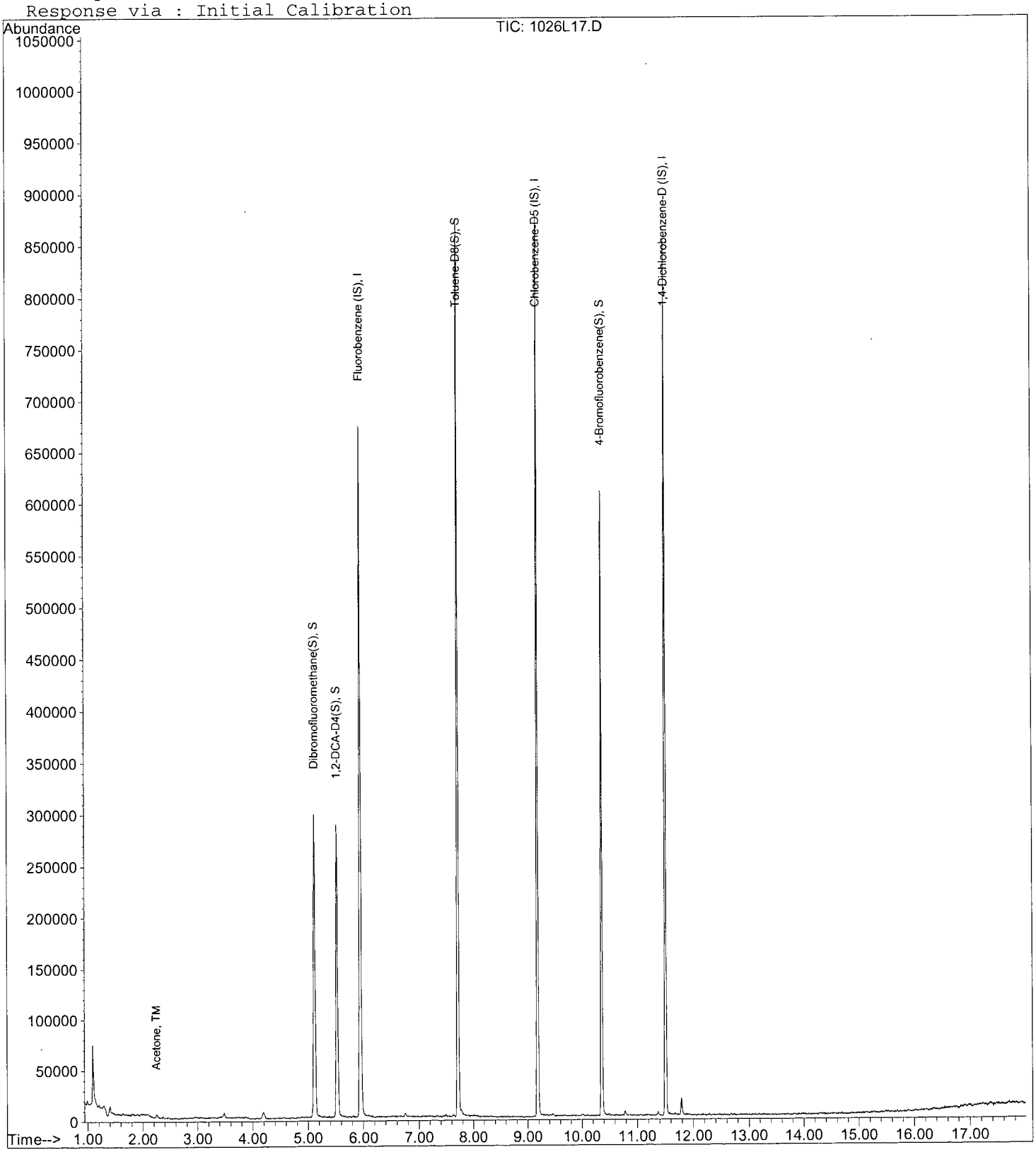
Quantitation Report

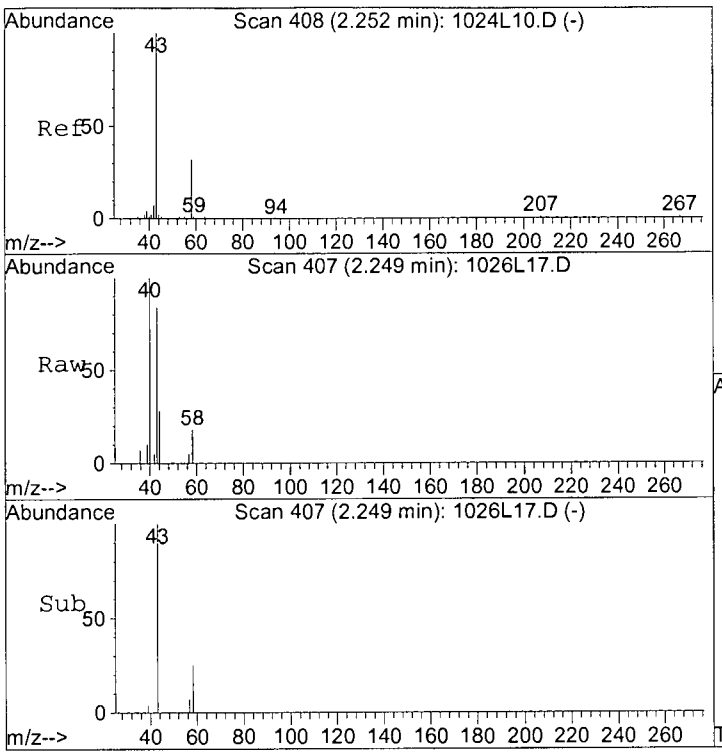
Data File : M:\LOKI\DATA\141024\1026L17.D
Acq On : 26 Oct 14 18:15
Sample : AZ05388W02
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 16:15 2014 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

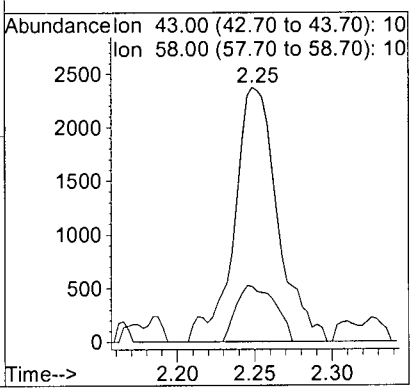





#11
Acetone
Concen: 1.90335 ppb
RT: 2.25 min Scan# 407
Delta R.T. -0.00 min
Lab File: 1026L17.D
Acq: 26 Oct 14 18:15

Tgt Ion: 43 Resp: 4627

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 21.8 | 21.9 | 40.7# |



# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01FD**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05389**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | ACETONE | 1.7 J | 10.0 | 2.00 | 0.95 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/14 | 10/26/14 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L16
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 10/29/14 4:48:10 PM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01FD**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05389**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 106 | 70-120 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 102 | 75-120 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 105 | 85-115 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 100 | 85-120 | | | % | 10/26/14 | 10/26/14 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L16
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 10/29/14 4:48:11 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141024\1026L16.D
Acq On : 26 Oct 14 17:46
Sample : AZ05389W02
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 15
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 16:13 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 310592 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 294016 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 144000 | 25.00000 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 193413 | 28.58119 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 105.213% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 211106 | 29.45056 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 106.339% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 544979 | 26.15306 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 100.010% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 179735 | 22.62856 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 101.790% | |
| Target Compounds | | | | | Qvalue |
| 11) Acetone | 2.26 | 43 | 4262 | 1.70105 ppb | 89 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

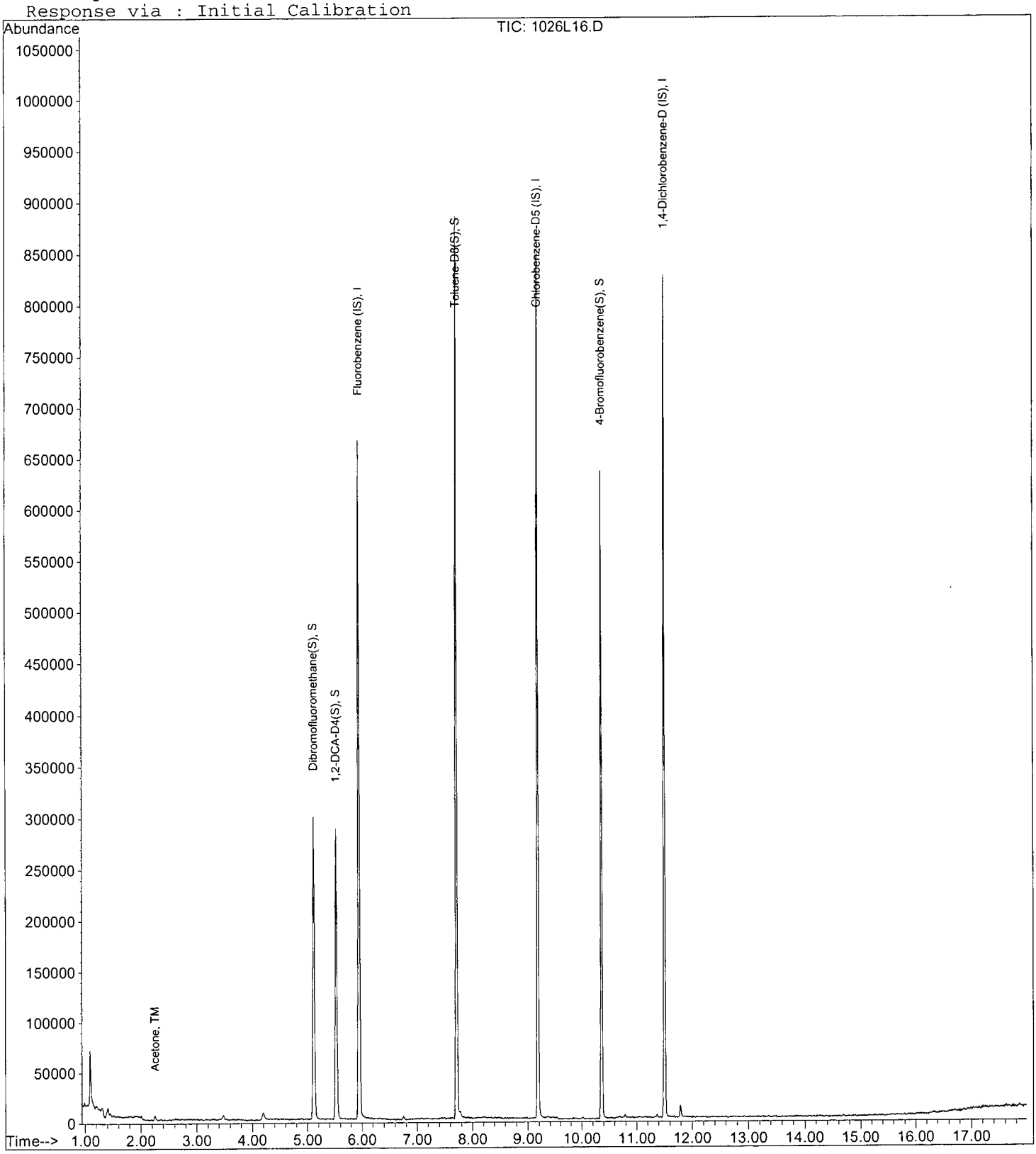
Data File : M:\LOKI\DATA\141024\1026L16.D
Acq On : 26 Oct 14 17:46
Sample : AZ05389W02
Misc : 10mL w/5uL IS&S:10-06-14

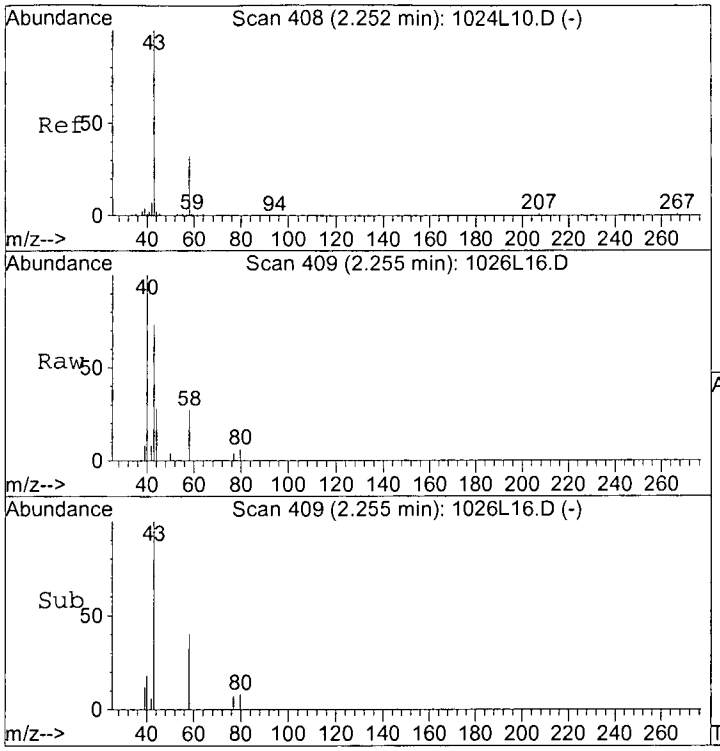
Vial: 15
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 16:13 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

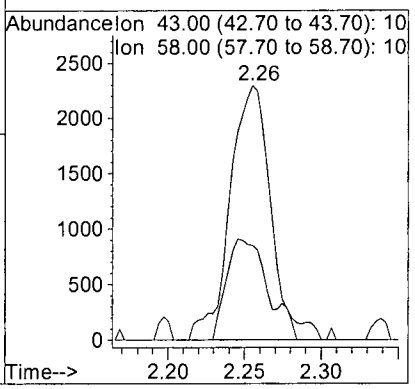





#11
Acetone
Concen: 1.70105 ppb
RT: 2.26 min Scan# 409
Delta R.T. 0.00 min
Lab File: 1026L16.D
Acq: 26 Oct 14 17:46

Tgt Ion: 43 Resp: 4262

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 37.1 | 21.9 | 40.7 |



# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: TB102014**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05390**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | BROMOMETHANE | 1.5 J | 2.0 | 0.50 | 0.24 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/14 | 10/26/14 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L12
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 10/29/14 4:48:11 PM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: TB102014**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05390**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 99.5 | 70-120 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 102 | 75-120 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 103 | 85-115 | | | % | 10/26/14 | 10/26/14 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 102 | 85-120 | | | % | 10/26/14 | 10/26/14 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L12
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 10/29/14 4:48:11 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141024\1026L12.D
Acq On : 26 Oct 14 15:53
Sample : AZ05390W02
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 16:10 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 316608 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 286272 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 147840 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 193431 | 28.04072 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 103.225% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 201320 | 27.55170 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 99.483% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 543766 | 26.80075 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 102.488% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 175478 | 22.69023 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 102.065% | |
| **Target Compounds** | | | | | Qvalue |
| 6) Bromomethane | 1.45 | 94 | 7885 | 1.52887 ppb | 93 |

(#) = qualifier out of range (m) = manual integration

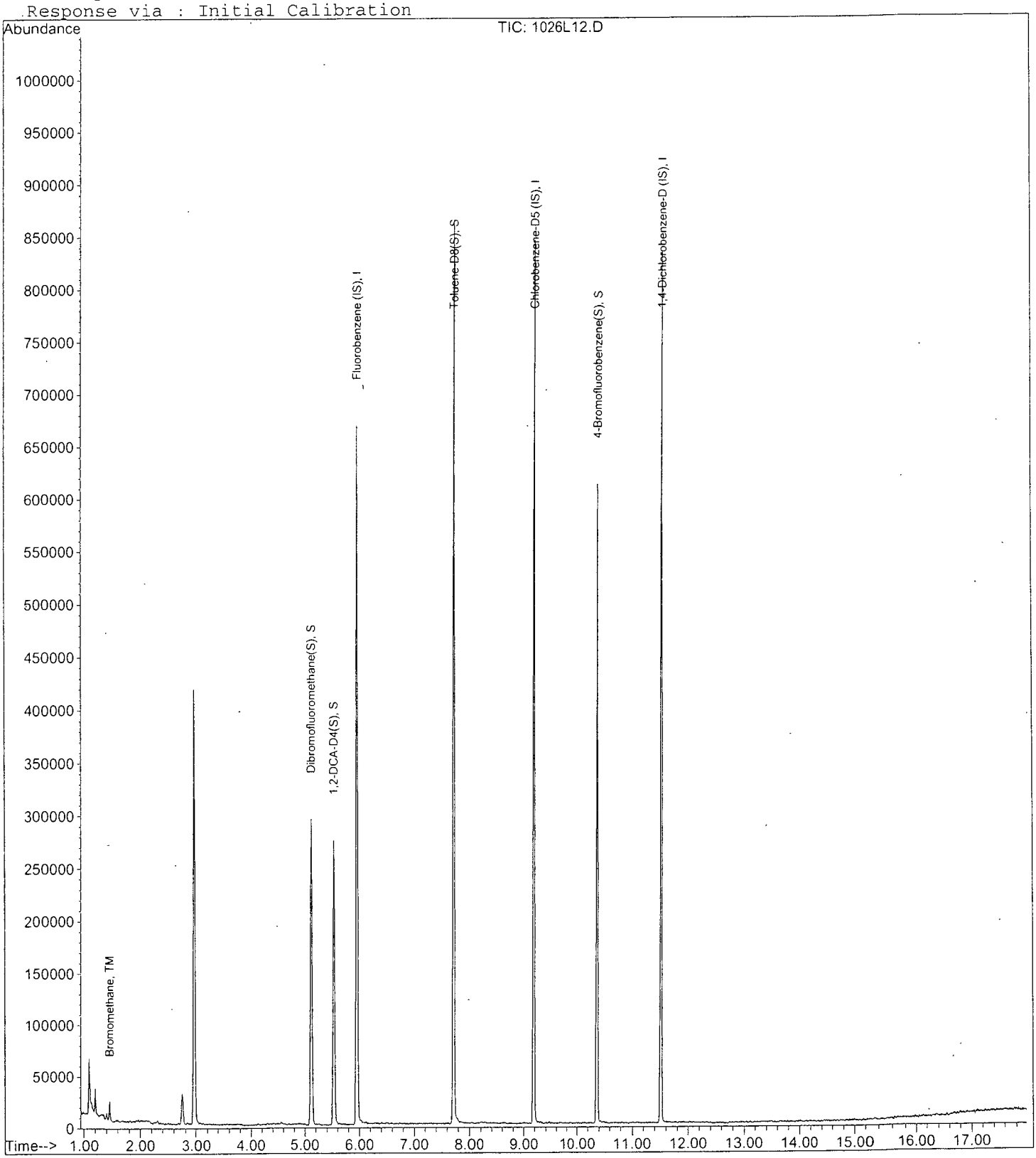
Quantitation Report

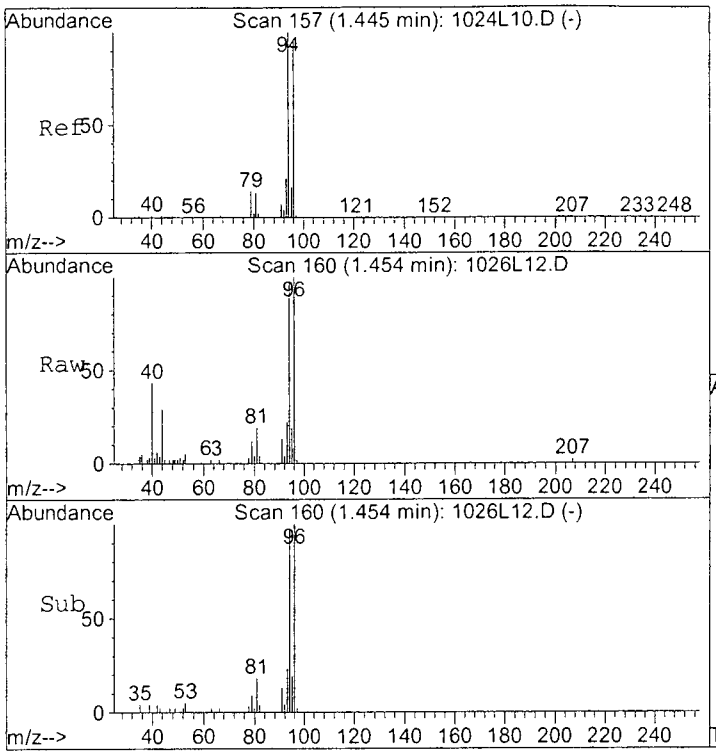
Data File : M:\LOKI\DATA\141024\1026L12.D
Acq On : 26 Oct 14 15:53
Sample : AZ05390W02
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 16:10 2014 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

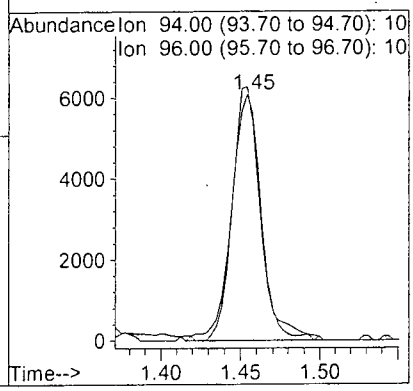





#6
Bromomethane
Concen: 1.52887 ppb
RT: 1.45 min Scan# 160
Delta R.T. 0.01 min
Lab File: 1026L12.D
Acq: 26 Oct 14 15:53

Tgt Ion: 94 Resp: 7885

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 94 | 100 | | |
| 96 | 103.4 | 67.5 | 125.3 |



# EPA METHOD 8260C
# Volatile Organic Compounds
# Calibration Data

APPL, INC.

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc
Case No:
Matrix

SDG No:
Initial Cal Date: 10/24/14
Instrument. Loki

Initials.

| | | Compound | 0.1 | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1025L03.D | 1024L06.D | 1024L07.D | 1024L08.D | 1024L09 D | 1024L10.D | 1024L11.D | 1024L12 D | 1024L13.D | | | | | |
| 1 | I | Fluorobenzene (IS) | ISTD | | | | | | | | | | | | | |
| 2 | TML | Dichlorodifluoromethane | | 0.4471 | 0.5328 | 0.4546 | 0.3066 | 0.3043 | 0.3185 | 0.3013 | 0.3216 | | 0.37 | 24 | TML | 0.999 |
| 3 | TM | Freon 114 | | 0.3222 | 0.3065 | 0.3512 | 0.2548 | 0.2555 | 0.2452 | 0.2611 | 0.2757 | | 0.28 | 13 | TM | |
| 4 | TM**L | Chloromethane | | 1.011 | 0.8594 | 0.8542 | 0.5506 | 0.5124 | 0 4798 | 0.4802 | 0.4862 | | 0.65 | 33 | TM**L | 1.000 |
| 5 | TM* | Vinyl chloride | 0.9435 | 0.7441 | 0.7516 | 0.6763 | 0.5030 | 0.4891 | 0.4716 | 0.4720 | 0.4860 | | 0.62 | 28 | TM* | |
| 6 | TML | Bromomethane | | 0.6825 | 0.5298 | 0.5059 | 0.3505 | 0.3257 | | | | | 0.48 | 30 | TML | 0.999 |
| 7 | TML | Chloroethane | | | 0.3590 | 0.3710 | 0.2615 | 0.2390 | 0.2267 | 0.2277 | | | 0.28 | 24 | TML | 1 000 |
| 8 | TM | Dichlorofluoromethane | | | 1.267 | 1.134 | 1.013 | 0.9407 | 0.8410 | 0.9197 | 0.9142 | | 1.0 | 15 | TM | |
| 9 | TM | Trichlorofluoromethane | | | 0.9130 | 0.8977 | 0.6819 | 0.6851 | 0.6637 | 0.6887 | 0.6972 | | 0.75 | 15 | TM | |
| 10 | TM | Acrolein | | 0.0585 | 0.0601 | 0.0629 | 0.0561 | 0.0551 | 0.0526 | 0.0494 | 0.0538 | | 0.06 | 7.7 | TM | |
| 11 | TML | Acetone | | | 0.4654 | 0.2575 | 0.1663 | 0.1460 | 0.1257 | 0.1201 | 0.1251 | | 0.20 | 63 | TML | 0.999 |
| 12 | TM | Freon-113 | | 0 4213 | 0.5234 | 0.5107 | 0.4182 | 0.3871 | 0.3730 | 0.4021 | 0.4080 | | 0.43 | 13 | TM | |
| 13 | TM* | 1,1-DCE | | 0.7980 | 0.8367 | 0.8094 | 0 6327 | 0.6356 | 0.5990 | 0.6261 | 0.6637 | | 0.70 | 14 | TM* | |
| 14 | TM | t-Butanol | | 0.0194 | 0.0173 | 0.0161 | 0.0139 | 0.0146 | 0.0138 | 0.0143 | 0.0137 | | 0.02 | 13 | TM | |
| 15 | TM | Acetonitrile | | | 0.0750 | 0.0734 | 0.0656 | 0.0606 | 0.0566 | 0.0502 | 0.0594 | | 0.06 | 14 | TM | |
| 16 | TML | Methyl Acetate | | 0.7286 | 0.5852 | 0.4859 | 0.4406 | 0.4141 | 0.3787 | 0 3709 | | | 0.49 | 27 | TML | 0 999 |
| 17 | TM | Iodomethane | | | 0.1706 | 0 1688 | 0.1397 | 0.1374 | 0.1406 | 0.1630 | | | 0.15 | 10 | TM | |
| 18 | TM | Acrylonitrile | | | 0 1516 | 0.1583 | 0.1321 | 0.1220 | 0.1178 | 0.1272 | 0 1263 | | 0.13 | 11 | TM | |
| 19 | TML | Methylene chloride | | | 0.7472 | 0.6765 | 0.5715 | 0.5373 | 0.4680 | 0.5002 | 0.4929 | | 0.57 | 18 | TML | 1.000 |
| 20 | TML | Carbon disulfide | | | 1.596 | 1 478 | 1.230 | 1.150 | 1.059 | 1.126 | 1.166 | | 1.3 | 16 | TML | 0.999 |
| 21 | TM | Methyl t-butyl ether (MtBE) | | 1.135 | 1.203 | 1.090 | 1.044 | 1.027 | 1.008 | 1.151 | 1.247 | | 1.1 | 7.7 | TM | |
| 22 | TM | Trans-1,2-DCE | | 0.5930 | 0.5610 | 0.5408 | 0.4659 | 0.4307 | 0 4066 | 0.4383 | 0 4685 | | 0 49 | 14 | TM | |
| 23 | TM | Diisopropyl Ether | | 1.379 | 1.265 | 1.271 | 1.125 | 1.205 | 1 219 | 1.437 | 1 544 | | 1.3 | 11 | TM | |
| 24 | TM** | 1,1-DCA | | 1.198 | 1.004 | 1.022 | 0.9069 | 0.8656 | 0.7992 | 0.8326 | 0.8273 | | 0.93 | 14 | TM** | |
| 25 | TM | Hexane | | 0.3855 | 0.3701 | 0.3755 | 0.3006 | 0.3256 | 0.3249 | 0.3947 | 0 4653 | | 0.37 | 14 | TM | |
| 26 | TM | Vinyl Acetate | | | 0.3498 | 0.3228 | 0.2685 | 0.2674 | 0.2505 | 0.2778 | 0.2802 | | 0.29 | 12 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | | 1.101 | 1.022 | 1.006 | 1.037 | 1.030 | 1.041 | 1.228 | 1.342 | | 1.1 | 11 | TM | |
| 28 | TML | MEK (2-Butanone) | | | 0.2722 | 0.2008 | 0.1932 | 0.1834 | 0.1541 | 0.1755 | 0.1710 | | 0.19 | 20 | TML | 0.999 |
| 29 | TM | Cis-1,2-DCE | | 0.5438 | 0.6042 | 0.5454 | 0.4926 | 0.5008 | 0.4877 | 0.5296 | 0.5447 | | 0.53 | 7.2 | TM | |
| 30 | TML | 2,2-Dichloropropane | | 0.2796 | 0.3160 | 0.3120 | 0.2420 | 0.2323 | 0.2125 | 0.2210 | 0.2234 | | 0 25 | 16 | TML | 1.000 |
| 31 | TM* | Chloroform | 1.424 | 1.080 | 1.078 | 1.053 | 0.9639 | 0.8868 | 0.8011 | 0.8486 | 0 8284 | | 1.00 | 19 | TM* | |
| 32 | TM | Bromochloromethane | | 0.2676 | 0.2986 | 0.3428 | 0.2848 | 0.2673 | 0.2410 | 0.2417 | 0.2496 | | 0.27 | 13 | TM | |
| 33 | S | Dibromofluoromethane(S) | | 0.6168 | 0.6345 | 0.5864 | 0.5496 | 0.5138 | 0.4905 | 0.4792 | 0 4869 | | 0.54 | 11 | S | |
| 34 | TM | 1,1,1-TCA | | | 0.8275 | 0.9792 | 0.8022 | 0.7439 | 0.6882 | 0.7214 | 0.7264 | | 0.78 | 13 | TM | |
| 35 | TM | Cyclohexane | | | 0.3592 | 0.3563 | 0.2952 | 0.2948 | 0.2926 | 0.3564 | 0.3435 | | 0.33 | 9.8 | TM | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No.
Initial Cal. Date: 10/24/14
Instrument: Loki

Initials:

| | | Compound | 0 1 | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | TM | 1,1-Dichloropropene | | 0.5655 | 0.5273 | 0.5390 | 0.5148 | 0 5321 | 0.5277 | 0.5843 | 0.6062 | | 0.55 | 5.9 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | | 0.9469 | 0.9480 | 0.9068 | 0.8650 | 0.9673 | 1.007 | 1.116 | 1.321 | | 1.0 | 14 | TM | |
| 38 | S | 1,2-DCA-D4(S) | | 0.7002 | 0.6504 | 0.6260 | 0.5578 | 0.5478 | 0.5104 | 0.5059 | 0.5173 | | 0.58 | 13 | S | |
| 39 | TM | Carbon Tetrachloride | 0.5815 | 0.5328 | 0.6540 | 0.6704 | 0.6583 | 0.6413 | 0.6041 | 0.6687 | 0 6697 | | 0.63 | 7 7 | TM | |
| 40 | TM | Tert Amyl Methyl Ether | | 1.035 | 1.026 | 0.9848 | 1.013 | 1.083 | 1.074 | 1.217 | 1.297 | | 1.1 | 10 0 | TM | |
| 41 | TML | 1,2-DCA | 1.184 | 0.8783 | 0.7379 | 0.7476 | 0.7024 | 0.6807 | 0.6105 | 0.6285 | 0.6288 | | 0.76 | 24 | TML | 1.000 |
| 42 | TML | Benzene | 3.008 | 1.989 | 1.958 | 1.858 | 1.796 | 1 782 | 1.699 | 1.826 | 1 868 | | 2.0 | 20 | TML | 1.000 |
| 43 | TM | TCE | | 0.5172 | 0.5351 | 0.5497 | 0.4909 | 0.4807 | 0.4354 | 0.4764 | 0.4927 | | 0.50 | 7.3 | TM | |
| 44 | TM | 2-Pentanone | | | 0.2792 | 0.3155 | 0.3135 | 0.3205 | 0.3189 | 0.3453 | 0.3433 | | 0.32 | 6.9 | TM | |
| 45 | TM* | 1,2-Dichloropropane | | 0.6994 | 0.6284 | 0.6508 | 0.5475 | 0.5118 | 0.4810 | 0.5318 | 0.5195 | | 0.57 | 14 | TM* | |
| 46 | TM | Bromodichloromethane | | 0.8199 | 0.8303 | 0.8258 | 0.7404 | 0.6856 | 0.6095 | 0.6686 | 0.6600 | | 0.73 | 12 | TM | |
| 47 | TM | Methyl Cyclohexane | | 0.5411 | 0.5729 | 0.5064 | 0.4599 | 0.4855 | 0.5148 | 0.6208 | 0.7092 | | 0.55 | 15 | TM | |
| 48 | TM | Dibromomethane | | 0 4072 | 0.3839 | 0.3689 | 0.3498 | 0 3293 | 0.2879 | 0.3082 | 0.2874 | | 0.34 | 13 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | | | 0.0508 | 0.0509 | 0.0482 | 0.0404 | 0.0459 | 0.0525 | 0.0640 | | 0.05 | 14 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | | | 0.3892 | 0.4766 | 0.3567 | 0.3338 | 0.3334 | 0.3638 | 0 4040 | | 0.38 | 13 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | | 0.5255 | 0 4672 | 0.4584 | 0.4032 | 0.3992 | 0.3579 | 0.3980 | 0.4025 | | 0.43 | 12 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | | 0.9231 | 0 8823 | 0.8423 | 0.7133 | 0.7161 | 0 6855 | 0 7864 | 0.8235 | | 0.80 | 11 | TM | |
| 53 | TM* | Toluene | | 1.812 | 1.708 | 1.711 | 1.814 | 1.917 | 1.869 | 2 054 | 2 055 | | 1.9 | 7.3 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | | 0.8491 | 0 7567 | 0.6847 | 0.6591 | 0.6379 | 0.6026 | 0.6819 | 0.7137 | | 0.70 | 11 | TM | |
| 55 | TM | 1,1,2-TCA | | 0.4240 | 0.4913 | 0.4506 | 0.4064 | 0.3819 | 0.3421 | 0 3686 | 0.3652 | | 0.40 | 12 | TM | |
| 56 | TM | 2-Hexanone | | 0.2767 | 0.2304 | 0.2409 | 0.2327 | 0.2144 | 0.2220 | 0 2449 | 0.2814 | | 0.24 | 10 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | | | | | | | | | | | |
| 58 | S | Toluene-D8(S) | | 1.544 | 1.775 | 1.666 | 1.693 | 1.839 | 1.831 | 1 904 | 1.922 | | 1.8 | 7 3 | S | |
| 59 | TM | 1,2-EDB | | 0 5575 | 0.5317 | 0.5088 | 0.5320 | 0.5138 | 0.4655 | 0.5044 | 0.4982 | | 0.51 | 5.3 | TM | |
| 60 | TM | Tetrachloroethene | 0.8838 | 0.8054 | 0.7968 | 0.7962 | 0.7160 | 0.7169 | 0.6403 | 0.6469 | 0.6287 | | 0.74 | 12 | TM | |
| 61 | TM | 1-Chlorohexane | | | 0.4845 | 0.4915 | 0.5154 | 0.5254 | 0.5538 | 0.6653 | 0.6973 | | 0.56 | 15 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | | 0.8505 | 0.7306 | 0.6793 | 0.7075 | 0.6677 | 0.5984 | 0.6183 | 0.5925 | | 0.68 | 13 | TM | |
| 63 | TM | m&p-Xylene | | 0.7886 | 0.7504 | 0.7124 | 0.8456 | 0.9248 | 0.9319 | 1.025 | 1.013 | | 0.87 | 14 | TM | |
| 64 | TM | o-Xylene | | 0.7206 | 0.7081 | 0.7428 | 0.7747 | 0 8390 | 0.8401 | 0.9408 | 0 9926 | | 0.82 | 13 | TM | |
| 65 | TM | Styrene | | 1.125 | 1.147 | 1.150 | 1.313 | 1.491 | 1.543 | | | | 1.3 | 14 | TM | |
| 66 | S | 4-Bromofluorobenzene(S) | | 0.6140 | 0.6086 | 0.5677 | 0.6356 | 0.7143 | 0.7244 | 0.7553 | 0.7832 | | 0.68 | 12 | S | |
| 67 | TM | 1,3-Dichloropropane | | 0.9831 | 0.7780 | 0.8244 | 0.8934 | 0.8643 | 0.7762 | 0.8472 | 0.8440 | | 0.85 | 7.8 | TM | |
| 68 | TM | Dibromochloromethane | | 0.5850 | 0.6678 | 0.6693 | 0.6806 | 0.6488 | 0.6007 | 0.6223 | 0.6153 | | 0.64 | 5.6 | TM | |
| 69 | TM** | Chlorobenzene | | 1.807 | 1.586 | 1.496 | 1.624 | 1.600 | 1.459 | 1.570 | 1.555 | | 1.6 | 6.6 | TM** | |
| 70 | TM* | Ethylbenzene | | 1.956 | 1.948 | 2.006 | 2.175 | 2 305 | 2.295 | 2.576 | 2.532 | | 2.2 | 11 | TM* | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No.
Initial Cal. Date 10/24/14
Instrument Loki

Initials:

| | | Compound | 0.1 | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | TM** | Bromoform | | 0.3933 | 0.4621 | 0.5080 | 0.5025 | 0.4793 | 0.4310 | 0.4367 | 0.4637 | | 0.46 | 8.4 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | | | | | | | | | | | |
| 73 | TM | Isopropylbenzene | | 3.319 | 3.101 | 2.937 | 2.981 | 2 878 | 2.991 | 3.514 | 3.649 | | 3.2 | 9.1 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | | | 1.480 | 1 350 | 1.162 | 1 035 | 0.9182 | 0.9731 | 0.9665 | | 1 1 | 19 | TM**L | 1.000 |
| 75 | TM | 1,2,3-Trichloropropane | | | 0.3347 | 0.3857 | 0.3408 | 0.3138 | 0.2897 | 0.3029 | 0.2995 | | 0.32 | 10 | TM | |
| 76 | TM | t-1,4-Dichloro-2-Butene | | | 0.2298 | 0 1928 | 0.1875 | 0.2034 | 0.1755 | 0.2022 | 0.2097 | | 0.20 | 8.7 | TM | |
| 77 | TM | Bromobenzene | | 1.144 | 1.102 | 1.097 | 1.108 | 1.066 | 1.008 | 1.067 | 1.052 | | 1.1 | 3.8 | TM | |
| 78 | TM | n-Propylbenzene | | 3.878 | 3.694 | 3.393 | 3.539 | 3.773 | 3.877 | 4.463 | 4.428 | | 3.9 | 9 9 | TM | |
| 79 | TM | 4-Ethyltoluene | | 3.357 | 3.189 | 2.796 | 3.086 | 3.412 | 3.544 | 3.972 | 3.917 | | 3 4 | 12 | TM | |
| 80 | TM | 2-Chlorotoluene | | 2.588 | 2.513 | 2.118 | 2.351 | 2.508 | 2.468 | 2.731 | 2 642 | | 2.5 | 7.6 | TM | |
| 81 | TM | 1,3,5-Trimethylbenzene | | 2.947 | 2.572 | 2.401 | 2.877 | 3 201 | 3.147 | 3.438 | 3.344 | | 3.0 | 12 | TM | |
| 82 | TM | 4-Chlorotoluene | | 2.950 | 2.614 | 2.644 | 2.964 | 3 103 | 3.017 | 3.240 | 3.152 | | 3.0 | 7.6 | TM | |
| 83 | TM | Tert-Butylbenzene | | 2.384 | 2.333 | 2.166 | 2.293 | 2.255 | 2.284 | 2.677 | 2.788 | | 2.4 | 9.1 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | | 2.750 | 2.499 | 2.389 | 2.667 | 2 888 | 3.049 | 3.467 | 3 448 | | 2.9 | 14 | TM | |
| 85 | TM | Sec-Butylbenzene | | 3.563 | 3.122 | 3.065 | 3.313 | 3 515 | 3.545 | 4.009 | 4.144 | | 3.5 | 11 | TM | |
| 86 | TM | p-Isopropyltoluene | | 2.715 | 2.617 | 2.700 | 2.962 | 2.987 | 3.129 | 3.514 | 3.634 | | 3 0 | 12 | TM | |
| 87 | TM | Benzyl Chloride | | 1.762 | 1 525 | 1.544 | 1.414 | 1.329 | 1 218 | 1.261 | 1 410 | | 1.4 | 12 | TM | |
| 88 | TM | 1,3-DCB | | 2.364 | 2.050 | 1.990 | 2 205 | 2.092 | 1.968 | 2.040 | 2.066 | | 2.1 | 6.2 | TM | |
| 89 | TM | 1,4-DCB | | 2.664 | 2.248 | 2.280 | 2.401 | 2 212 | 2.068 | 2.104 | 2.144 | | 2.3 | 8.5 | TM | |
| 90 | TM | n-Butylbenzene | | 2.462 | 2 605 | 2.528 | 2.571 | 2.683 | 2.715 | 3.326 | 3.496 | | 2.8 | 14 | TM | |
| 91 | TM | 1,2-DCB | | 2.305 | 2.143 | 2.175 | 2 113 | 1.911 | 1.831 | 1.909 | 2.072 | | 2.1 | 7.8 | TM | |
| 92 | TML | Hexachloroethane | | 0.9871 | 0.8350 | 0.9429 | 0.7460 | 0.6848 | 0.6049 | 0.6336 | 0.6600 | | 0.76 | 19 | TML | 0.999 |
| 93 | TML | 1,2-Dibromo-3-chloropropane | | | 0.1752 | 0.1865 | 0.1491 | 0.1319 | 0.1290 | 0.1271 | | | 0.15 | 17 | TML | 1.000 |
| 94 | TM | 1,2,4-Trichlorobenzene | | 1.695 | 1.495 | 1.322 | 1.261 | 1.210 | 1.150 | 1.384 | 1.633 | | 1 4 | 14 | TM | |
| 95 | TM | Hexachlorobutadiene | | | 0.9785 | 0.9462 | 0.8644 | 0.7818 | 0.7054 | 0 7638 | 0.8589 | | 0.84 | 12 | TM | |
| 96 | TM | Naphthalene | | 1.639 | 1.511 | 1.338 | 1.441 | 1.413 | 1.441 | 1.968 | | | 1.5 | 14 | TM | |
| 97 | TM | 1,2,3-Trichlorobenzene | | 1.505 | 1.470 | 1.323 | 1 239 | 1.245 | 1 192 | 1.468 | 1 567 | | 1.4 | 10 | TM | |
| 98 | | | | | | | | | | | | | | | | |
| 99 | | | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | | | | | |
| 103 | | | | | | | | | | | | | | | | |
| 104 | | | | | | | | | | | | | | | | |
| 105 | | | | | | | | | | | | | | | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L06.D
Acq On : 24 Oct 14 12:47
Sample : 0.3ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 311104 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 284736 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 147904 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 4605 | 0.67937 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 2.500% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 5228 | 0.72814 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 2.629% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 10552 | 0.52288 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 2.000% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 4196 | 0.54549 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 2.452% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 1669 | 0.60722 ppb | | 95 |
| 3) Freon 114 | 1.10 | 85 | 1203 | 0.34037 ppb | | 96 |
| 4) Chloromethane | 1.14 | 50 | 3773 | 0.23216 ppb | | 86 |
| 5) Vinyl chloride | 1.22 | 62 | 2778 | 0.36284 ppb | | 84 |
| 6) Bromomethane | 1.45 | 94 | 2548 | 0.19666 ppb | | 91 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 5162 | 0.41303 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 3516 | 0.37836 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 7281 | 10.43707 ppb | # | 85 |
| 11) Acetone | 2.26 | 43 | 2814 | 0.74847 ppb | | 87 |
| 12) Freon-113 | 2.20 | 101 | 1573 | 0.29363 ppb | # | 68 |
| 13) 1,1-DCE | 2.18 | 61 | 2979 | 0.34191 ppb | | 88 |
| 14) t-Butanol | 2.88 | 59 | 2408 | 12.56949 ppb | | 96 |
| 15) Acetonitrile | 2.52 | 41 | 9816 | 12.52423 ppb | # | 1 |
| 17) Iodomethane | 2.30 | 142 | 730 | 0.38255 ppb | # | 55 |
| 18) Acrylonitrile | 2.96 | 52 | 541 | 0.32538 ppb | # | 64 |
| 19) Methylene chloride | 2.68 | 84 | 3329 | 0.16838 ppb | | 98 |
| 20) Carbon disulfide | 2.37 | 76 | 5939 | 0.70119 ppb | | 95 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 4239 | 0.30599 ppb | # | 89 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 2214 | 0.36450 ppb | | 90 |
| 23) Diisopropyl Ether | 3.71 | 45 | 5150 | 0.31695 ppb | # | 83 |
| 24) 1,1-DCA | 3.53 | 63 | 4471 | 0.38553 ppb | # | 80 |
| 25) Hexane | 3.37 | 57 | 1439 | 0.31442 ppb | # | 70 |
| 26) Vinyl Acetate | 3.70 | 43 | 1266 | 0.35305 ppb | # | 73 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 4109 | 0.29995 ppb | # | 88 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 1072 | 0.33949 ppb | # | 47 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 2030 | 0.30715 ppb | | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 1044 | 0.27854 ppb | | 91 |
| 31) Chloroform | 4.90 | 83 | 4032 | 0.32531 ppb | | 95 |
| 32) Bromochloromethane | 4.76 | 128 | 999 | 0.29281 ppb | | 86 |
| 34) 1,1,1-TCA | 5.10 | 97 | 3994 | 0.40932 ppb | | 95 |
| 35) Cyclohexane | 5.16 | 41 | 1558 | 0.38137 ppb | # | 58 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 2111 | 0.30865 ppb | # | 86 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 3535 | 0.28132 ppb | # | 19 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 1989 | 0.25322 ppb | | 90 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 3865 | 0.28463 ppb | # | 90 |
| 41) 1,2-DCA | 5.63 | 62 | 3279 | 0.21582 ppb | # | 71 |
| 42) Benzene | 5.58 | 78 | 7425 | 0.65406 ppb | | 93 |
| 43) TCE | 6.37 | 95 | 1931 | 0.31205 ppb | | 95 |
| 44) 2-Pentanone | 6.64 | 43 | 37032 | 9.31564 ppb | | 91 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L06.D
Acq On : 24 Oct 14 12:47
Sample : 0.3ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| | Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|---|
| 45) | 1,2-Dichloropropane | 6.62 | 63 | 2611 | 0.36728 | ppb | # | 86 |
| 46) | Bromodichloromethane | 6.95 | 83 | 3061 | 0.33695 | ppb | # | 92 |
| 47) | Methyl Cyclohexane | 6.57 | 83 | 2020 | 0.29442 | ppb | # | 68 |
| 48) | Dibromomethane | 6.75 | 93 | 1520 | 0.35892 | ppb | # | 85 |
| 49) | 2-Chloroethyl vinyl ether | 7.26 | 106 | 150 | 0.23923 | ppb | # | 1 |
| 50) | MIBK (methyl isobutyl ket | 7.64 | 43 | 1698 | 0.35943 | ppb | # | 85 |
| 51) | 1-Bromo-2-chloroethane | 7.26 | 63 | 1962 | 0.36967 | ppb | | 87 |
| 52) | Cis-1,3-Dichloropropene | 7.45 | 75 | 3446 | 0.34764 | ppb | # | 66 |
| 53) | Toluene | 7.79 | 91 | 6766 | 0.29114 | ppb | | 81 |
| 54) | Trans-1,3-Dichloropropene | 8.04 | 75 | 3170 | 0.36485 | ppb | | 85 |
| 55) | 1,1,2-TCA | 8.22 | 83 | 1583 | 0.31504 | ppb | | 97 |
| 56) | 2-Hexanone | 8.51 | 43 | 1033 | 0.34171 | ppb | | 93 |
| 59) | 1,2-EDB | 8.69 | 107 | 1905 | 0.32542 | ppb | | 95 |
| 60) | Tetrachloroethene | 8.34 | 166 | 2752 | 0.32795 | ppb | | 85 |
| 61) | 1-Chlorohexane | 9.22 | 91 | 1557 | 0.24330 | ppb | | 89 |
| 62) | 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 2906 | 0.37489 | ppb | | 90 |
| 63) | m&p-Xylene | 9.46 | 106 | 5389 | 0.54140 | ppb | | 100 |
| 64) | o-Xylene | 9.85 | 106 | 2462 | 0.26367 | ppb | | 74 |
| 65) | Styrene | 9.87 | 104 | 3845 | 0.26067 | ppb | | 99 |
| 67) | 1,3-Dichloropropane | 8.38 | 76 | 3359 | 0.34643 | ppb | # | 80 |
| 68) | Dibromochloromethane | 8.60 | 129 | 1999 | 0.27587 | ppb | | 86 |
| 69) | Chlorobenzene | 9.21 | 112 | 6175 | 0.34161 | ppb | | 87 |
| 70) | Ethylbenzene | 9.34 | 91 | 6685 | 0.26389 | ppb | | 99 |
| 71) | Bromoform | 10.02 | 173 | 1344 | 0.25677 | ppb | # | 79 |
| 73) | Isopropylbenzene | 10.22 | 105 | 5891 | 0.31397 | ppb | | 91 |
| 74) | 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 2759 | 0.12115 | ppb | # | 78 |
| 75) | 1,2,3-Trichloropropane | 10.55 | 110 | 774 | 0.40396 | ppb | | 82 |
| 76) | t-1,4-Dichloro-2-Butene | 10.58 | 53 | 490 | 0.41382 | ppb | # | 21 |
| 77) | Bromobenzene | 10.50 | 156 | 2030 | 0.31762 | ppb | | 93 |
| 78) | n-Propylbenzene | 10.63 | 91 | 6883 | 0.29981 | ppb | | 100 |
| 79) | 4-Ethyltoluene | 10.75 | 105 | 5959 | 0.29545 | ppb | | 92 |
| 80) | 2-Chlorotoluene | 10.70 | 91 | 4594 | 0.31186 | ppb | | 96 |
| 81) | 1,3,5-Trimethylbenzene | 10.82 | 105 | 5230 | 0.29557 | ppb | | 91 |
| 82) | 4-Chlorotoluene | 10.81 | 91 | 5236 | 0.29895 | ppb | | 99 |
| 83) | Tert-Butylbenzene | 11.13 | 119 | 4231 | 0.29830 | ppb | | 85 |
| 84) | 1,2,4-Trimethylbenzene | 11.18 | 105 | 4881 | 0.28502 | ppb | | 96 |
| 85) | Sec-Butylbenzene | 11.35 | 105 | 6324 | 0.30242 | ppb | | 91 |
| 86) | p-Isopropyltoluene | 11.51 | 119 | 4818 | 0.26857 | ppb | # | 80 |
| 87) | Benzyl Chloride | 11.67 | 91 | 3128 | 0.36897 | ppb | | 90 |
| 88) | 1,3-DCB | 11.44 | 146 | 4195 | 0.33816 | ppb | | 94 |
| 89) | 1,4-DCB | 11.53 | 146 | 4729 | 0.35287 | ppb | | 96 |
| 90) | n-Butylbenzene | 11.91 | 91 | 4370 | 0.26397 | ppb | | 90 |
| 91) | 1,2-DCB | 11.89 | 146 | 4091 | 0.33610 | ppb | | 83 |
| 92) | Hexachloroethane | 12.15 | 117 | 1752 | 0.49339 | ppb | | 91 |
| 93) | 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 439 | 0.07042 | ppb | # | 61 |
| 94) | 1,2,4-Trichlorobenzene | 13.49 | 180 | 3009 | 0.36493 | ppb | | 82 |
| 95) | Hexachlorobutadiene | 13.68 | 225 | 2132 | 0.42763 | ppb | | 93 |
| 96) | Naphthalene | 13.72 | 128 | 2909 | 0.32013 | ppb | | 95 |
| 97) | 1,2,3-Trichlorobenzene | 13.97 | 180 | 2671 | 0.32805 | ppb | # | 84 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

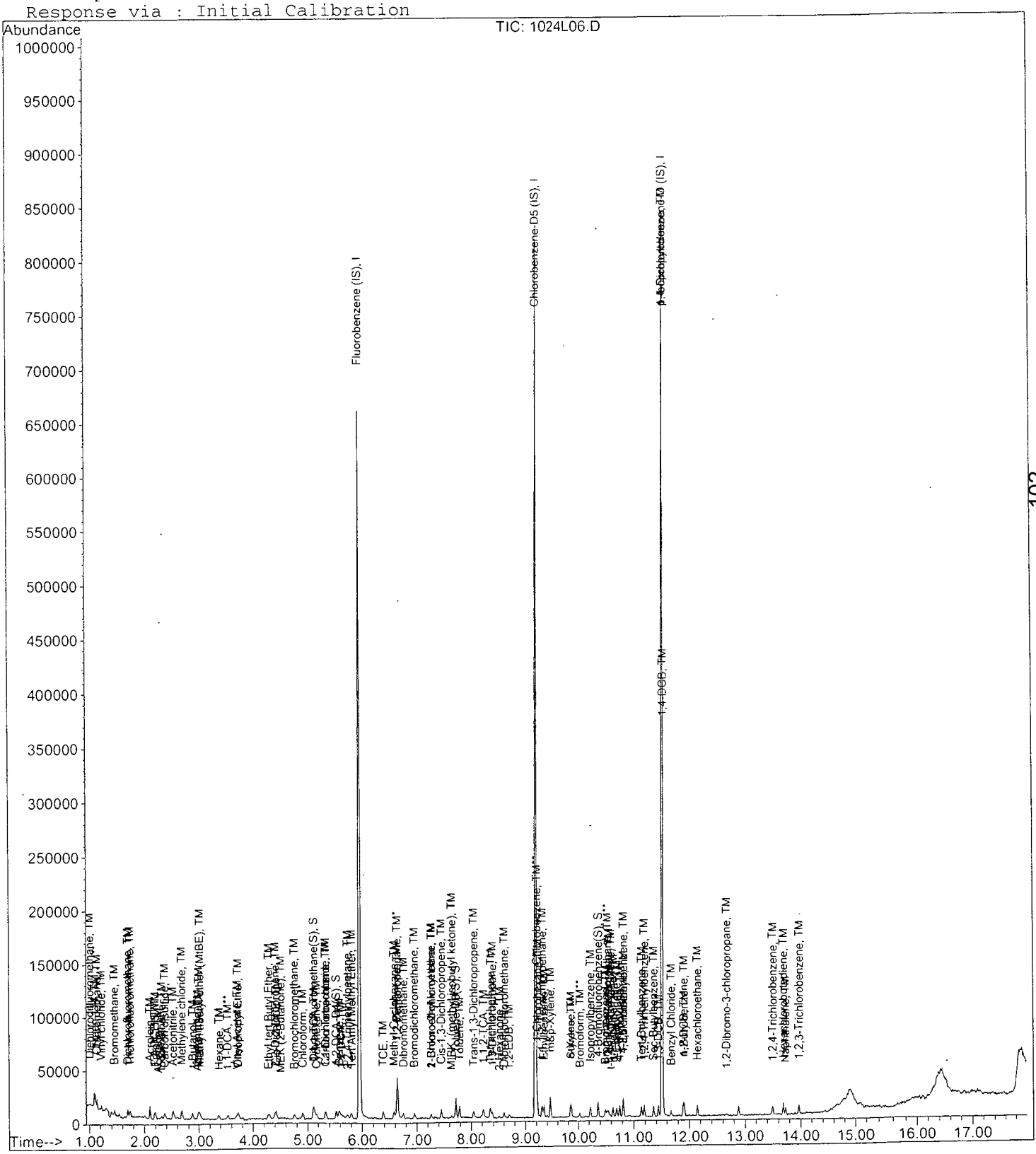
Data File : M:\LOKI\DATA\141024\1024L06.D
Acq On : 24 Oct 14 12:47
Sample : 0.3ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L07.D
Acq On : 24 Oct 14 13:16
Sample : 0.5ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 330048 | 25.00000 ppb | | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 295360 | 25.00000 ppb | | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 156416 | 25.00000 ppb | | 0.00 |
| **System Monitoring Compounds** | | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 8376 | 1.16478 ppb | | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 4.289% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 8586 | 1.12719 ppb | | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 4.069% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 20972 | 1.00185 ppb | | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 3.832% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 7190 | 0.90110 ppb | | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 4.053% | | |
| **Target Compounds** | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.01 | 85 | 3517 | 1.02121 ppb | | 83 |
| 3) Freon 114 | 1.10 | 85 | 2023 | 0.53953 ppb | | 93 |
| 4) Chloromethane | 1.14 | 50 | 5673 | 0.49421 ppb | | 91 |
| 5) Vinyl chloride | 1.21 | 62 | 4961 | 0.61078 ppb | | 98 |
| 6) Bromomethane | 1.45 | 94 | 3497 | 0.38837 ppb | | 88 |
| 7) Chloroethane | 1.53 | 64 | 2370 | 0.24053 ppb | | 89 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 8364 | 0.63083 ppb | | 94 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 6027 | 0.61134 ppb | | 95 |
| 10) Acrolein | 2.10 | 56 | 19851 | 26.82244 ppb | # | 95 |
| 11) Acetone | 2.25 | 43 | 3072 | 0.80194 ppb | | 95 |
| 12) Freon-113 | 2.20 | 101 | 3455 | 0.60793 ppb | | 94 |
| 13) 1,1-DCE | 2.18 | 61 | 5523 | 0.59752 ppb | | 96 |
| 14) t-Butanol | 2.88 | 59 | 5707 | 28.08004 ppb | | 100 |
| 15) Acetonitrile | 2.52 | 41 | 24765 | 29.78401 ppb | # | 62 |
| 16) Methyl Acetate | 2.60 | 43 | 3863 | 0.19895 ppb | | 86 |
| 17) Iodomethane | 2.30 | 142 | 1126 | 0.55620 ppb | | 89 |
| 18) Acrylonitrile | 2.96 | 52 | 1001 | 0.56748 ppb | | 79 |
| 19) Methylene chloride | 2.68 | 84 | 4932 | 0.38444 ppb | | 88 |
| 20) Carbon disulfide | 2.36 | 76 | 10537 | 0.97729 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 7938 | 0.54011 ppb | | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 3703 | 0.57464 ppb | | 94 |
| 23) Diisopropyl Ether | 3.72 | 45 | 8347 | 0.48421 ppb | # | 85 |
| 24) 1,1-DCA | 3.53 | 63 | 6630 | 0.53889 ppb | # | 90 |
| 25) Hexane | 3.37 | 57 | 2443 | 0.50316 ppb | # | 73 |
| 26) Vinyl Acetate | 3.72 | 43 | 2309 | 0.60695 ppb | # | 97 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 6748 | 0.46433 ppb | | 98 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 1797 | 0.63206 ppb | # | 83 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 3988 | 0.56878 ppb | | 90 |
| 30) 2,2-Dichloropropane | 4.41 | 77 | 2086 | 0.61158 ppb | | 96 |
| 31) Chloroform | 4.90 | 83 | 7118 | 0.54134 ppb | | 92 |
| 32) Bromochloromethane | 4.76 | 128 | 1971 | 0.54455 ppb | | 67 |
| 34) 1,1,1-TCA | 5.11 | 97 | 5462 | 0.52763 ppb | | 98 |
| 35) Cyclohexane | 5.16 | 41 | 2371 | 0.54706 ppb | | 79 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 3481 | 0.47975 ppb | | 95 |
| 37) 2,2,4-Trimethylpentane | 5.72 | 57 | 6258 | 0.46944 ppb | # | 89 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 4317 | 0.51806 ppb | # | 73 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 6770 | 0.46995 ppb | # | 90 |
| 41) 1,2-DCA | 5.62 | 62 | 4871 | 0.38407 ppb | # | 86 |
| 42) Benzene | 5.58 | 78 | 12924 | 0.85898 ppb | | 92 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L07.D
Acq On : 24 Oct 14 13:16
Sample : 0.5ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| | Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|---|
| 43) | TCE | 6.39 | 95 | 3532 | 0.53801 | ppb | | 89 |
| 44) | 2-Pentanone | 6.64 | 43 | 92144 | 21.84897 | ppb | | 99 |
| 45) | 1,2-Dichloropropane | 6.62 | 63 | 4148 | 0.55000 | ppb | # | 91 |
| 46) | Bromodichloromethane | 6.95 | 83 | 5481 | 0.56870 | ppb | # | 96 |
| 47) | Methyl Cyclohexane | 6.58 | 83 | 3782 | 0.51960 | ppb | | 96 |
| 48) | Dibromomethane | 6.75 | 93 | 2534 | 0.56402 | ppb | | 89 |
| 49) | 2-Chloroethyl vinyl ether | 7.33 | 106 | 335 | 0.50361 | ppb | # | 36 |
| 50) | MIBK (methyl isobutyl ket | 7.64 | 43 | 2569 | 0.51259 | ppb | # | 85 |
| 51) | 1-Bromo-2-chloroethane | 7.26 | 63 | 3084 | 0.54772 | ppb | | 98 |
| 52) | Cis-1,3-Dichloropropene | 7.45 | 75 | 5824 | 0.55381 | ppb | # | 84 |
| 53) | Toluene | 7.78 | 91 | 11272 | 0.45719 | ppb | | 97 |
| 54) | Trans-1,3-Dichloropropene | 8.04 | 75 | 4995 | 0.54190 | ppb | | 89 |
| 55) | 1,1,2-TCA | 8.21 | 83 | 3243 | 0.60837 | ppb | | 78 |
| 56) | 2-Hexanone | 8.51 | 43 | 1521 | 0.47426 | ppb | # | 84 |
| 59) | 1,2-EDB | 8.70 | 107 | 3141 | 0.51725 | ppb | # | 76 |
| 60) | Tetrachloroethene | 8.34 | 166 | 4707 | 0.54074 | ppb | | 89 |
| 61) | 1-Chlorohexane | 9.22 | 91 | 2862 | 0.43114 | ppb | | 98 |
| 62) | 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 4316 | 0.53676 | ppb | | 80 |
| 63) | m&p-Xylene | 9.46 | 106 | 8866 | 0.85867 | ppb | | 92 |
| 64) | o-Xylene | 9.85 | 106 | 4183 | 0.43187 | ppb | | 86 |
| 65) | Styrene | 9.87 | 104 | 6778 | 0.44299 | ppb | # | 88 |
| 67) | 1,3-Dichloropropane | 8.38 | 76 | 4596 | 0.45696 | ppb | | 89 |
| 68) | Dibromochloromethane | 8.60 | 129 | 3945 | 0.52484 | ppb | | 80 |
| 69) | Chlorobenzene | 9.21 | 112 | 9367 | 0.49955 | ppb | | 96 |
| 70) | Ethylbenzene | 9.34 | 91 | 11506 | 0.43787 | ppb | | 93 |
| 71) | Bromoform | 10.02 | 173 | 2730 | 0.50279 | ppb | | 88 |
| 73) | Isopropylbenzene | 10.22 | 105 | 9702 | 0.48895 | ppb | | 90 |
| 74) | 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 4629 | 0.40555 | ppb | # | 94 |
| 75) | 1,2,3-Trichloropropane | 10.55 | 110 | 1047 | 0.51671 | ppb | | 90 |
| 76) | t-1,4-Dichloro-2-Butene | 10.59 | 53 | 719 | 0.57417 | ppb | | 92 |
| 77) | Bromobenzene | 10.49 | 156 | 3448 | 0.51012 | ppb | | 91 |
| 78) | n-Propylbenzene | 10.63 | 91 | 11556 | 0.47597 | ppb | | 99 |
| 79) | 4-Ethyltoluene | 10.75 | 105 | 9976 | 0.46770 | ppb | | 88 |
| 80) | 2-Chlorotoluene | 10.70 | 91 | 7861 | 0.50460 | ppb | | 100 |
| 81) | 1,3,5-Trimethylbenzene | 10.82 | 105 | 8046 | 0.42997 | ppb | | 98 |
| 82) | 4-Chlorotoluene | 10.81 | 91 | 8178 | 0.44151 | ppb | | 89 |
| 83) | Tert-Butylbenzene | 11.13 | 119 | 7297 | 0.48647 | ppb | | 91 |
| 84) | 1,2,4-Trimethylbenzene | 11.18 | 105 | 7819 | 0.43173 | ppb | | 100 |
| 85) | Sec-Butylbenzene | 11.35 | 105 | 9766 | 0.44161 | ppb | | 90 |
| 86) | p-Isopropyltoluene | 11.51 | 119 | 8188 | 0.43158 | ppb | | 94 |
| 87) | Benzyl Chloride | 11.67 | 91 | 4770 | 0.53204 | ppb | | 90 |
| 88) | 1,3-DCB | 11.44 | 146 | 6414 | 0.48890 | ppb | | 97 |
| 89) | 1,4-DCB | 11.53 | 146 | 7033 | 0.49623 | ppb | | 91 |
| 90) | n-Butylbenzene | 11.91 | 91 | 8148 | 0.46539 | ppb | | 90 |
| 91) | 1,2-DCB | 11.89 | 146 | 6703 | 0.52072 | ppb | | 88 |
| 92) | Hexachloroethane | 12.14 | 117 | 2612 | 0.67849 | ppb | | 96 |
| 93) | 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 548 | 0.17693 | ppb | | 93 |
| 94) | 1,2,4-Trichlorobenzene | 13.49 | 180 | 4676 | 0.53625 | ppb | | 92 |
| 95) | Hexachlorobutadiene | 13.68 | 225 | 3061 | 0.58056 | ppb | | 89 |
| 96) | Naphthalene | 13.72 | 128 | 4728 | 0.49199 | ppb | | 93 |
| 97) | 1,2,3-Trichlorobenzene | 13.97 | 180 | 4599 | 0.53411 | ppb | | 95 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

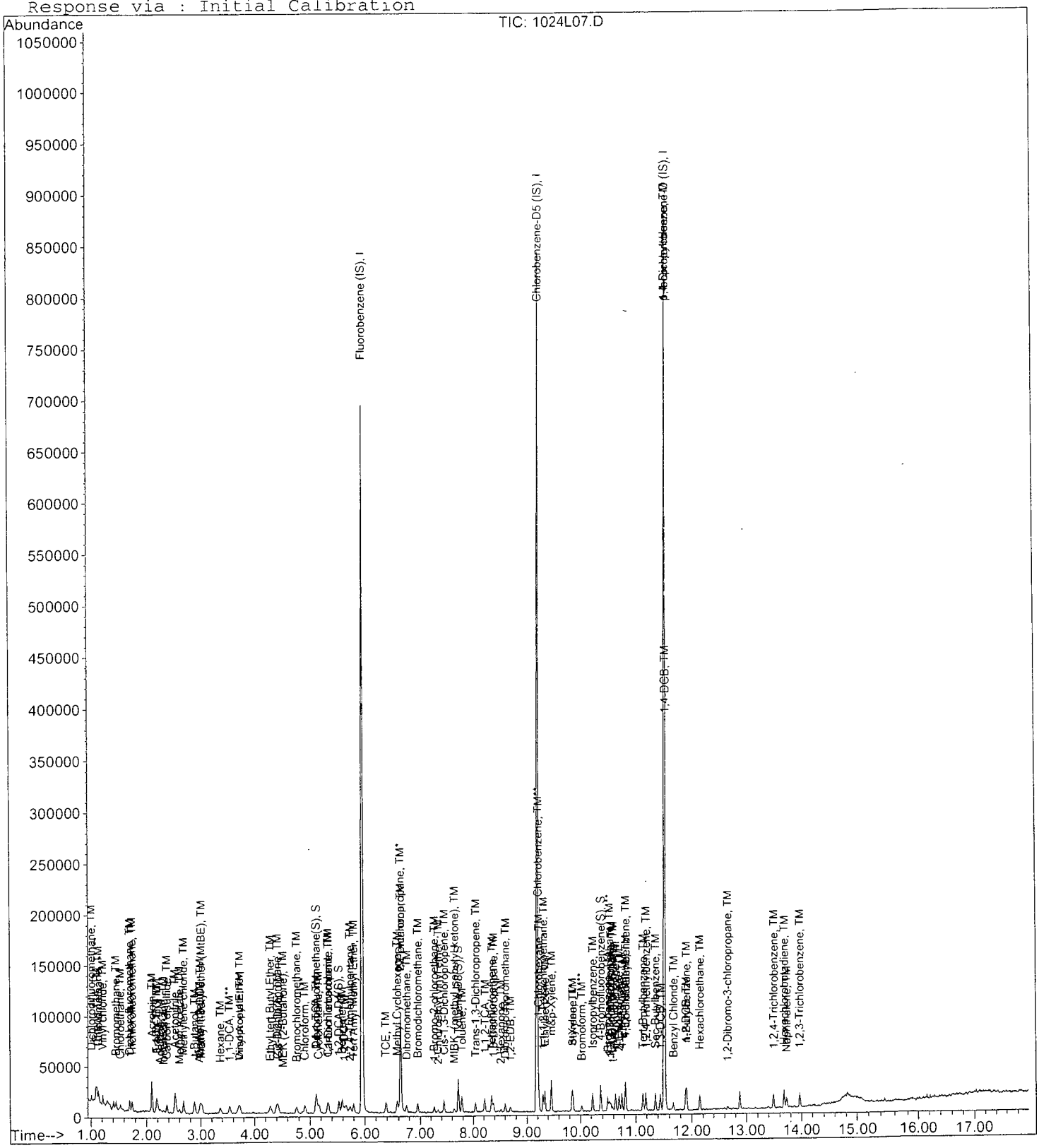
Data File : M:\LOKI\DATA\141024\1024L07.D
Acq On : 24 Oct 14 13:16
Sample : 0.5ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L08.D
Acq On : 24 Oct 14 13:44
Sample : 1.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 324928 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 295232 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 165952 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 15242 | 2.15298 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 7.926% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 16273 | 2.17002 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 7.835% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 39353 | 1.88074 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 7.193% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 13408 | 1.68111 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 7.562% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 5908 | 1.61009 ppb | | 95 |
| 3) Freon 114 | 1.10 | 85 | 4564 | 1.23639 ppb | | 86 |
| 4) Chloromethane | 1.14 | 50 | 11102 | 1.37343 ppb | | 97 |
| 5) Vinyl chloride | 1.21 | 62 | 8790 | 1.09924 ppb | | 99 |
| 6) Bromomethane | 1.45 | 94 | 6575 | 1.15670 ppb | | 95 |
| 7) Chloroethane | 1.53 | 64 | 4822 | 1.09542 ppb | | 97 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 14740 | 1.12923 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 11668 | 1.20218 ppb | | 95 |
| 10) Acrolein | 2.10 | 56 | 40856 | 56.07402 ppb | # | 87 |
| 11) Acetone | 2.25 | 43 | 3347 | 1.00419 ppb | | 84 |
| 12) Freon-113 | 2.20 | 101 | 6637 | 1.18622 ppb | | 85 |
| 13) 1,1-DCE | 2.18 | 61 | 10520 | 1.15606 ppb | | 92 |
| 14) t-Butanol | 2.88 | 59 | 10458 | 52.26710 ppb | | 97 |
| 15) Acetonitrile | 2.52 | 41 | 47693 | 58.26254 ppb | | 91 |
| 16) Methyl Acetate | 2.60 | 43 | 6315 | 0.72503 ppb | # | 82 |
| 17) Iodomethane | 2.31 | 142 | 2194 | 1.10082 ppb | | 90 |
| 18) Acrylonitrile | 2.97 | 52 | 2057 | 1.18452 ppb | | 73 |
| 19) Methylene chloride | 2.67 | 84 | 8793 | 1.00158 ppb | # | 71 |
| 20) Carbon disulfide | 2.36 | 76 | 19209 | 1.56220 ppb | | 95 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 14170 | 0.97934 ppb | | 96 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 7029 | 1.10797 ppb | | 94 |
| 23) Diisopropyl Ether | 3.72 | 45 | 16521 | 0.97349 ppb | # | 93 |
| 24) 1,1-DCA | 3.53 | 63 | 13280 | 1.09641 ppb | | 96 |
| 25) Hexane | 3.36 | 57 | 4880 | 1.02092 ppb | | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 4196 | 1.12035 ppb | # | 97 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 13071 | 0.91358 ppb | | 91 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 2610 | 1.01085 ppb | | 94 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 7089 | 1.02698 ppb | | 96 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 4055 | 1.30354 ppb | # | 86 |
| 31) Chloroform | 4.91 | 83 | 13688 | 1.05740 ppb | | 98 |
| 32) Bromochloromethane | 4.76 | 128 | 4455 | 1.25023 ppb | | 87 |
| 34) 1,1,1-TCA | 5.10 | 97 | 12727 | 1.24880 ppb | | 88 |
| 35) Cyclohexane | 5.17 | 41 | 4631 | 1.08534 ppb | | 84 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 7005 | 0.98063 ppb | | 88 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 11786 | 0.89806 ppb | # | 70 |
| 39) Carbon Tetrachloride | 5.33 | 117 | 8713 | 1.06207 ppb | | 92 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 12800 | 0.90254 ppb | # | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 9716 | 0.98803 ppb | | 95 |
| 42) Benzene | 5.58 | 78 | 24143 | 1.32994 ppb | | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L08.D
Acq On : 24 Oct 14 13:44
Sample : 1.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| | Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|---|
| 43) | TCE | 6.38 | 95 | 7145 | 1.10551 | ppb | | 95 |
| 44) | 2-Pentanone | 6.64 | 43 | 205042 | 49.38519 | ppb | | 99 |
| 45) | 1,2-Dichloropropane | 6.62 | 63 | 8458 | 1.13914 | ppb | # | 86 |
| 46) | Bromodichloromethane | 6.95 | 83 | 10733 | 1.13119 | ppb | # | 97 |
| 47) | Methyl Cyclohexane | 6.57 | 83 | 6582 | 0.91854 | ppb | | 95 |
| 48) | Dibromomethane | 6.74 | 93 | 4795 | 1.08409 | ppb | | 91 |
| 49) | 2-Chloroethyl vinyl ether | 7.33 | 106 | 662 | 1.01087 | ppb | # | 37 |
| 50) | MIBK (methyl isobutyl ket | 7.63 | 43 | 6194 | 1.25535 | ppb | # | 92 |
| 51) | 1-Bromo-2-chloroethane | 7.26 | 63 | 5958 | 1.07481 | ppb | | 99 |
| 52) | Cis-1,3-Dichloropropene | 7.44 | 75 | 10948 | 1.05747 | ppb | | 95 |
| 53) | Toluene | 7.78 | 91 | 22241 | 0.91631 | ppb | | 93 |
| 54) | Trans-1,3-Dichloropropene | 8.04 | 75 | 8899 | 0.98065 | ppb | | 92 |
| 55) | 1,1,2-TCA | 8.22 | 83 | 5857 | 1.11605 | ppb | | 89 |
| 56) | 2-Hexanone | 8.51 | 43 | 3131 | 0.99166 | ppb | | 96 |
| 59) | 1,2-EDB | 8.69 | 107 | 6009 | 0.98998 | ppb | | 82 |
| 60) | Tetrachloroethene | 8.34 | 166 | 9403 | 1.08069 | ppb | | 96 |
| 61) | 1-Chlorohexane | 9.22 | 91 | 5804 | 0.87471 | ppb | | 96 |
| 62) | 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 8022 | 0.99809 | ppb | | 93 |
| 63) | m&p-Xylene | 9.46 | 106 | 16826 | 1.63031 | ppb | | 90 |
| 64) | o-Xylene | 9.84 | 106 | 8772 | 0.90604 | ppb | | 83 |
| 65) | Styrene | 9.86 | 104 | 13584 | 0.88819 | ppb | # | 96 |
| 67) | 1,3-Dichloropropane | 8.38 | 76 | 9735 | 0.96832 | ppb | | 96 |
| 68) | Dibromochloromethane | 8.60 | 129 | 7904 | 1.05199 | ppb | | 96 |
| 69) | Chlorobenzene | 9.21 | 112 | 17667 | 0.94260 | ppb | # | 82 |
| 70) | Ethylbenzene | 9.34 | 91 | 23694 | 0.90208 | ppb | | 95 |
| 71) | Bromoform | 10.03 | 173 | 5999 | 1.10534 | ppb | | 88 |
| 73) | Isopropylbenzene | 10.23 | 105 | 19495 | 0.92603 | ppb | | 98 |
| 74) | 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 8961 | 1.03995 | ppb | | 84 |
| 75) | 1,2,3-Trichloropropane | 10.55 | 110 | 2560 | 1.19080 | ppb | | 88 |
| 76) | t-1,4-Dichloro-2-Butene | 10.59 | 53 | 1280 | 0.96343 | ppb | | 84 |
| 77) | Bromobenzene | 10.50 | 156 | 7281 | 1.01531 | ppb | | 95 |
| 78) | n-Propylbenzene | 10.63 | 91 | 22522 | 0.87433 | ppb | | 93 |
| 79) | 4-Ethyltoluene | 10.75 | 105 | 18559 | 0.82010 | ppb | | 89 |
| 80) | 2-Chlorotoluene | 10.70 | 91 | 14060 | 0.85066 | ppb | | 89 |
| 81) | 1,3,5-Trimethylbenzene | 10.82 | 105 | 15940 | 0.80287 | ppb | | 97 |
| 82) | 4-Chlorotoluene | 10.81 | 91 | 17550 | 0.89304 | ppb | | 96 |
| 83) | Tert-Butylbenzene | 11.13 | 119 | 14379 | 0.90353 | ppb | | 92 |
| 84) | 1,2,4-Trimethylbenzene | 11.18 | 105 | 15858 | 0.82529 | ppb | | 93 |
| 85) | Sec-Butylbenzene | 11.35 | 105 | 20348 | 0.86724 | ppb | | 96 |
| 86) | p-Isopropyltoluene | 11.50 | 119 | 17925 | 0.89052 | ppb | # | 89 |
| 87) | Benzyl Chloride | 11.67 | 91 | 10248 | 1.07736 | ppb | # | 89 |
| 88) | 1,3-DCB | 11.44 | 146 | 13211 | 0.94912 | ppb | | 99 |
| 89) | 1,4-DCB | 11.53 | 146 | 15132 | 1.00633 | ppb | | 88 |
| 90) | n-Butylbenzene | 11.91 | 91 | 16779 | 0.90329 | ppb | | 90 |
| 91) | 1,2-DCB | 11.89 | 146 | 14439 | 1.05724 | ppb | | 96 |
| 92) | Hexachloroethane | 12.14 | 117 | 6259 | 1.48003 | ppb | | 91 |
| 93) | 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 1238 | 0.96415 | ppb | # | 78 |
| 94) | 1,2,4-Trichlorobenzene | 13.49 | 180 | 8774 | 0.94839 | ppb | | 93 |
| 95) | Hexachlorobutadiene | 13.68 | 225 | 6281 | 1.12282 | ppb | | 85 |
| 96) | Naphthalene | 13.72 | 128 | 8881 | 0.87104 | ppb | | 93 |
| 97) | 1,2,3-Trichlorobenzene | 13.97 | 180 | 8784 | 0.96151 | ppb | | 94 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

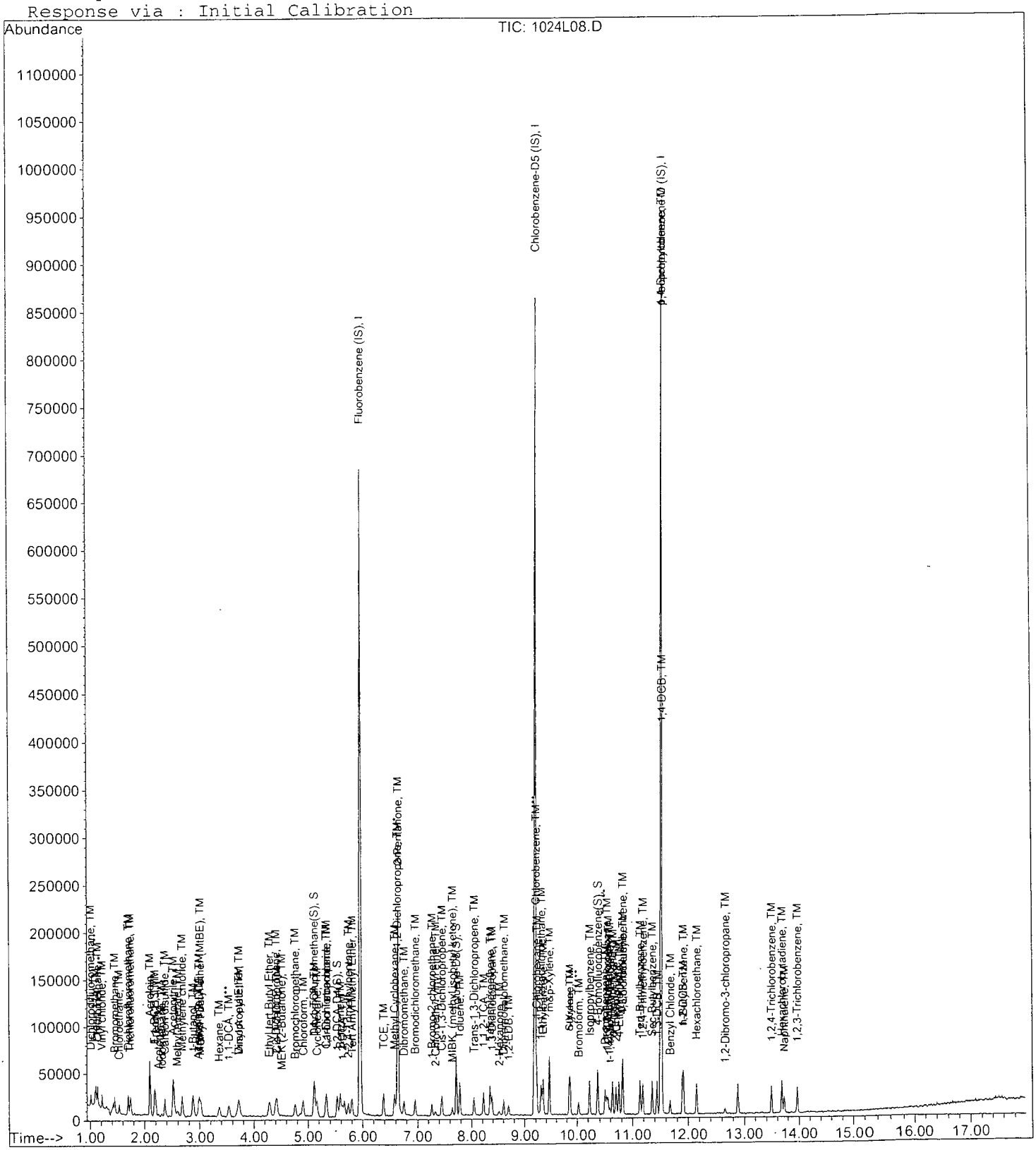
Data File : M:\LOKI\DATA\141024\1024L08.D
Acq On : 24 Oct 14 13:44
Sample : 1.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L09.D
Acq On : 24 Oct 14 14:12
Sample : 5.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 363648 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 308544 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 200320 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 79943 | 10.08984 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 37.144% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 81143 | 9.66837 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 34.908% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 208916 | 9.55363 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 36.535% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 78439 | 9.41044 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 42.328% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 22298 | 4.98502 ppb | 94 |
| 3) Freon 114 | 1.10 | 85 | 18532 | 4.48578 ppb | 93 |
| 4) Chloromethane | 1.14 | 50 | 40042 | 5.30598 ppb | 97 |
| 5) Vinyl chloride | 1.21 | 62 | 36583 | 4.08779 ppb | 98 |
| 6) Bromomethane | 1.45 | 94 | 25489 | 5.13051 ppb | 94 |
| 7) Chloroethane | 1.53 | 64 | 19016 | 5.27556 ppb | 99 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 73699 | 5.04492 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 49593 | 4.56561 ppb | 94 |
| 10) Acrolein | 2.10 | 56 | 81570 | 100.03276 ppb # | 95 |
| 11) Acetone | 2.25 | 43 | 12098 | 5.68212 ppb | 89 |
| 12) Freon-113 | 2.20 | 101 | 30418 | 4.85770 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 46018 | 4.51854 ppb | 97 |
| 14) t-Butanol | 2.88 | 59 | 20272 | 90.52788 ppb | 99 |
| 15) Acetonitrile | 2.52 | 41 | 95445 | 104.18229 ppb | 95 |
| 16) Methyl Acetate | 2.60 | 43 | 32045 | 5.39912 ppb | 96 |
| 17) Iodomethane | 2.31 | 142 | 10158 | 4.55401 ppb | 97 |
| 18) Acrylonitrile | 2.97 | 52 | 9610 | 4.94468 ppb | 88 |
| 19) Methylene chloride | 2.67 | 84 | 41566 | 5.44452 ppb | 98 |
| 20) Carbon disulfide | 2.36 | 76 | 89461 | 5.58229 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 75946 | 4.69001 ppb | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 33887 | 4.77281 ppb | 96 |
| 23) Diisopropyl Ether | 3.71 | 45 | 81850 | 4.30945 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 65962 | 4.86604 ppb | 97 |
| 25) Hexane | 3.36 | 57 | 21861 | 4.08645 ppb # | 97 |
| 26) Vinyl Acetate | 3.71 | 43 | 19528 | 4.65889 ppb # | 98 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 75430 | 4.71073 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 14051 | 5.49070 ppb | 87 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 35829 | 4.63786 ppb | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 17600 | 5.33876 ppb | 98 |
| 31) Chloroform | 4.90 | 83 | 70107 | 4.83912 ppb | 94 |
| 32) Bromochloromethane | 4.75 | 128 | 20714 | 5.19411 ppb | 96 |
| 34) 1,1,1-TCA | 5.10 | 97 | 58343 | 5.11520 ppb | 100 |
| 35) Cyclohexane | 5.16 | 41 | 21473 | 4.49667 ppb | 88 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 37438 | 4.68293 ppb | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 62913 | 4.28335 ppb | 95 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 47875 | 5.21436 ppb | 98 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 73698 | 4.64320 ppb # | 95 |
| 41) 1,2-DCA | 5.62 | 62 | 51085 | 5.39815 ppb | 97 |
| 42) Benzene | 5.58 | 78 | 130596 | 5.14682 ppb | 100 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L09.D
Acq On : 24 Oct 14 14:12
Sample : 5.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 35702 | 4.93583 | ppb | | 94 |
| 44) 2-Pentanone | 6.63 | 43 | 455993 | 98.13366 | ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 39822 | 4.79225 | ppb | # | 96 |
| 46) Bromodichloromethane | 6.95 | 83 | 53847 | 5.07087 | ppb | | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 33448 | 4.17077 | ppb | | 96 |
| 48) Dibromomethane | 6.75 | 93 | 25442 | 5.13966 | ppb | | 97 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 3508 | 4.78634 | ppb | # | 51 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 25943 | 4.69805 | ppb | | 100 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 29328 | 4.72738 | ppb | | 96 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 51878 | 4.47736 | ppb | | 95 |
| 53) Toluene | 7.78 | 91 | 131931 | 4.85671 | ppb | | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 47937 | 4.72007 | ppb | | 96 |
| 55) 1,1,2-TCA | 8.21 | 83 | 29559 | 5.03274 | ppb | | 96 |
| 56) 2-Hexanone | 8.51 | 43 | 16923 | 4.78922 | ppb | | 94 |
| 59) 1,2-EDB | 8.69 | 107 | 32831 | 5.17551 | ppb | | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 44183 | 4.85888 | ppb | | 95 |
| 61) 1-Chlorohexane | 9.22 | 91 | 31806 | 4.58664 | ppb | | 97 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 43658 | 5.19755 | ppb | | 96 |
| 63) m&p-Xylene | 9.46 | 106 | 104356 | 9.67504 | ppb | | 98 |
| 64) o-Xylene | 9.85 | 106 | 47808 | 4.72494 | ppb | | 100 |
| 65) Styrene | 9.86 | 104 | 81050 | 5.07083 | ppb | | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 55129 | 5.24700 | ppb | | 93 |
| 68) Dibromochloromethane | 8.60 | 129 | 41998 | 5.34860 | ppb | | 99 |
| 69) Chlorobenzene | 9.21 | 112 | 100193 | 5.11506 | ppb | | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 134211 | 4.88922 | ppb | | 98 |
| 71) Bromoform | 10.02 | 173 | 31006 | 5.46649 | ppb | | 99 |
| 73) Isopropylbenzene | 10.23 | 105 | 119443 | 4.70022 | ppb | | 96 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 46540 | 5.67591 | ppb | | 91 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 13654 | 5.26160 | ppb | | 86 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 7512 | 4.68406 | ppb | | 98 |
| 77) Bromobenzene | 10.50 | 156 | 44379 | 5.12674 | ppb | | 99 |
| 78) n-Propylbenzene | 10.63 | 91 | 141780 | 4.55975 | ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 123639 | 4.52611 | ppb | | 96 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 94209 | 4.72194 | ppb | | 96 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 115248 | 4.80896 | ppb | | 96 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 118744 | 5.00568 | ppb | | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 91873 | 4.78254 | ppb | | 97 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 106855 | 4.60693 | ppb | | 96 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 132752 | 4.68725 | ppb | | 99 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 118676 | 4.88432 | ppb | | 96 |
| 87) Benzyl Chloride | 11.67 | 91 | 56667 | 4.93528 | ppb | | 98 |
| 88) 1,3-DCB | 11.44 | 146 | 88350 | 5.25838 | ppb | | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 96202 | 5.30014 | ppb | | 99 |
| 90) n-Butylbenzene | 11.91 | 91 | 103016 | 4.59437 | ppb | | 100 |
| 91) 1,2-DCB | 11.89 | 146 | 84662 | 5.13550 | ppb | | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 29889 | 5.73210 | ppb | | 93 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 5972 | 5.41155 | ppb | | 95 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 50506 | 4.52261 | ppb | | 95 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 34630 | 5.12853 | ppb | | 95 |
| 96) Naphthalene | 13.72 | 128 | 57752 | 4.69245 | ppb | | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 49658 | 4.50308 | ppb | | 94 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

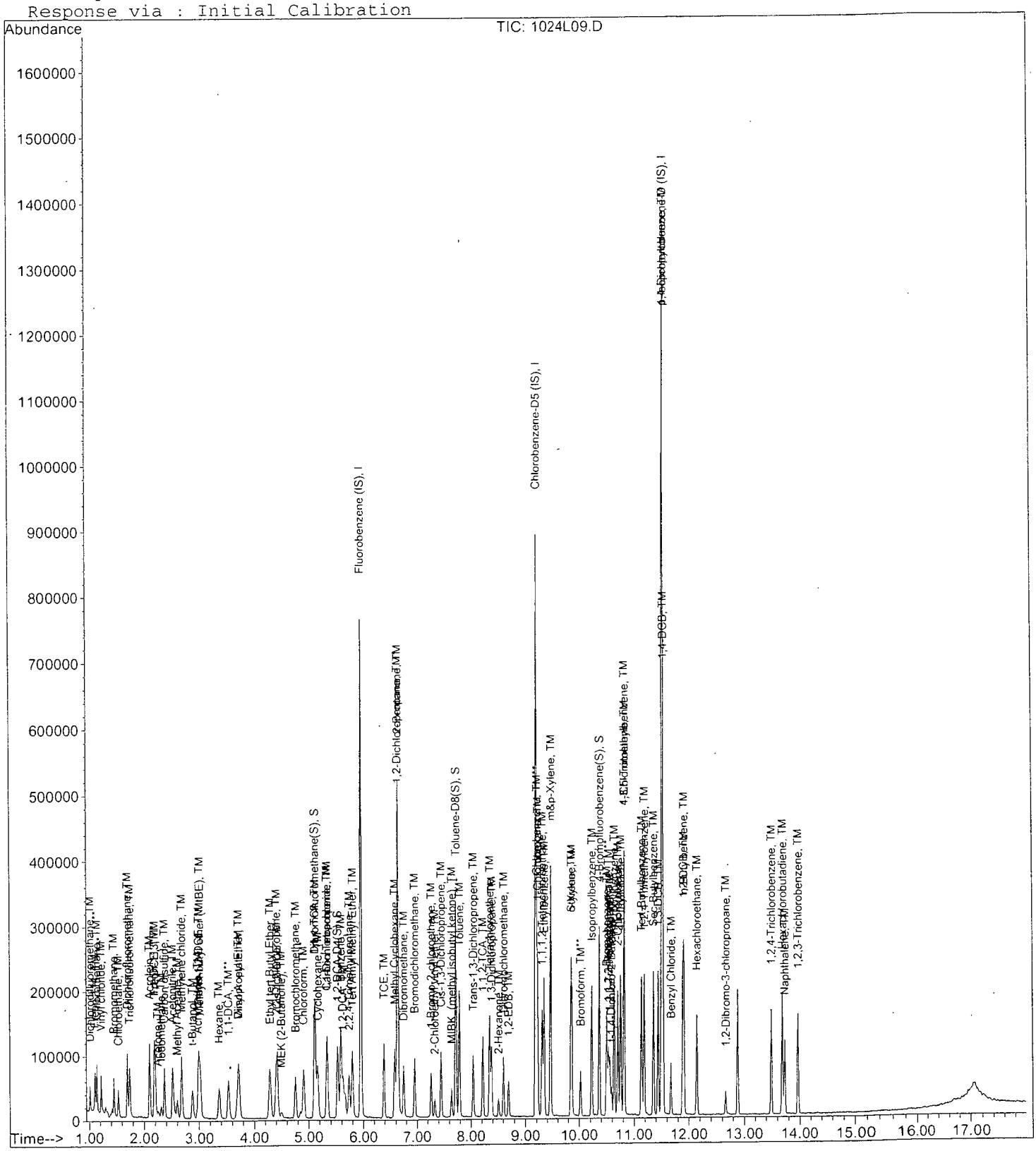
Data File : M:\LOKI\DATA\141024\1024L09.D
Acq On : 24 Oct 14 14:12
Sample : 5.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L10.D
Acq On : 24 Oct 14 14:41
Sample : 10ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 389312 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 329920 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 225088 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 200030 | 23.58209 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 86.811% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 213255 | 23.73475 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 85.700% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 606847 | 25.95281 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 99.246% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 235657 | 26.44033 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 118.933% | |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.01 | 85 | 47382 | 9.70995 ppb | 100 |
| 3) Freon 114 | 1.10 | 85 | 39788 | 8.99604 ppb | 100 |
| 4) Chloromethane | 1.14 | 50 | 79794 | 10.21748 ppb | 100 |
| 5) Vinyl chloride | 1.21 | 62 | 76161 | 7.94923 ppb | 100 |
| 6) Bromomethane | 1.44 | 94 | 50720 | 9.92776 ppb | 100 |
| 7) Chloroethane | 1.53 | 64 | 37216 | 10.10862 ppb | 100 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 146492 | 9.36677 ppb | 100 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 106683 | 9.17396 ppb | 100 |
| 10) Acrolein | 2.10 | 56 | 107276 | 122.88469 ppb | 100 |
| 11) Acetone | 2.25 | 43 | 22731 | 10.79825 ppb | 100 |
| 12) Freon-113 | 2.20 | 101 | 60285 | 8.99276 ppb | 100 |
| 13) 1,1-DCE | 2.18 | 61 | 98975 | 9.07778 ppb | 100 |
| 14) t-Butanol | 2.87 | 59 | 28496 | 118.86474 ppb | 100 |
| 15) Acetonitrile | 2.52 | 41 | 117988 | 120.29899 ppb | 100 |
| 16) Methyl Acetate | 2.60 | 43 | 64492 | 10.67542 ppb | 100 |
| 17) Iodomethane | 2.31 | 142 | 21400 | 8.96155 ppb | 100 |
| 18) Acrylonitrile | 2.97 | 52 | 18992 | 9.12785 ppb | 100 |
| 19) Methylene chloride | 2.67 | 84 | 83670 | 10.56852 ppb | 100 |
| 20) Carbon disulfide | 2.36 | 76 | 179100 | 10.18618 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 159872 | 9.22199 ppb | 100 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 67064 | 8.82296 ppb | 100 |
| 23) Diisopropyl Ether | 3.71 | 45 | 187660 | 9.22908 ppb | 100 |
| 24) 1,1-DCA | 3.53 | 63 | 134789 | 9.28794 ppb | 100 |
| 25) Hexane | 3.36 | 57 | 50710 | 8.85429 ppb | 100 |
| 26) Vinyl Acetate | 3.71 | 43 | 41640 | 9.27937 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 160384 | 9.35595 ppb | 100 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 28566 | 10.57507 ppb | 100 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 77981 | 9.42878 ppb | 100 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 36176 | 10.34078 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 138104 | 8.90420 ppb | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 41625 | 9.74956 ppb | 100 |
| 34) 1,1,1-TCA | 5.10 | 97 | 115841 | 9.48680 ppb | 100 |
| 35) Cyclohexane | 5.16 | 41 | 45902 | 8.97869 ppb | 100 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 82854 | 9.68059 ppb | 100 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 150636 | 9.57977 ppb | 100 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 99874 | 10.16081 ppb | 100 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 168641 | 9.92448 ppb | 100 |
| 41) 1,2-DCA | 5.62 | 62 | 105999 | 10.65442 ppb | 100 |
| 42) Benzene | 5.58 | 78 | 277473 | 9.88533 ppb | 100 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L10.D
Acq On : 24 Oct 14 14:41
Sample : 10ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 74854 | 9.66643 | ppb | 100 |
| 44) 2-Pentanone | 6.63 | 43 | 623814 | 125.40024 | ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 79705 | 8.95953 | ppb | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 106770 | 9.39190 | ppb | 100 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 75611 | 8.80673 | ppb | 100 |
| 48) Dibromomethane | 6.75 | 93 | 51278 | 9.67604 | ppb | 100 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 6292 | 8.01893 | ppb | 100 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 51978 | 8.79227 | ppb | 100 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 62160 | 9.35906 | ppb | 100 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 111511 | 8.98960 | ppb | 100 |
| 53) Toluene | 7.78 | 91 | 298493 | 10.26391 | ppb | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 99332 | 9.13588 | ppb | 100 |
| 55) 1,1,2-TCA | 8.21 | 83 | 59472 | 9.45824 | ppb | 100 |
| 56) 2-Hexanone | 8.50 | 43 | 33386 | 8.82542 | ppb | 100 |
| 59) 1,2-EDB | 8.69 | 107 | 67800 | 9.99557 | ppb | 100 |
| 60) Tetrachloroethene | 8.34 | 166 | 94607 | 9.72999 | ppb | 100 |
| 61) 1-Chlorohexane | 9.22 | 91 | 69330 | 9.35007 | ppb | 100 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 88112 | 9.81021 | ppb | 100 |
| 63) m&p-Xylene | 9.46 | 106 | 244095 | 21.16423 | ppb | 100 |
| 64) o-Xylene | 9.85 | 106 | 110715 | 10.23318 | ppb | 100 |
| 65) Styrene | 9.86 | 104 | 196730 | 11.51079 | ppb | 100 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 114058 | 10.15232 | ppb | 100 |
| 68) Dibromochloromethane | 8.60 | 129 | 85617 | 10.19718 | ppb | 100 |
| 69) Chlorobenzene | 9.21 | 112 | 211163 | 10.08183 | ppb | 100 |
| 70) Ethylbenzene | 9.34 | 91 | 304196 | 10.36367 | ppb | 100 |
| 71) Bromoform | 10.02 | 173 | 63247 | 10.42824 | ppb | 100 |
| 73) Isopropylbenzene | 10.22 | 105 | 259151 | 9.07575 | ppb | 100 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 93196 | 10.39983 | ppb | 100 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 28255 | 9.69003 | ppb | 100 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 18313 | 10.16245 | ppb | 100 |
| 77) Bromobenzene | 10.49 | 156 | 95934 | 9.86298 | ppb | 100 |
| 78) n-Propylbenzene | 10.63 | 91 | 339693 | 9.72265 | ppb | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 307221 | 10.00904 | ppb | 100 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 225832 | 10.07362 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 288244 | 10.70409 | ppb | 100 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 279352 | 10.48034 | ppb | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 203064 | 9.40752 | ppb | 100 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 260036 | 9.97752 | ppb | 100 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 316493 | 9.94519 | ppb | 100 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 268893 | 9.84900 | ppb | 100 |
| 87) Benzyl Chloride | 11.67 | 91 | 119641 | 9.27329 | ppb | 100 |
| 88) 1,3-DCB | 11.44 | 146 | 188321 | 9.97507 | ppb | 100 |
| 89) 1,4-DCB | 11.53 | 146 | 199125 | 9.76341 | ppb | 100 |
| 90) n-Butylbenzene | 11.91 | 91 | 241590 | 9.58897 | ppb | 100 |
| 91) 1,2-DCB | 11.89 | 146 | 172076 | 9.28937 | ppb | 100 |
| 92) Hexachloroethane | 12.14 | 117 | 61656 | 10.48845 | ppb | 100 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 11878 | 9.97950 | ppb | 100 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 108949 | 8.68244 | ppb | 100 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 70391 | 9.27747 | ppb | 100 |
| 96) Naphthalene | 13.72 | 128 | 127208 | 9.19855 | ppb | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 112084 | 9.04558 | ppb | 100 |

(#) = qualifier out of range (m) = manual integration

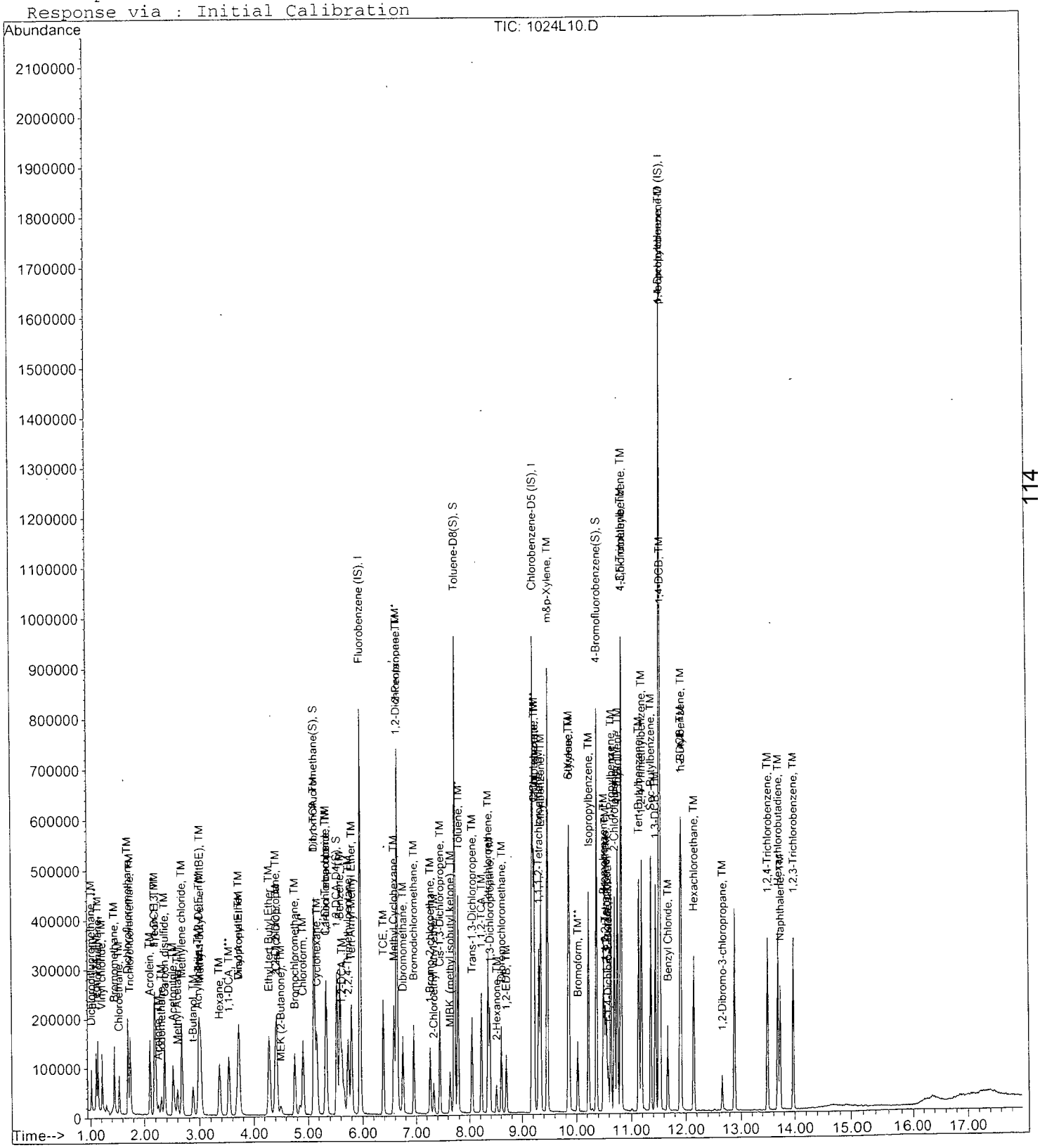
Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L10.D
Acq On : 24 Oct 14 14:41
Sample : 10ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L11.D
Acq On : 24 Oct 14 15:09
Sample : 20ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 423488 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 363136 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 248000 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 332363 | 36.02106 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 132.601% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 345862 | 35.38711 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 127.773% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 1063658 | 41.32820 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 158.040% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 420905 | 42.90520 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 192.996% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 107916 | 20.12535 ppb | 94 |
| 3) Freon 114 | 1.10 | 85 | 83055 | 17.26322 ppb | 99 |
| 4) Chloromethane | 1.14 | 50 | 162541 | 19.47887 ppb | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 159785 | 15.33151 ppb | 98 |
| 6) Bromomethane | 1.44 | 94 | 97171 | 17.83220 ppb | 97 |
| 7) Chloroethane | 1.53 | 64 | 76804 | 19.68123 ppb | 93 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 284812 | 16.74137 ppb | 95 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 224845 | 17.77467 ppb | 98 |
| 10) Acrolein | 2.10 | 56 | 133758 | 140.85480 ppb | 93 |
| 11) Acetone | 2.25 | 43 | 42580 | 19.38481 ppb | 96 |
| 12) Freon-113 | 2.20 | 101 | 126371 | 17.32957 ppb | 95 |
| 13) 1,1-DCE | 2.18 | 61 | 202921 | 17.10952 ppb | 98 |
| 14) t-Butanol | 2.88 | 59 | 35056 | 134.42752 ppb | 96 |
| 15) Acetonitrile | 2.52 | 41 | 143899 | 134.87721 ppb | 92 |
| 16) Methyl Acetate | 2.60 | 43 | 128305 | 20.01978 ppb | 98 |
| 17) Iodomethane | 2.31 | 142 | 47648 | 18.34301 ppb | 96 |
| 18) Acrylonitrile | 2.97 | 52 | 39902 | 17.62987 ppb | 92 |
| 19) Methylene chloride | 2.67 | 84 | 158553 | 18.69036 ppb | 96 |
| 20) Carbon disulfide | 2.36 | 76 | 358837 | 18.51697 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 341621 | 18.11563 ppb | 99 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 137757 | 16.66077 ppb | 97 |
| 23) Diisopropyl Ether | 3.72 | 45 | 412993 | 18.67180 ppb | 93 |
| 24) 1,1-DCA | 3.53 | 63 | 270752 | 17.15116 ppb | 98 |
| 25) Hexane | 3.36 | 57 | 110073 | 17.66841 ppb | 97 |
| 26) Vinyl Acetate | 3.71 | 43 | 84876 | 17.38800 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 352823 | 18.92085 ppb | 97 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 52221 | 17.88417 ppb | 93 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 165237 | 18.36667 ppb | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 71999 | 19.00145 ppb | 96 |
| 31) Chloroform | 4.91 | 83 | 271413 | 16.08704 ppb | 99 |
| 32) Bromochloromethane | 4.76 | 128 | 81642 | 17.57929 ppb | 100 |
| 34) 1,1,1-TCA | 5.11 | 97 | 233171 | 17.55451 ppb | 99 |
| 35) Cyclohexane | 5.17 | 41 | 99145 | 17.82825 ppb | 97 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 178787 | 19.20353 ppb | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 341331 | 19.95533 ppb # | 87 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 204666 | 19.14160 ppb | 98 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 363843 | 19.68409 ppb | 98 |
| 41) 1,2-DCA | 5.62 | 62 | 206847 | 19.27560 ppb | 94 |
| 42) Benzene | 5.58 | 78 | 575501 | 18.54530 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L11.D
Acq On : 24 Oct 14 15:09
Sample : 20ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 147496 | 17.51008 | ppb | 93 |
| 44) 2-Pentanone | 6.63 | 43 | 810243 | 149.73220 | ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 162962 | 16.84002 | ppb | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 206503 | 16.69887 | ppb | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 174412 | 18.67509 | ppb | 97 |
| 48) Dibromomethane | 6.75 | 93 | 97533 | 16.91901 | ppb | 97 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 15546 | 18.21391 | ppb | 82 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 112865 | 17.55081 | ppb | 96 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 121248 | 16.78234 | ppb | 100 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 232231 | 17.21074 | ppb | 96 |
| 53) Toluene | 7.78 | 91 | 633135 | 20.01390 | ppb | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 204144 | 17.26055 | ppb | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 115896 | 16.94427 | ppb | 99 |
| 56) 2-Hexanone | 8.50 | 43 | 75222 | 18.27985 | ppb | 92 |
| 59) 1,2-EDB | 8.69 | 107 | 135222 | 18.11192 | ppb | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 186005 | 17.38014 | ppb | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 160887 | 19.71305 | ppb | 92 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 173827 | 17.58327 | ppb | 94 |
| 63) m&p-Xylene | 9.46 | 106 | 541422 | 42.64999 | ppb | 96 |
| 64) o-Xylene | 9.85 | 106 | 244069 | 20.49539 | ppb | 97 |
| 65) Styrene | 9.86 | 104 | 448346 | 23.83346 | ppb | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 225496 | 18.23551 | ppb | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 174498 | 18.88208 | ppb | 98 |
| 69) Chlorobenzene | 9.21 | 112 | 423758 | 18.38141 | ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 666722 | 20.63690 | ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 125221 | 18.75804 | ppb | 95 |
| 73) Isopropylbenzene | 10.23 | 105 | 593458 | 18.86342 | ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 182174 | 18.73246 | ppb | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 57474 | 17.88965 | ppb | 96 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 34815 | 17.53501 | ppb | 95 |
| 77) Bromobenzene | 10.49 | 156 | 199979 | 18.66040 | ppb | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 769113 | 19.97970 | ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 703050 | 20.78875 | ppb | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 489636 | 19.82322 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 624420 | 21.04587 | ppb | 95 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 598641 | 20.38406 | ppb | 98 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 453143 | 19.05365 | ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 604853 | 21.06394 | ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 703296 | 20.05801 | ppb | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 620880 | 20.64054 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 241646 | 16.99941 | ppb | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 390441 | 18.77038 | ppb | 96 |
| 89) 1,4-DCB | 11.53 | 146 | 410308 | 18.25939 | ppb | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 538677 | 19.40537 | ppb | 96 |
| 91) 1,2-DCB | 11.89 | 146 | 363212 | 17.79618 | ppb | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 120014 | 18.49780 | ppb | 93 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 25600 | 20.01850 | ppb | 87 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 228074 | 16.49661 | ppb | 95 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 139943 | 16.74034 | ppb | 94 |
| 96) Naphthalene | 13.72 | 128 | 285952 | 18.76717 | ppb | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 236546 | 17.32643 | ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

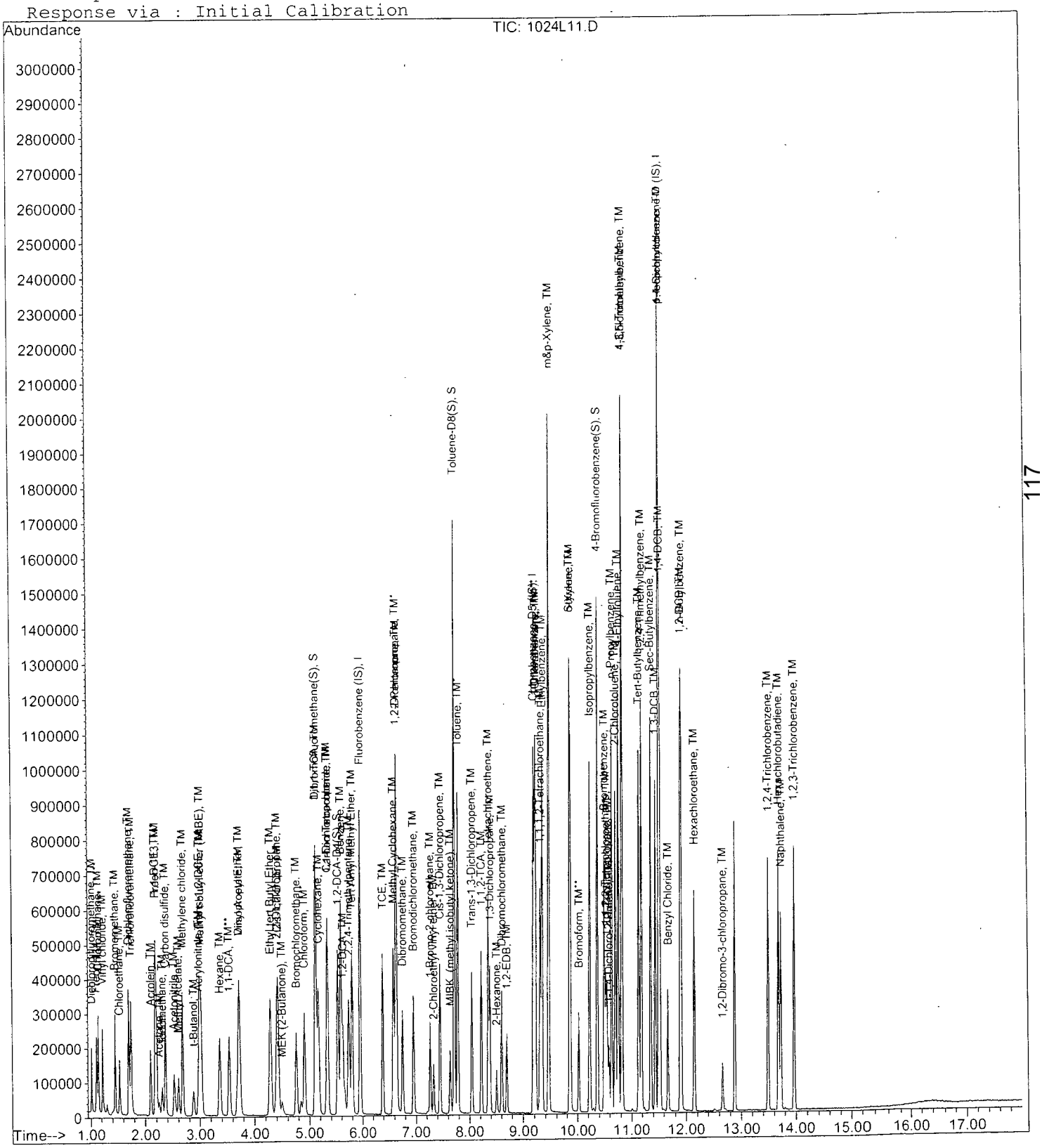
Data File : M:\LOKI\DATA\141024\1024L11.D
Acq On : 24 Oct 14 15:09
Sample : 20ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L12.D
Acq On : 24 Oct 14 15:37
Sample : 40ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 419648 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 366784 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 246336 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 643513 | 70.38128 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 259.088% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 679334 | 70.14254 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 253.267% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 2235138 | 85.98204 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 328.799% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 886475 | 89.46461 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 402.434% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 202327 | 37.91019 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 175330 | 36.77632 ppb | 97 |
| 4) Chloromethane | 1.14 | 50 | 322432 | 39.39031 ppb | 98 |
| 5) Vinyl chloride | 1.22 | 62 | 316941 | 30.68904 ppb | 98 |
| 6) Bromomethane | 1.44 | 94 | 188291 | 35.30595 ppb | 100 |
| 7) Chloroethane | 1.52 | 64 | 152874 | 40.09864 ppb | 93 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 617525 | 36.63052 ppb | 97 |
| 9) Trichlorofluoromethane | 1.73 | 101 | 462405 | 36.88900 ppb | 99 |
| 10) Acrolein | 2.10 | 56 | 144994 | 154.08411 ppb # | 93 |
| 11) Acetone | 2.25 | 43 | 80621 | 38.03522 ppb | 98 |
| 12) Freon-113 | 2.19 | 101 | 270007 | 37.36555 ppb | 97 |
| 13) 1,1-DCE | 2.18 | 61 | 420381 | 35.76926 ppb | 94 |
| 14) t-Butanol | 2.89 | 59 | 42152 | 163.11728 ppb | 98 |
| 15) Acetonitrile | 2.52 | 41 | 147368 | 139.39267 ppb | 89 |
| 16) Methyl Acetate | 2.60 | 43 | 249024 | 39.78427 ppb | 98 |
| 17) Iodomethane | 2.30 | 142 | 109416 | 42.50721 ppb | 100 |
| 18) Acrylonitrile | 2.96 | 52 | 85379 | 38.06813 ppb | 92 |
| 19) Methylene chloride | 2.67 | 84 | 335831 | 40.37862 ppb | 96 |
| 20) Carbon disulfide | 2.36 | 76 | 756304 | 39.05703 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 772883 | 41.35982 ppb | 98 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 294308 | 35.92026 ppb | 97 |
| 23) Diisopropyl Ether | 3.71 | 45 | 965157 | 44.03493 ppb | 92 |
| 24) 1,1-DCA | 3.53 | 63 | 559018 | 35.73580 ppb | 98 |
| 25) Hexane | 3.36 | 57 | 265032 | 42.93098 ppb | 91 |
| 26) Vinyl Acetate | 3.71 | 43 | 186549 | 38.56680 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 824317 | 44.61018 ppb | 98 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 117863 | 40.94466 ppb | 98 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 355596 | 39.88742 ppb | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 148416 | 39.63364 ppb | 96 |
| 31) Chloroform | 4.90 | 83 | 569748 | 34.07880 ppb | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 162291 | 35.26452 ppb | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 484394 | 36.80178 ppb | 99 |
| 35) Cyclohexane | 5.16 | 41 | 239294 | 43.42360 ppb | 100 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 392336 | 42.52645 ppb | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 749001 | 44.18975 ppb # | 89 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 449017 | 42.37905 ppb | 99 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 817029 | 44.60615 ppb | 94 |
| 41) 1,2-DCA | 5.62 | 62 | 421965 | 39.89832 ppb | 98 |
| 42) Benzene | 5.58 | 78 | 1226253 | 39.49268 ppb | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L12.D
Acq On : 24 Oct 14 15:37
Sample : 40ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 319899 | 38.32452 | ppb | 95 |
| 44) 2-Pentanone | 6.63 | 43 | 1014403 | 189.17615 | ppb | 98 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 357044 | 37.23350 | ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 448927 | 36.63468 | ppb | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 416804 | 45.03750 | ppb | 95 |
| 48) Dibromomethane | 6.75 | 93 | 206915 | 36.22191 | ppb | 94 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 35247 | 41.67375 | ppb | 95 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 244280 | 38.33380 | ppb | 97 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 267264 | 37.33140 | ppb | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 528032 | 39.49075 | ppb | 95 |
| 53) Toluene | 7.78 | 91 | 1379210 | 43.99686 | ppb | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 457845 | 39.06541 | ppb | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 247503 | 36.51665 | ppb | 98 |
| 56) 2-Hexanone | 8.50 | 43 | 164406 | 40.31823 | ppb | 93 |
| 59) 1,2-EDB | 8.69 | 107 | 296007 | 39.25348 | ppb | 95 |
| 60) Tetrachloroethene | 8.34 | 166 | 379634 | 35.11984 | ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 390431 | 47.36267 | ppb | 91 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 362844 | 36.33802 | ppb | 94 |
| 63) m&p-Xylene | 9.46 | 106 | 1202949 | 93.81864 | ppb | 96 |
| 64) o-Xylene | 9.85 | 106 | 552117 | 45.90222 | ppb | 97 |
| 65) Styrene | 9.86 | 104 | 1017870 | 53.57041 | ppb | 100 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 497162 | 39.80484 | ppb | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 365224 | 39.12709 | ppb | 99 |
| 69) Chlorobenzene | 9.21 | 112 | 921644 | 39.58067 | ppb | 97 |
| 70) Ethylbenzene | 9.34 | 91 | 1511890 | 46.33175 | ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 256270 | 38.00729 | ppb | 94 |
| 73) Isopropylbenzene | 10.23 | 105 | 1385171 | 44.32590 | ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 383528 | 40.11081 | ppb | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 119373 | 37.40764 | ppb | 94 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 79710 | 40.41812 | ppb | 94 |
| 77) Bromobenzene | 10.49 | 156 | 420428 | 39.49589 | ppb | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 1759068 | 46.00502 | ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 1565615 | 46.60697 | ppb | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 1076232 | 43.86625 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 1355063 | 45.98046 | ppb | 95 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 1277007 | 43.77652 | ppb | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 1054924 | 44.65683 | ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 1366317 | 47.90326 | ppb | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 1580211 | 45.37207 | ppb | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 1385087 | 46.35689 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 497080 | 35.20500 | ppb | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 803976 | 38.91210 | ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 829457 | 37.16155 | ppb | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 1310935 | 47.54431 | ppb | 96 |
| 91) 1,2-DCB | 11.89 | 146 | 752590 | 37.12349 | ppb | 99 |
| 92) Hexachloroethane | 12.15 | 117 | 249706 | 38.70170 | ppb | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 50104 | 39.94937 | ppb | 95 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 545532 | 39.72492 | ppb | 98 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 301028 | 36.25298 | ppb | 96 |
| 96) Naphthalene | 13.72 | 128 | 775616 | 51.24791 | ppb | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 578634 | 42.66985 | ppb | 95 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

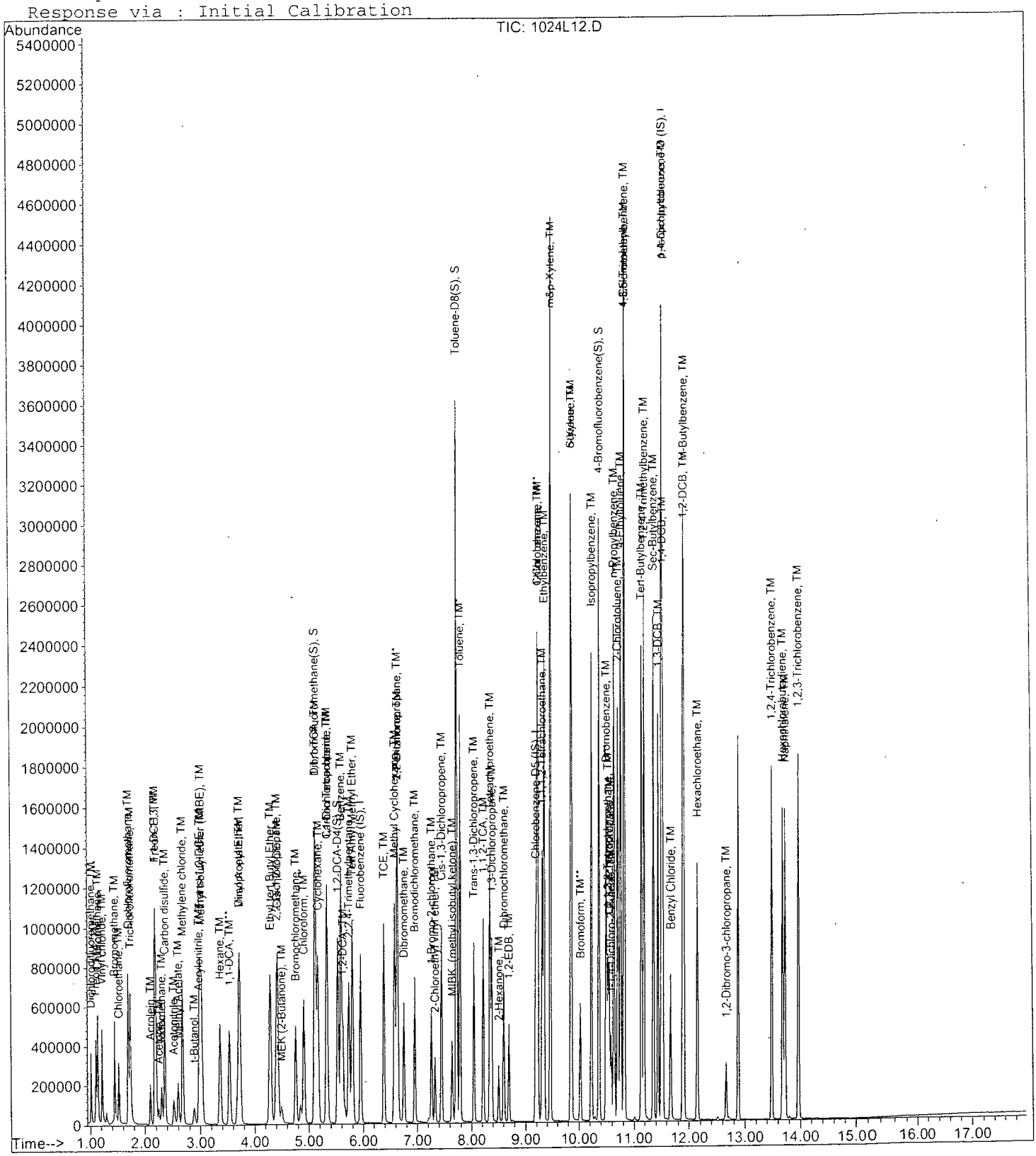
Data File : M:\LOKI\DATA\141024\1024L12.D
Acq On : 24 Oct 14 15:37
Sample : 40ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L13.D
Acq On : 24 Oct 14 16:05
Sample : 100ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 422272 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 373568 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 259840 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 822405 | 89.38784 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 329.057% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 873744 | 89.65515 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 323.719% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 2872279 | 108.48526 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 414.852% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 1170260 | 115.95990 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 521.614% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 543180 | 100.83098 ppb | | 98 |
| 3) Freon 114 | 1.10 | 85 | 465641 | 97.06355 ppb | | 94 |
| 4) Chloromethane | 1.13 | 50 | 821216 | 100.30755 ppb | | 100 |
| 5) Vinyl chloride | 1.22 | 62 | 820847 | 78.98778 ppb | | 96 |
| 6) Bromomethane | 1.44 | 94 | 448832 | 84.26073 ppb | | 97 |
| 7) Chloroethane | 1.52 | 64 | 293651 | 77.05548 ppb | | 95 |
| 8) Dichlorofluoromethane | 1.69 | 67 | 1544246 | 91.03280 ppb | | 97 |
| 9) Trichlorofluoromethane | 1.72 | 101 | 1177668 | 93.36629 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 181613 | 191.79957 ppb | # | 97 |
| 11) Acetone | 2.26 | 43 | 211240 | 100.79347 ppb | | 99 |
| 12) Freon-113 | 2.19 | 101 | 689106 | 94.77097 ppb | | 98 |
| 13) 1,1-DCE | 2.17 | 61 | 1121109 | 94.79983 ppb | | 99 |
| 14) t-Butanol | 2.91 | 59 | 46287 | 178.00561 ppb | | 96 |
| 15) Acetonitrile | 2.53 | 41 | 200736 | 188.69261 ppb | | 92 |
| 16) Methyl Acetate | 2.60 | 43 | 721054 | 115.60221 ppb | | 99 |
| 17) Iodomethane | 2.30 | 142 | 278528 | 107.53343 ppb | | 98 |
| 18) Acrylonitrile | 2.97 | 52 | 213404 | 94.55966 ppb | | 94 |
| 19) Methylene chloride | 2.67 | 84 | 832560 | 100.03196 ppb | | 95 |
| 20) Carbon disulfide | 2.35 | 76 | 1969551 | 100.61805 ppb | | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 2106933 | 112.04912 ppb | | 96 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 791352 | 95.98426 ppb | | 94 |
| 23) Diisopropyl Ether | 3.72 | 45 | 2607623 | 118.23255 ppb | | 88 |
| 24) 1,1-DCA | 3.53 | 63 | 1397389 | 88.77443 ppb | | 98 |
| 25) Hexane | 3.36 | 57 | 785998 | 126.52806 ppb | | 88 |
| 26) Vinyl Acetate | 3.72 | 43 | 473326 | 97.24647 ppb | # | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 2266362 | 121.88826 ppb | | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 288865 | 99.96249 ppb | | 98 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 920086 | 102.56529 ppb | | 99 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 377344 | 100.29171 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 1399239 | 83.17374 ppb | | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 421537 | 91.02741 ppb | | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 1227034 | 92.64449 ppb | | 99 |
| 35) Cyclohexane | 5.16 | 41 | 580209 | 104.63363 ppb | | 88 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 1024001 | 110.30476 ppb | | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 2231134 | 130.81504 ppb | | 96 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 1131153 | 106.09690 ppb | | 100 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 2190221 | 118.83328 ppb | # | 90 |
| 41) 1,2-DCA | 5.62 | 62 | 1062024 | 100.10127 ppb | | 96 |
| 42) Benzene | 5.58 | 78 | 3156050 | 100.49144 ppb | | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L13.D
Acq On : 24 Oct 14 16:05
Sample : 100ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 832256 | 99.08632 | ppb | 95 |
| 44) 2-Pentanone | 6.64 | 43 | 1159629 | 214.91553 | ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 877465 | 90.93577 | ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 1114801 | 90.40802 | ppb | 99 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 1197881 | 128.63197 | ppb | 91 |
| 48) Dibromomethane | 6.75 | 93 | 485386 | 84.44218 | ppb | 95 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 108104 | 127.02086 | ppb | 91 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 682367 | 106.41548 | ppb | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 679872 | 94.37432 | ppb | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 1391023 | 103.38615 | ppb | 96 |
| 53) Toluene | 7.78 | 91 | 3471351 | 110.04814 | ppb | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 1205420 | 102.21279 | ppb | 98 |
| 55) 1,1,2-TCA | 8.21 | 83 | 616934 | 90.45696 | ppb | 98 |
| 56) 2-Hexanone | 8.51 | 43 | 475324 | 115.84209 | ppb | 90 |
| 59) 1,2-EDB | 8.69 | 107 | 744386 | 96.92037 | ppb | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 939508 | 85.33529 | ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 1041888 | 124.09482 | ppb | 85 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 885397 | 87.06029 | ppb | 93 |
| 63) m&p-Xylene | 9.46 | 106 | 3027496 | 231.82817 | ppb | 96 |
| 64) o-Xylene | 9.85 | 106 | 1483177 | 121.06991 | ppb | 99 |
| 65) Styrene | 9.86 | 104 | 2609390 | 134.83802 | ppb | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 1261238 | 99.14612 | ppb | 95 |
| 68) Dibromochloromethane | 8.60 | 129 | 919381 | 96.70623 | ppb | 99 |
| 69) Chlorobenzene | 9.21 | 112 | 2323747 | 97.98272 | ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 3782836 | 113.81952 | ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 692906 | 100.89838 | ppb | 96 |
| 73) Isopropylbenzene | 10.23 | 105 | 3792590 | 115.05672 | ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 1004513 | 100.13548 | ppb | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 311288 | 92.47801 | ppb | 95 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 218005 | 104.79768 | ppb | 98 |
| 77) Bromobenzene | 10.49 | 156 | 1093267 | 97.36623 | ppb | 97 |
| 78) n-Propylbenzene | 10.63 | 91 | 4602104 | 114.10400 | ppb | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 4071009 | 114.89202 | ppb | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 2745871 | 106.10274 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 3475213 | 111.79364 | ppb | 94 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 3275976 | 106.46591 | ppb | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 2897512 | 116.28236 | ppb | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 3584073 | 119.12759 | ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 4306678 | 117.22972 | ppb | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 3776924 | 119.83878 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 1465789 | 98.41729 | ppb | 100 |
| 88) 1,3-DCB | 11.44 | 146 | 2147538 | 98.53812 | ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 2228616 | 94.65795 | ppb | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 3633812 | 124.94005 | ppb | 95 |
| 91) 1,2-DCB | 11.89 | 146 | 2153475 | 100.70525 | ppb | 100 |
| 92) Hexachloroethane | 12.15 | 117 | 685986 | 100.72804 | ppb | 95 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 163072 | 124.34950 | ppb | 88 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 1697647 | 117.19581 | ppb | 97 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 892746 | 101.92639 | ppb | 96 |
| 96) Naphthalene | 13.72 | 128 | 2347008 | 147.01642 | ppb | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 1628576 | 113.85368 | ppb | 96 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

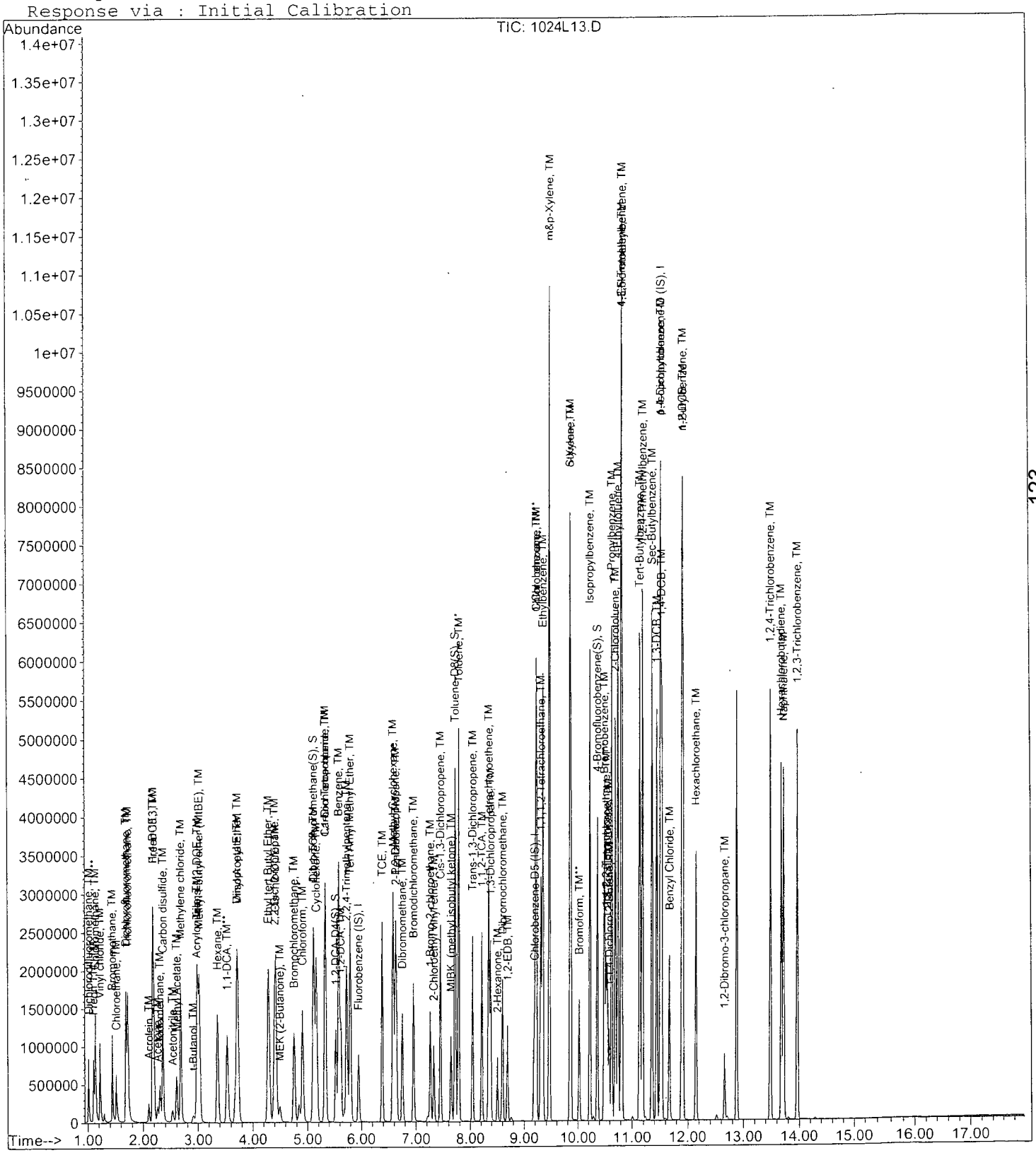
Data File : M:\LOKI\DATA\141024\1024L13.D
Acq On : 24 Oct 14 16:05
Sample : 100ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

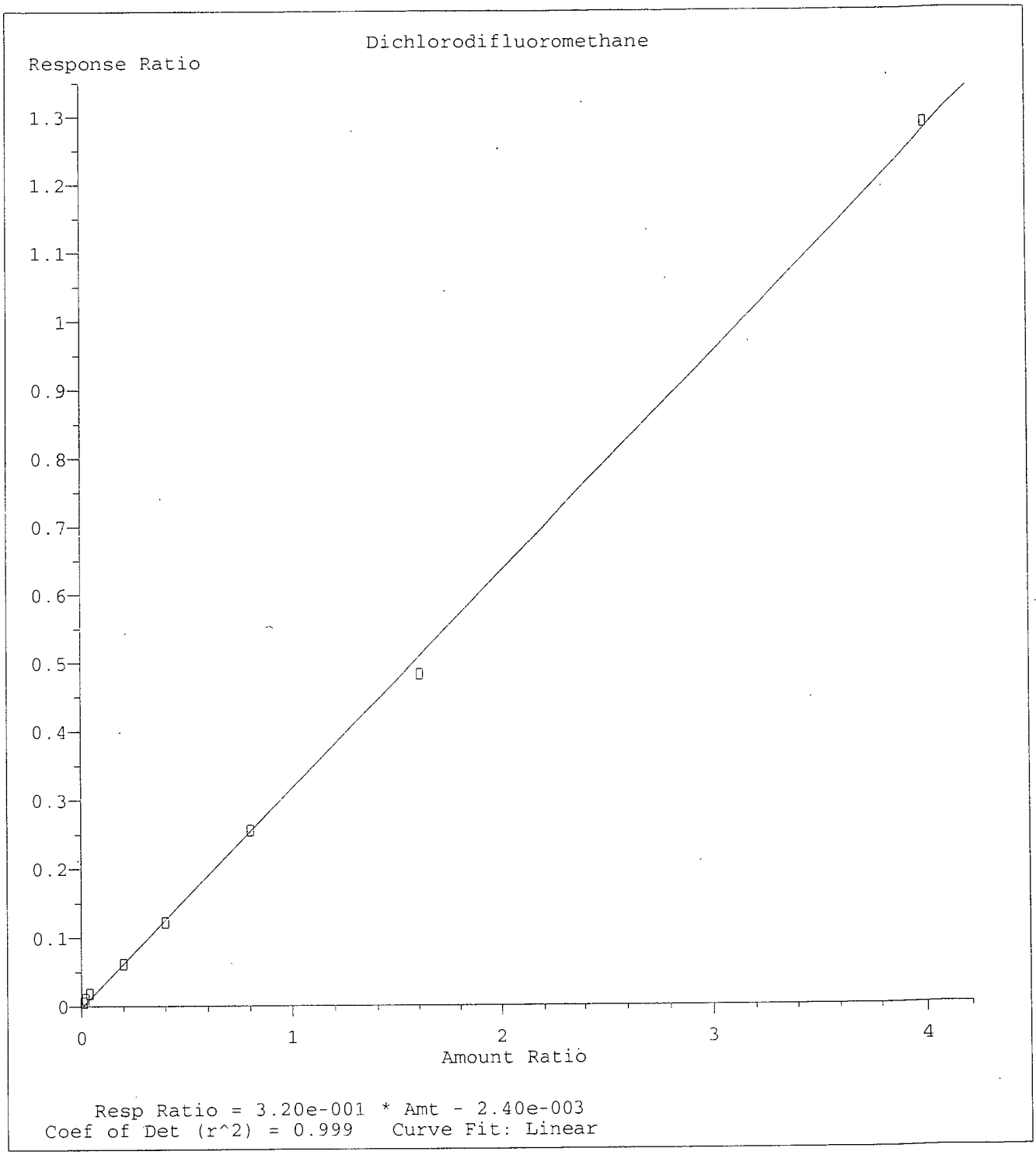
Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

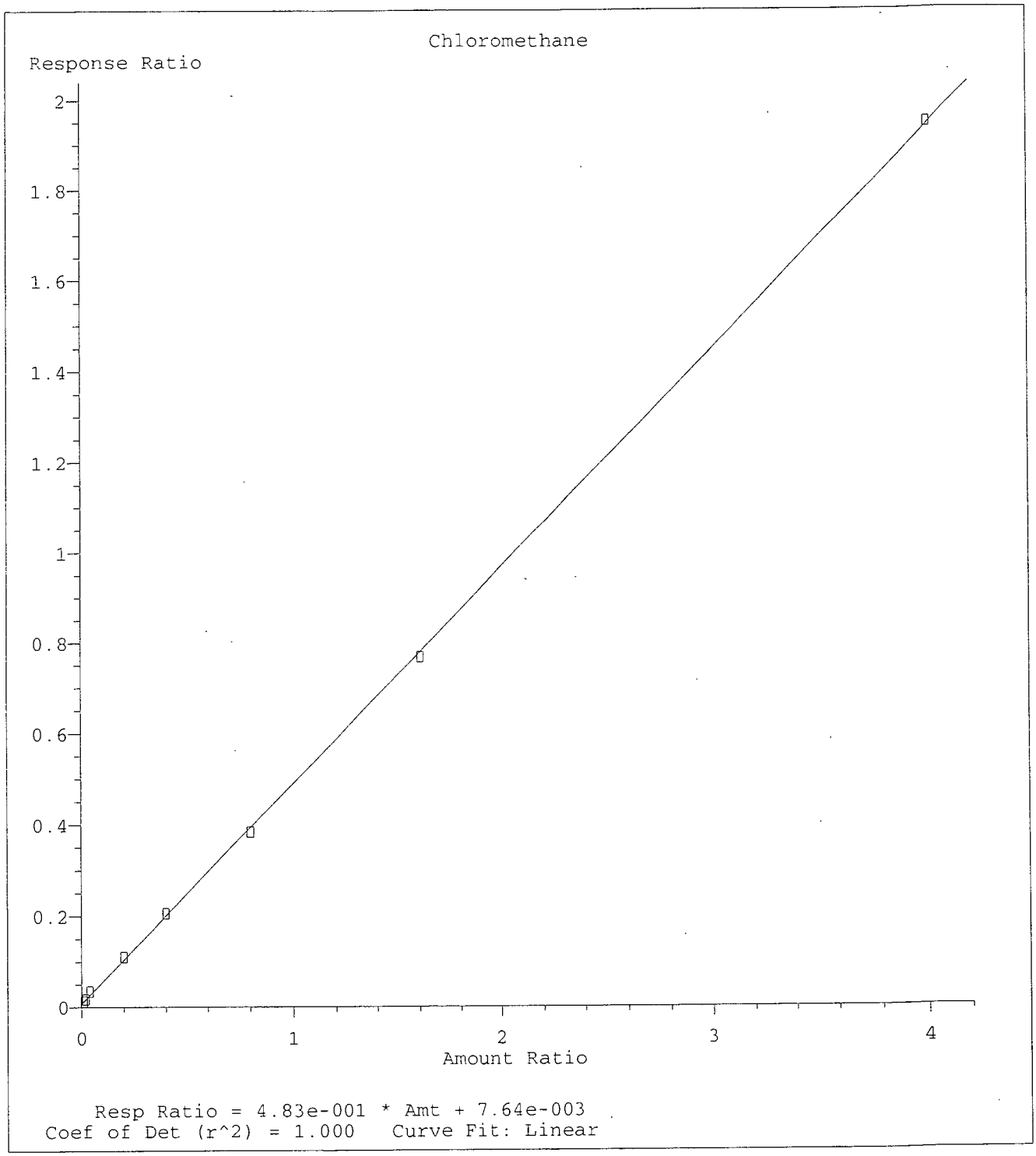
Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



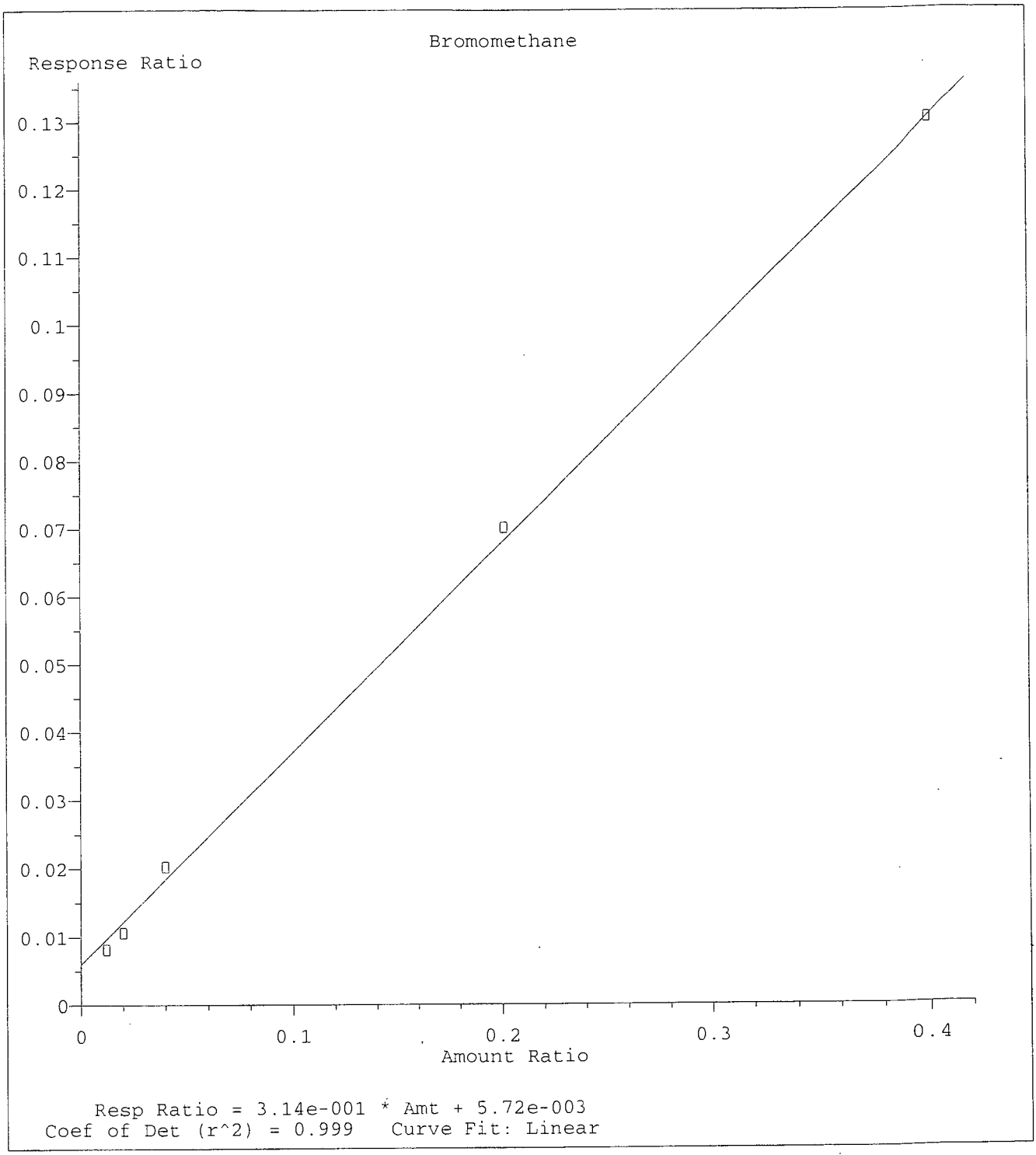

123



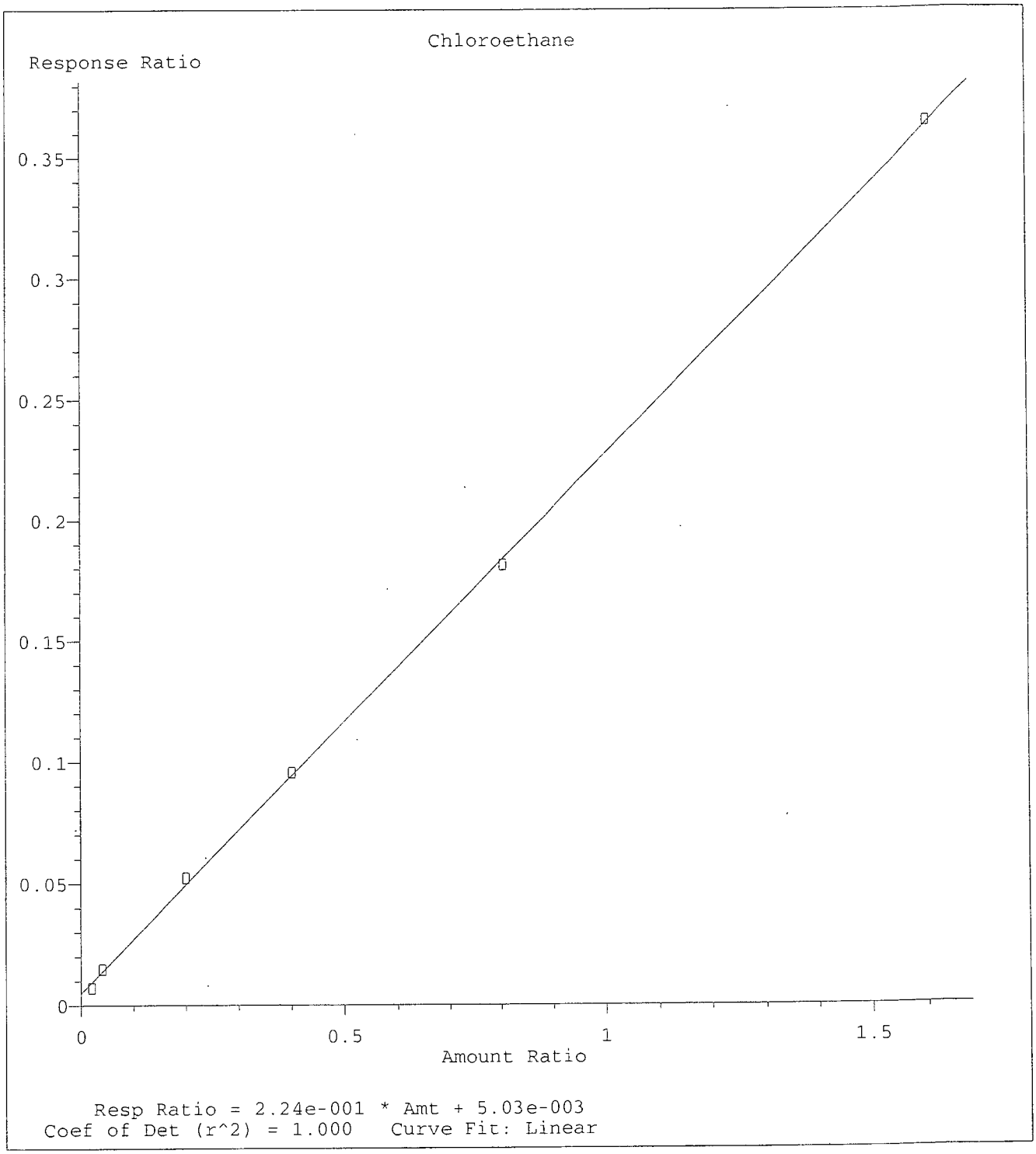

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



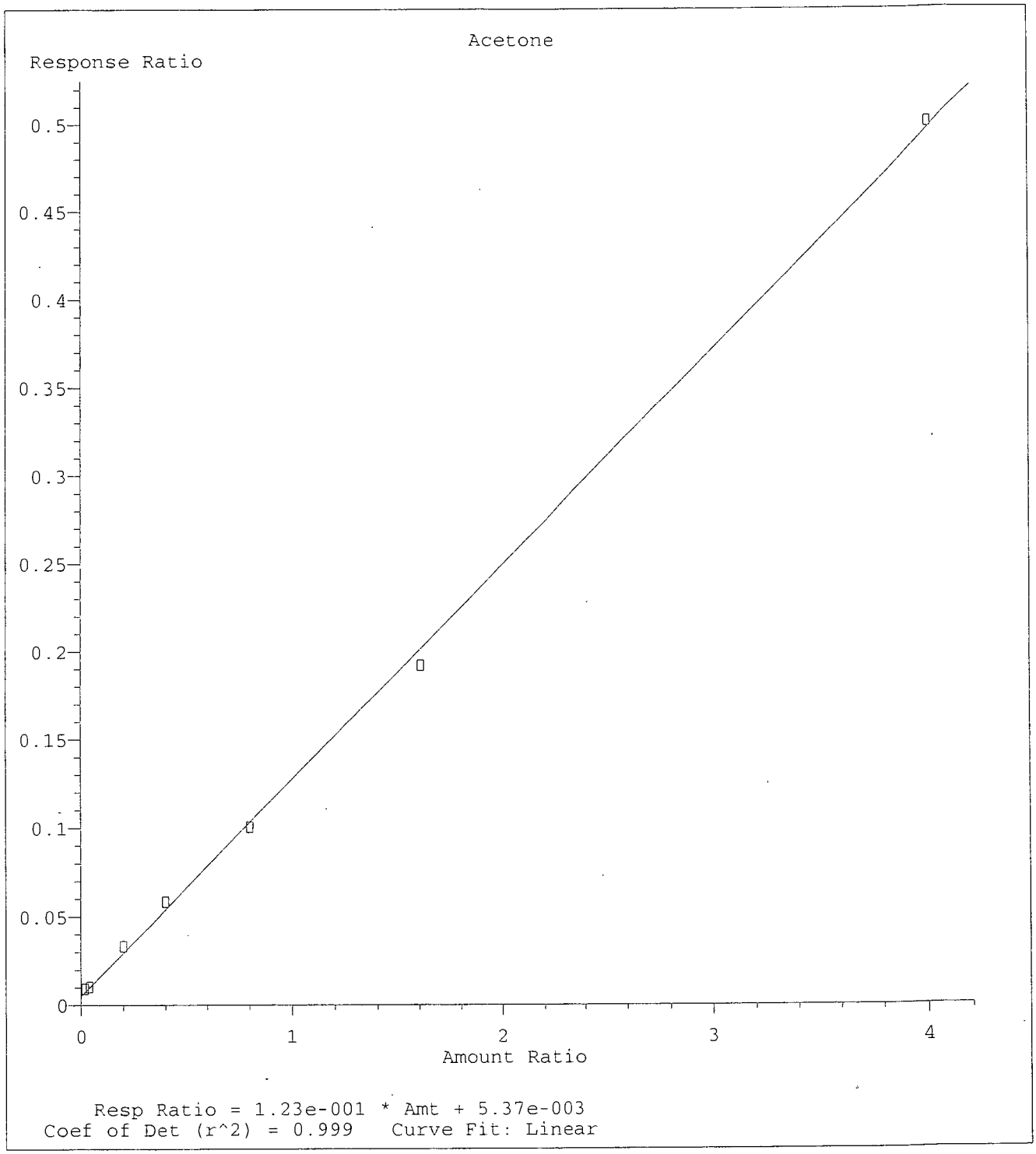

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



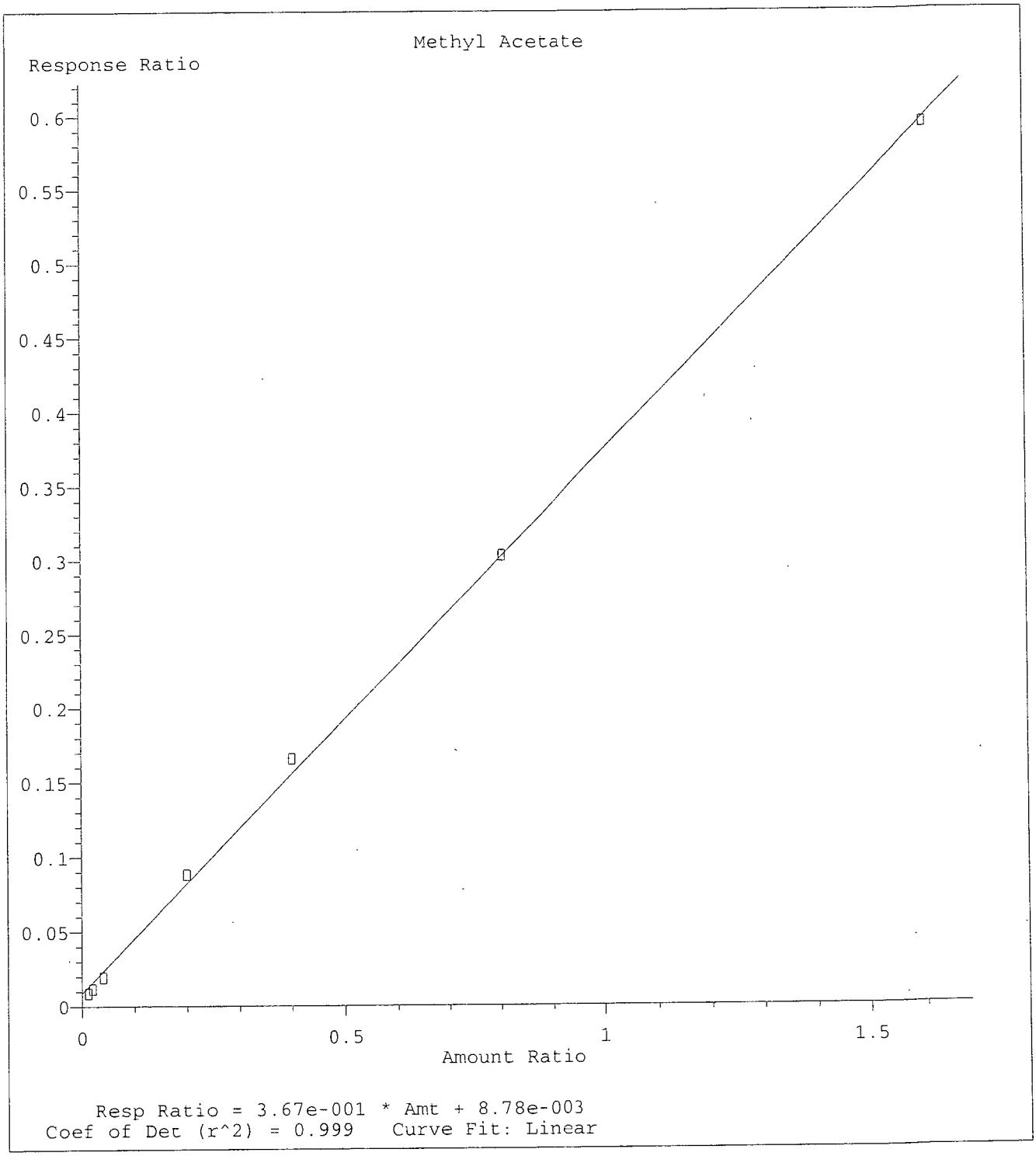

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



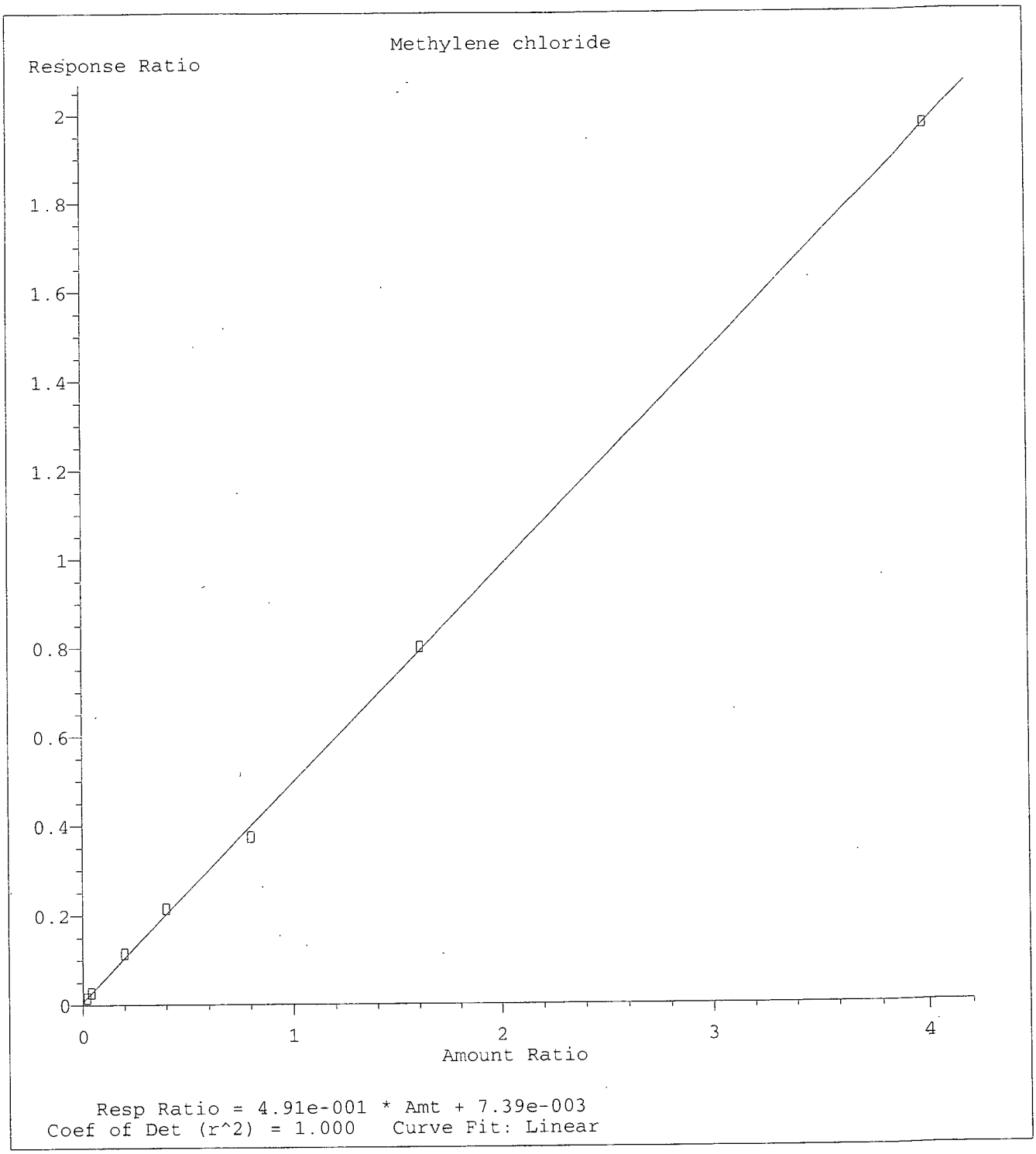

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



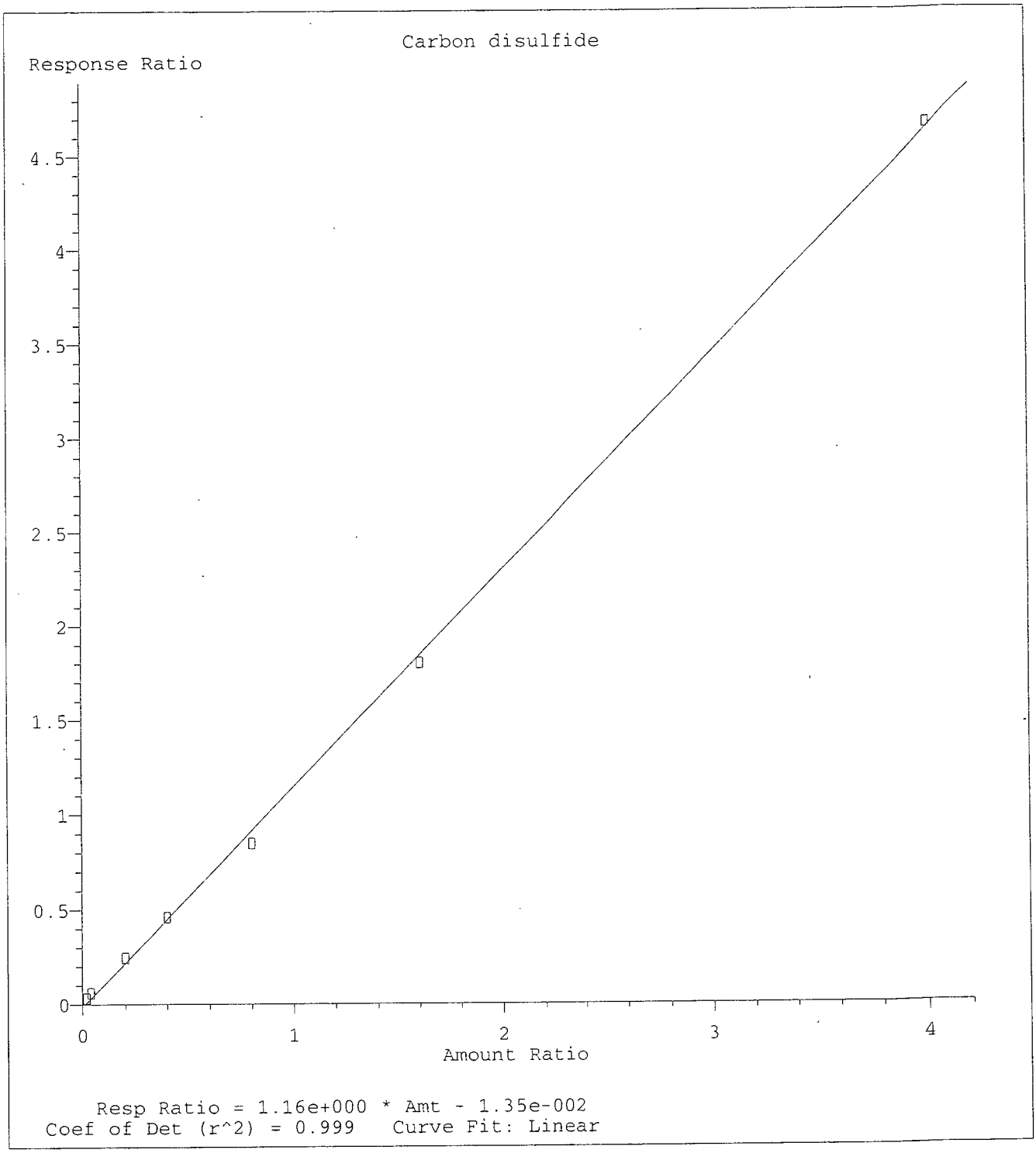

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



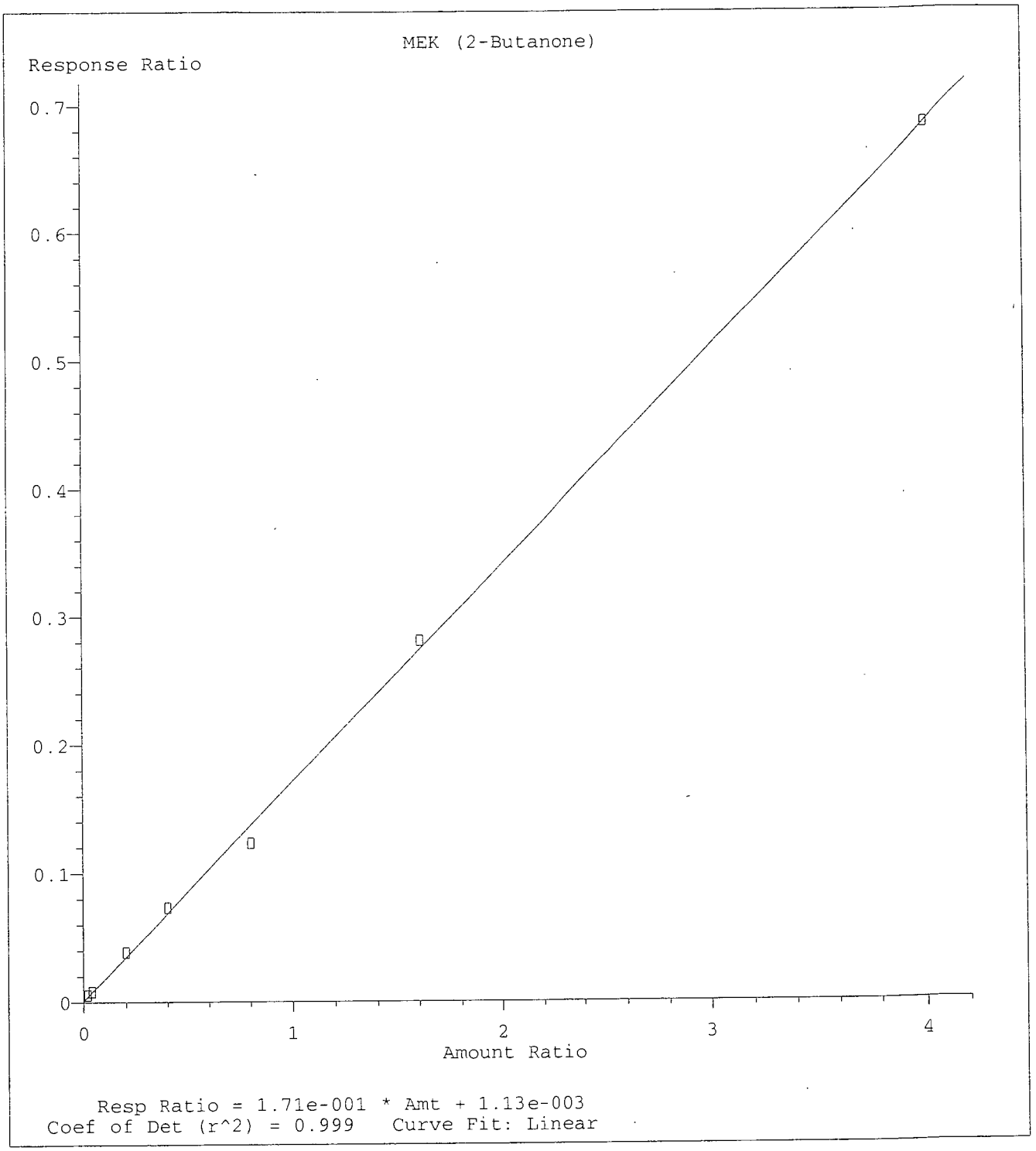

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



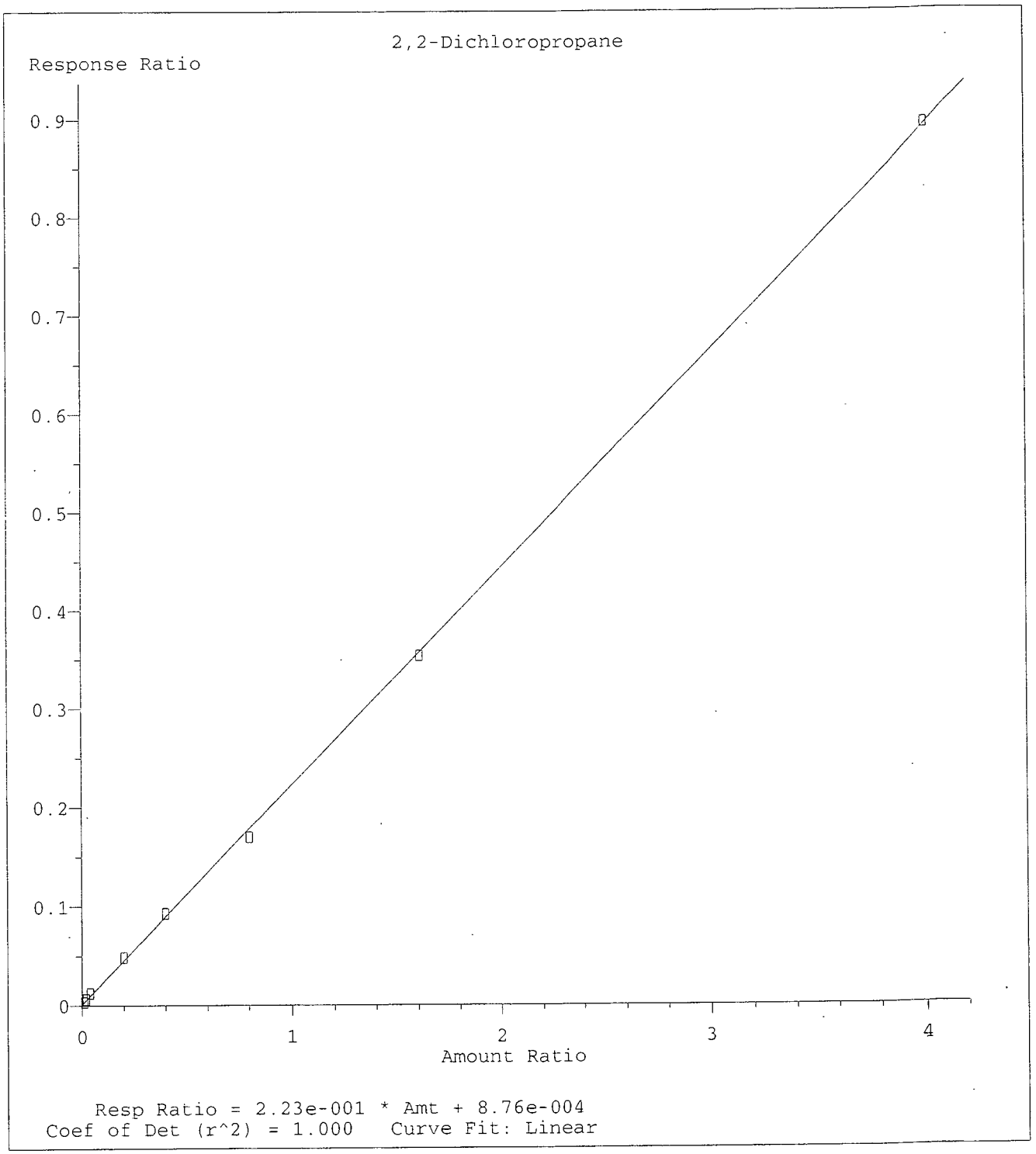

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



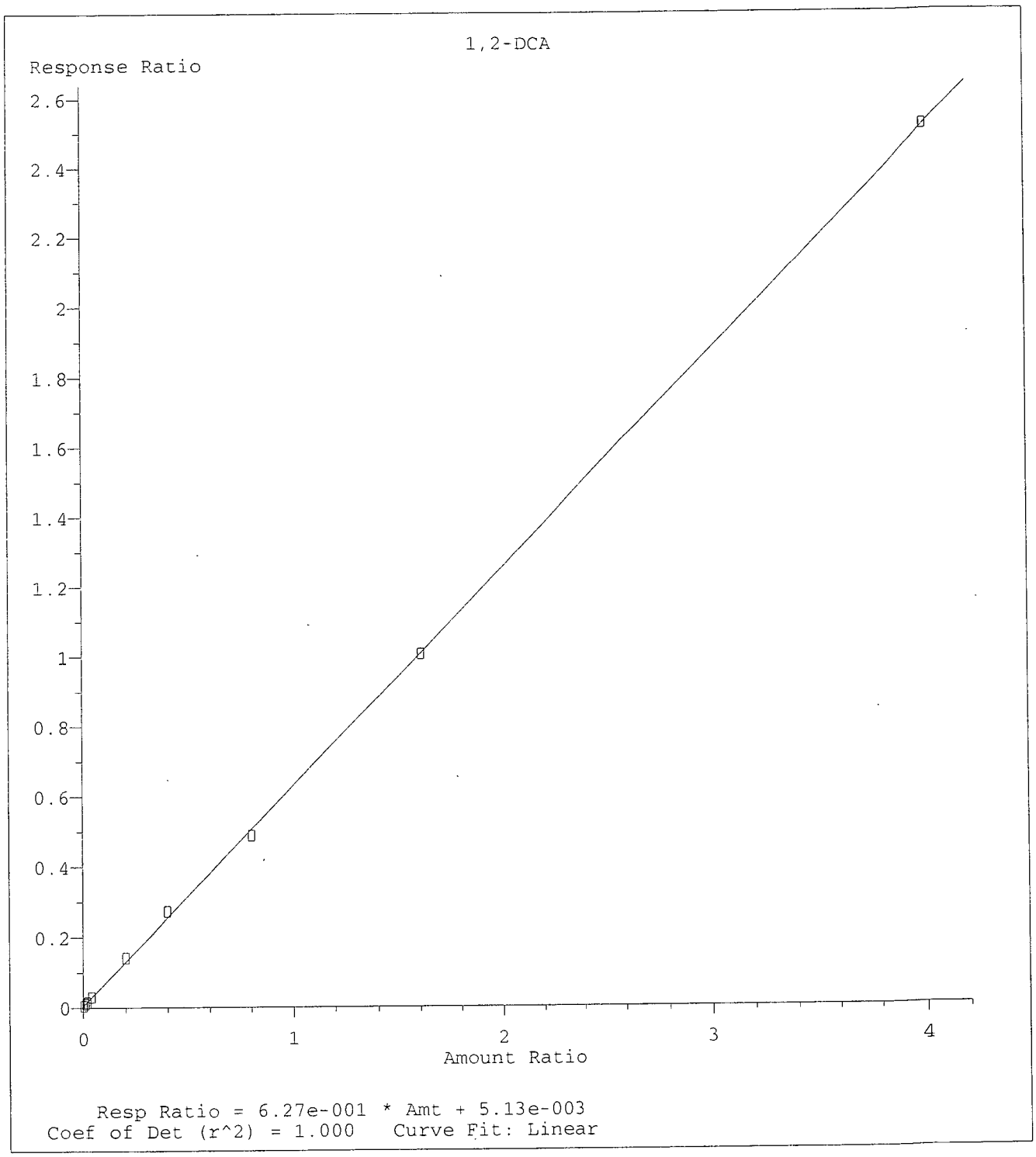

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



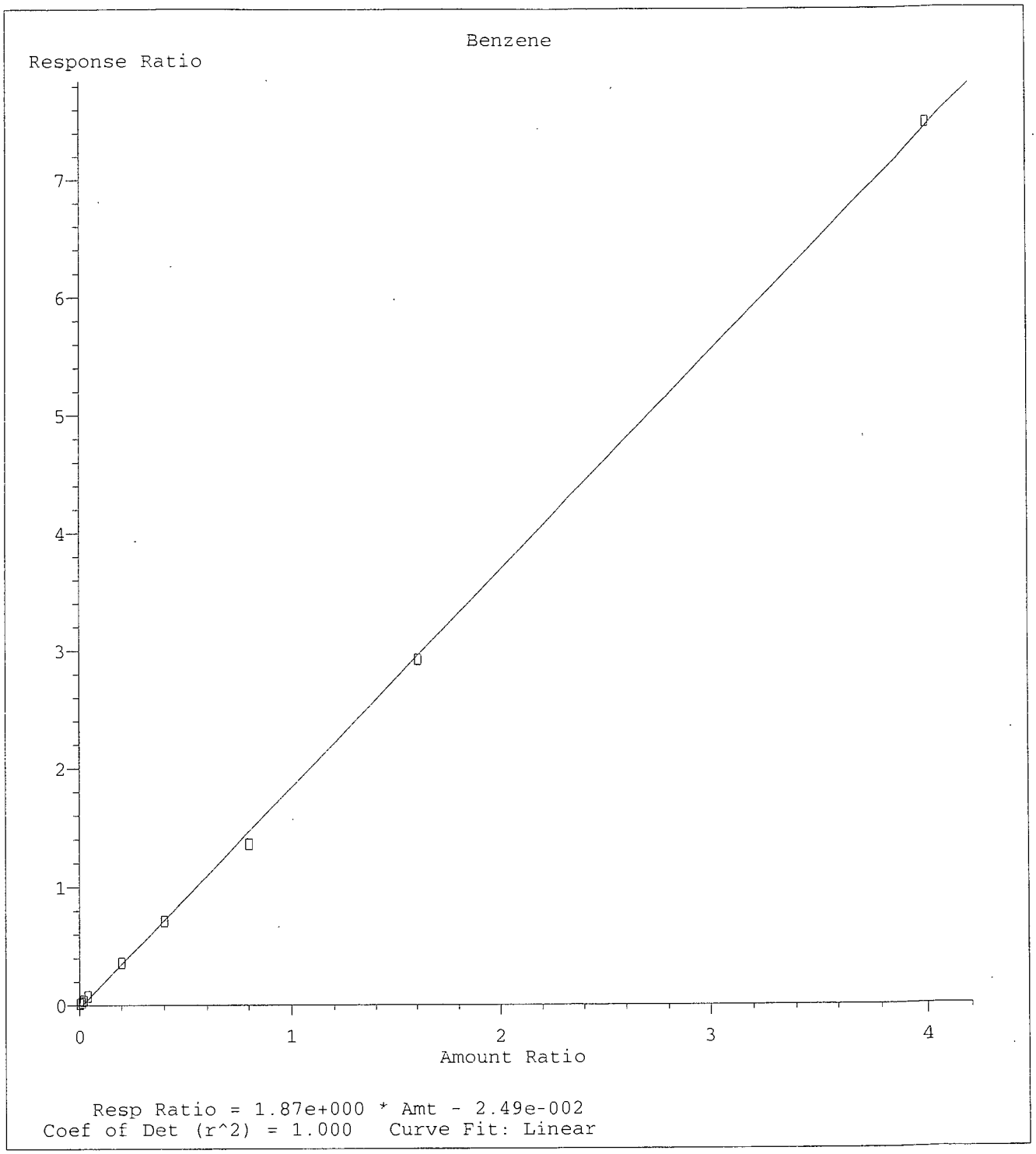

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



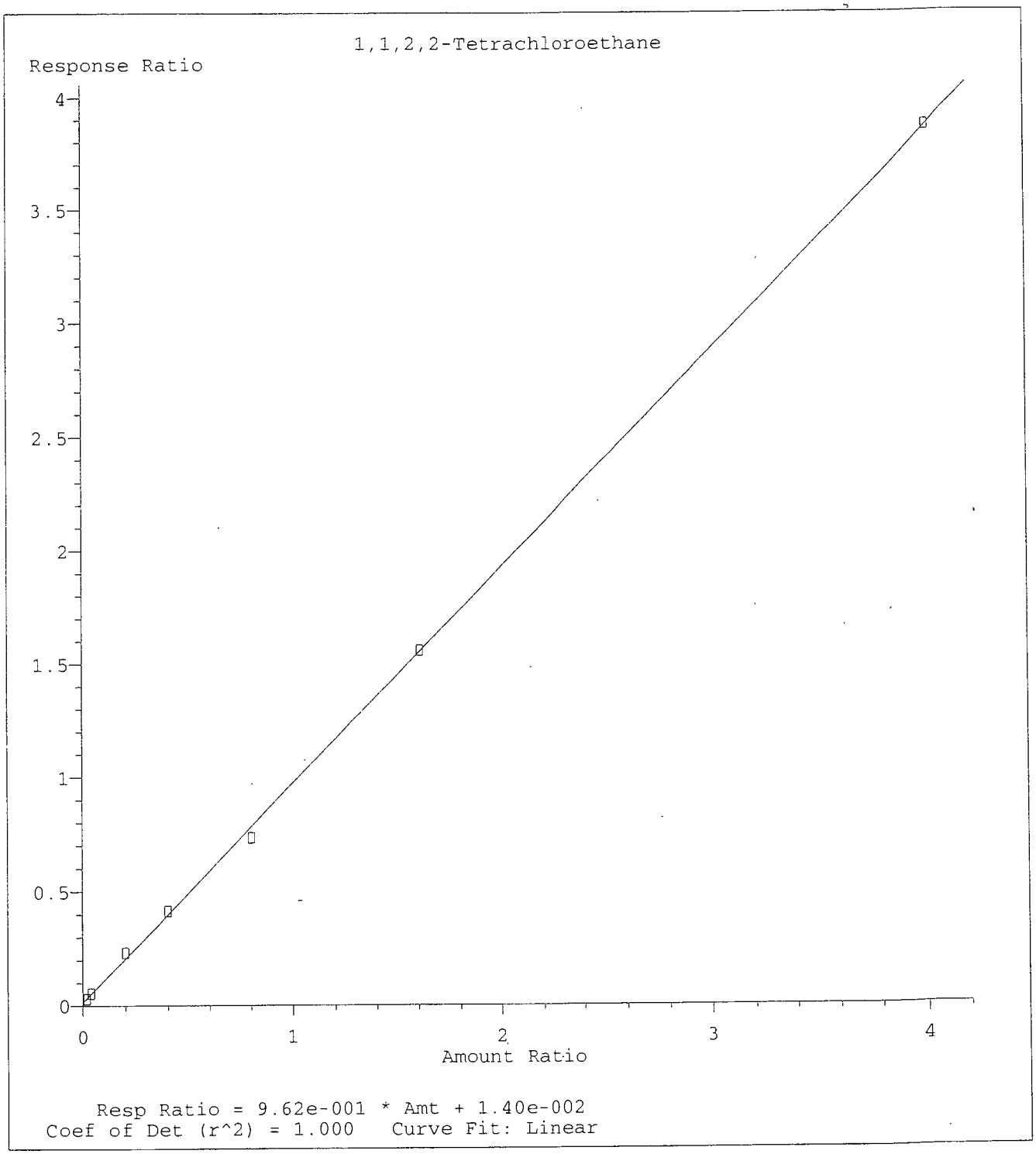

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



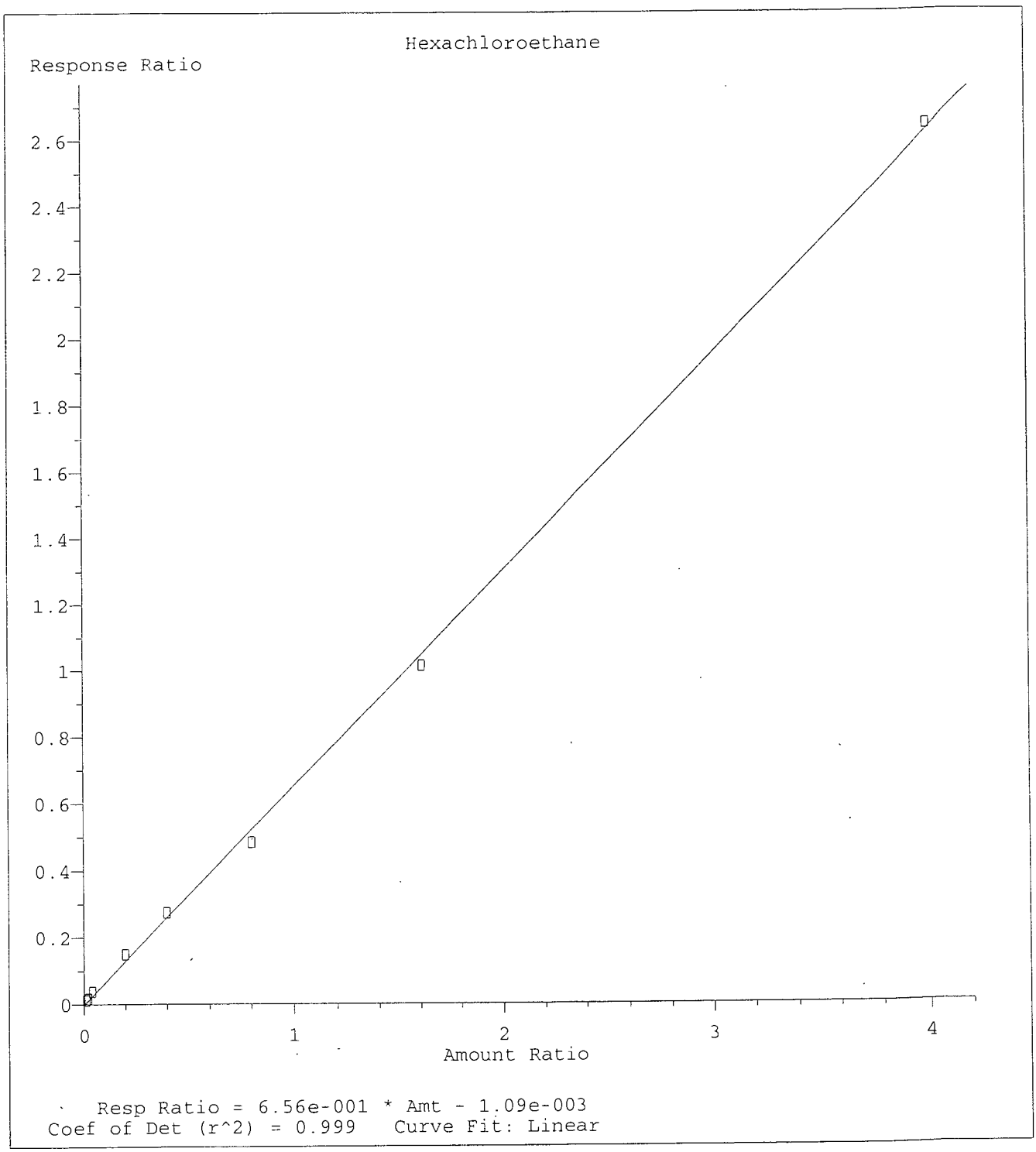

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



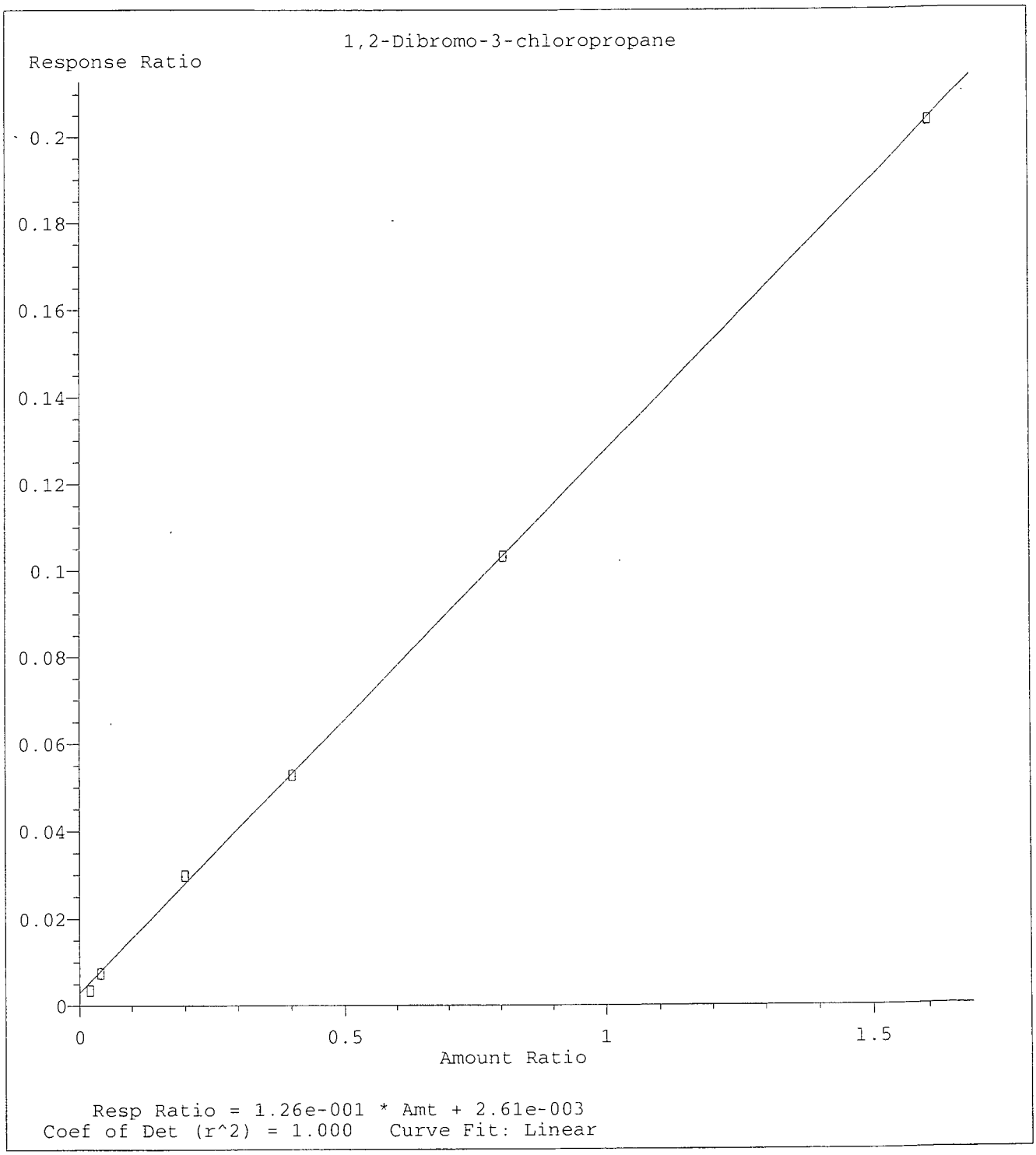

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014




Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014




Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014



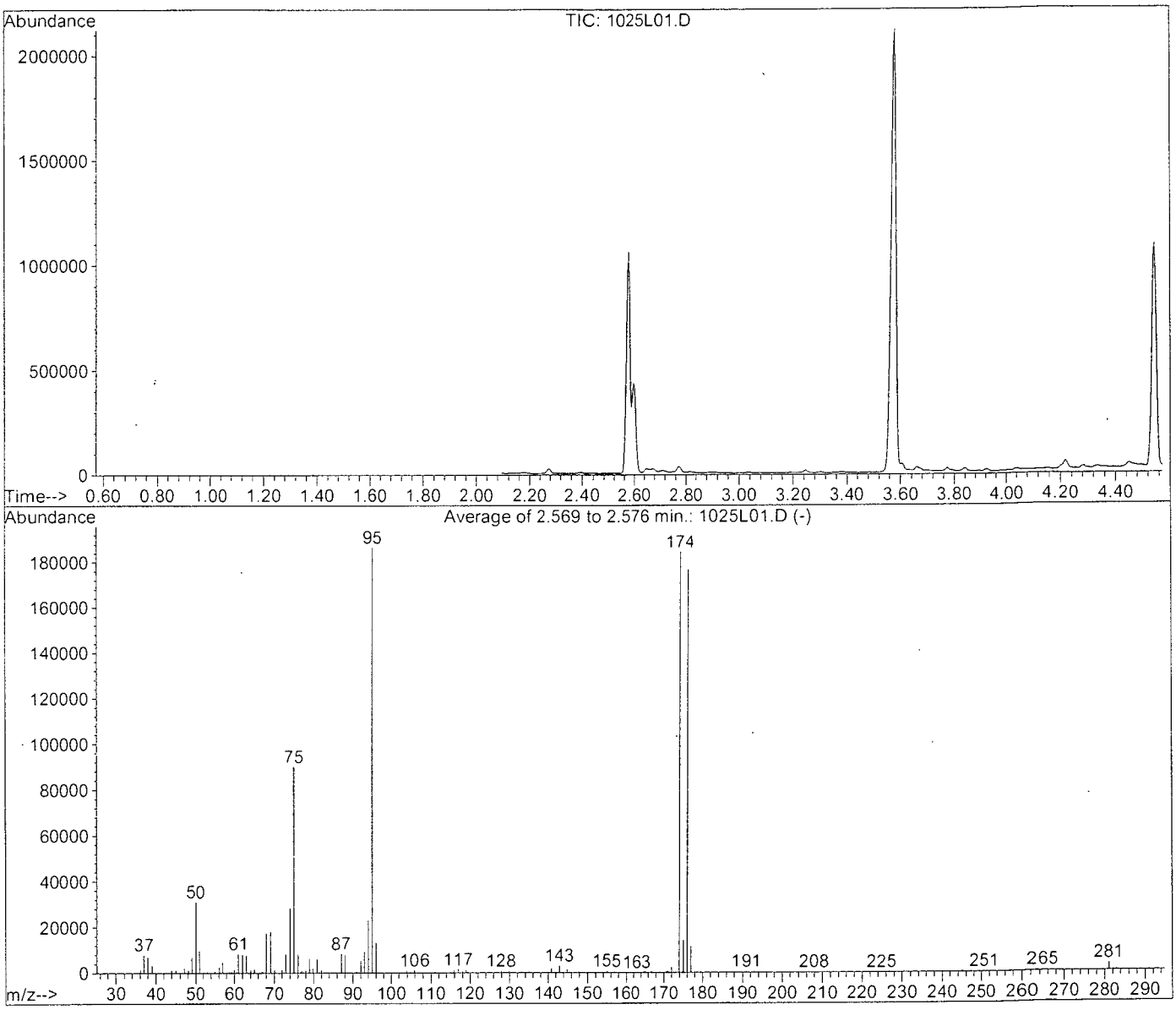

Method Name: M:\LOKI\DATA\141024\LALLW2.M
Calibration Table Last Updated: Mon Oct 27 15:42:00 2014

BFB

Data File : M:\LOKI\DATA\141024\1025L01.D
Acq On : 25 Oct 14 10:26
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 149, 150, 151; Background Corrected with Scan 139

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 16.6 | 31012 | PASS |
| 75 | 95 | 30 | 60 | 48.3 | 90103 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 186517 | PASS |
| 96 | 95 | 5 | 9 | 7.1 | 13160 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 98.9 | 184427 | PASS |
| 175 | 174 | 5 | 9 | 7.6 | 14060 | PASS |
| 176 | 174 | 95 | 101 | 95.7 | 176512 | PASS |
| 177 | 176 | 5 | 9 | 6.4 | 11382 | PASS |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 10/25/14
Instrument: Loki
Initial Cal. Date: 10/24/14
Data File: 1025L05.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TML | Dichlorodifluoromethane | 0.3733 | 0.3474 | 7.0 | TML | 11 |
| 3 | TM | Freon 114 | 0.2840 | 0.2570 | 9.5 | TM | |
| 4 | TM**L | Chloromethane | 0.6542 | 0.4705 | 28 | TM**L | 6.5 |
| 5 | TM* | Vinyl chloride | 0.6152 | 0.5346 | 13 | TM* | |
| 6 | TML | Bromomethane | 0.4789 | 0.3698 | 23 | TML | 13 |
| 7 | TML | Chloroethane | 0.2808 | 0.2644 | 5.9 | TML | 12 |
| 8 | TM | Dichlorofluoromethane | 1.004 | 0.9926 | 1.2 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7468 | 0.7200 | 3.6 | TM | |
| 10 | TM | Acrolein | 0.0561 | 0.0541 | 3.6 | TM | |
| 11 | TML | Acetone | 0.2009 | 0.1229 | 39 | TML | 11 |
| 12 | TM | Freon-113 | 0.4305 | 0.3874 | 10 | TM | |
| 13 | TM* | 1,1-DCE | 0.7001 | 0.6297 | 10 | TM* | |
| 14 | TM | t-Butanol | 0.0154 | 0.0157 | 1.7 | TM | |
| 15 | TM | Acetonitrile | 0.0630 | 0.0528 | 16 | TM | |
| 16 | TML | Methyl Acetate | 0.4863 | 0.3933 | 19 | TML | 1.1 |
| 17 | TM | Iodomethane | 0.1533 | 0.1701 | 11 | TM | |
| 18 | TM | Acrylonitrile | 0.1336 | 0.1272 | 4.8 | TM | |
| 19 | TML | Methylene chloride | 0.5705 | 0.5487 | 3.8 | TML | 8.0 |
| 20 | TML | Carbon disulfide | 1.258 | 1.148 | 8.8 | TML | 1.6 |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.113 | 1.069 | 4.0 | TM | |
| 22 | TM | Trans-1,2-DCE | 0.4881 | 0.4537 | 7.0 | TM | |
| 23 | TM | Diisopropyl Ether | 1.306 | 1.242 | 4.9 | TM | |
| 24 | TM** | 1,1-DCA | 0.9319 | 0.8895 | 4.6 | TM** | |
| 25 | TM | Hexane | 0.3678 | 0.3571 | 2.9 | TM | |
| 26 | TM | Vinyl Acetate | 0.2882 | 0.2783 | 3.4 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.101 | 1.102 | 0.12 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.1929 | 0.1871 | 3.0 | TML | 7.9 |
| 29 | TM | Cis-1,2-DCE | 0.5311 | 0.4956 | 6.7 | TM | |
| 30 | TML | 2,2-Dichloropropane | 0.2549 | 0.2427 | 4.8 | TML | 8.1 |
| 31 | TM* | Chloroform | 0.9960 | 0.9235 | 7.3 | TM* | |
| 32 | TM | Bromochloromethane | 0.2742 | 0.2583 | 5.8 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5447 | 0.5243 | 3.7 | S | |
| 34 | TM | 1,1,1-TCA | 0.7841 | 0.7448 | 5.0 | TM | |
| 35 | TM | Cyclohexane | 0.3283 | 0.3145 | 4.2 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5496 | 0.5518 | 0.40 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.010 | 1.012 | 0.20 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.5770 | 0.5833 | 1.1 | S | |
| 39 | TM | Carbon Tetrachloride | 0.6312 | 0.6201 | 1.8 | TM | |
| 40 | TM | Tert Amyl Methyl Ether | 1.091 | 1.077 | 1.3 | TM | |
| | | Average | | | 7.5 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/25/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1025L05.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TML | 1,2-DCA | 0.7554 | 0.6767 | 10 | TML | 5.9 |
| 42 | TML | Benzene | 1.976 | 1.832 | 7.3 | TML | 1.6 |
| 43 | TM | TCE | 0.4973 | 0.4600 | 7.5 | TM | |
| 44 | TM | 2-Pentanone | 0.3194 | 0.3452 | 8.1 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5713 | 0.5562 | 2.6 | TM* | |
| 46 | TM | Bromodichloromethane | 0.7300 | 0.7013 | 3.9 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5513 | 0.4995 | 9.4 | TM | |
| 48 | TM | Dibromomethane | 0.3403 | 0.3179 | 6.6 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | 0.0504 | 0.0435 | 14 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3796 | 0.3738 | 1.5 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4265 | 0.3918 | 8.1 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7966 | 0.7428 | 6.7 | TM | |
| 53 | TM* | Toluene | 1.868 | 1.945 | 4.1 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6982 | 0.6563 | 6.0 | TM | |
| 55 | TM | 1,1,2-TCA | 0.4038 | 0.3851 | 4.6 | TM | |
| 56 | TM | 2-Hexanone | 0.2429 | 0.2370 | 2.4 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.772 | 1.962 | 11 | S | |
| 59 | TM | 1,2-EDB | 0.5140 | 0.4922 | 4.2 | TM | |
| 60 | TM | Tetrachloroethene | 0.7368 | 0.6401 | 13 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5619 | 0.5787 | 3.0 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6806 | 0.6390 | 6.1 | TM | |
| 63 | TM | m&p-Xylene | 0.8740 | 0.9464 | 8.3 | TM | |
| 64 | TM | o-Xylene | 0.8198 | 0.7975 | 2.7 | TM | |
| 65 | TM | Styrene | 1.295 | 1.472 | 14 | TM | |
| 66 | S | 4-Bromofluorobenzene(S) | 0.6754 | 0.7022 | 4.0 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8513 | 0.8307 | 2.4 | TM | |
| 68 | TM | Dibromochloromethane | 0.6362 | 0.6056 | 4.8 | TM | |
| 69 | TM** | Chlorobenzene | 1.587 | 1.571 | 1.0 | TM** | |
| 70 | TM* | Ethylbenzene | 2.224 | 2.386 | 7.3 | TM* | |
| 71 | TM** | Bromoform | 0.4596 | 0.4359 | 5.2 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.171 | 3.184 | 0.40 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.126 | 1.141 | 1.3 | TM**L | 15 |
| 75 | TM | 1,2,3-Trichloropropane | 0.3239 | 0.3142 | 3.0 | TM | |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2001 | 0.2144 | 7.1 | TM | |
| 77 | TM | Bromobenzene | 1.080 | 1.093 | 1.1 | TM | |
| 78 | TM | n-Propylbenzene | 3.881 | 4.130 | 6.4 | TM | |
| 79 | TM | 4-Ethyltoluene | 3.409 | 3.683 | 8.0 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.490 | 2.693 | 8.2 | TM | |
| | | Average | | | 5.9 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/25/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1025L05.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 2.991 | 3.372 | 13 | TM | |
| 82 | TM | 4-Chlorotoluene | 2.960 | 3.302 | 12 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.397 | 2.427 | 1.2 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 2.895 | 3.065 | 5.9 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.535 | 3.732 | 5.6 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.032 | 3.274 | 8.0 | TM | |
| 87 | TM | Benzyl Chloride | 1.433 | 1.541 | 7.5 | TM | |
| 88 | TM | 1,3-DCB | 2.097 | 2.149 | 2.5 | TM | |
| 89 | TM | 1,4-DCB | 2.265 | 2.260 | 0.24 | TM | |
| 90 | TM | n-Butylbenzene | 2.798 | 2.999 | 7.2 | TM | |
| 91 | TM | 1,2-DCB | 2.057 | 1.978 | 3.8 | TM | |
| 92 | TML | Hexachloroethane | 0.7618 | 0.7188 | 5.6 | TML | 10 |
| 93 | TML | 1,2-Dibromo-3-chloropropane | 0.1498 | 0.1445 | 3.6 | TML | 9.8 |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.394 | 1.262 | 9.5 | TM | |
| 95 | TM | Hexachlorobutadiene | 0.8427 | 0.8200 | 2.7 | TM | |
| 96 | TM | Naphthalene | 1.536 | 1.511 | 1.6 | TM | |
| 97 | TM | 1,2,3-Trichlorobenzene | 1.376 | 1.284 | 6.7 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
| 103 | | | | | | | |
| 104 | | | | | | | |
| 105 | | | | | | | |
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| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 5.7 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1025L05.D
Acq On : 25 Oct 14 12:14
Sample : 10ug/L Std 10-25-14 (SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

$\frac{81129 \times 25}{379392 \times 0.6152} = 8.689$

SV 10/29/14

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 379392 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 328192 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 207232 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 198913 | 24.06357 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery = 88.585% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 221282 | 25.27209 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery = 91.250% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 644007 | 27.68703 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery = 105.876% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 230452 | 25.99248 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery = 116.918% | | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 52719 | 11.05957 ppb | 95 |
| 3) Freon 114 | 1.10 | 85 | 38999 | 9.04821 ppb | 91 |
| 4) Chloromethane | 1.14 | 50 | 71400 | 9.34932 ppb | 98 |
| 5) Vinyl chloride | 1.21 | 62 | 81129 | 8.68916 ppb | 100 |
| 6) Bromomethane | 1.44 | 94 | 56119 | 11.33350 ppb | 98 |
| 7) Chloroethane | 1.53 | 64 | 40120 | 11.24192 ppb | 93 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 150635 | 9.88351 ppb | 97 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 109271 | 9.64220 ppb | 99 |
| 10) Acrolein | 2.10 | 56 | 102559 | 120.55316 ppb | 97 |
| 11) Acetone | 2.25 | 43 | 18647 | 8.91672 ppb | 99 |
| 12) Freon-113 | 2.20 | 101 | 58793 | 8.99951 ppb | 97 |
| 13) 1,1-DCE | 2.18 | 61 | 95561 | 8.99383 ppb | 96 |
| 14) t-Butanol | 2.88 | 59 | 29688 | 127.07488 ppb | 97 |
| 15) Acetonitrile | 2.52 | 41 | 100200 | 104.83383 ppb | 96 |
| 16) Methyl Acetate | 2.60 | 43 | 59686 | 10.10814 ppb | 94 |
| 17) Iodomethane | 2.31 | 142 | 25816 | 11.09348 ppb | 97 |
| 18) Acrylonitrile | 2.97 | 52 | 19299 | 9.51792 ppb | 98 |
| 19) Methylene chloride | 2.67 | 84 | 83268 | 10.80074 ppb | 100 |
| 20) Carbon disulfide | 2.36 | 76 | 174141 | 10.16376 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 162265 | 9.60476 ppb | 96 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 68857 | 9.29571 ppb | 93 |
| 23) Diisopropyl Ether | 3.71 | 45 | 188520 | 9.51380 ppb | 98 |
| 24) 1,1-DCA | 3.53 | 63 | 134988 | 9.54487 ppb | 96 |
| 25) Hexane | 3.36 | 57 | 54198 | 9.71075 ppb | 97 |
| 26) Vinyl Acetate | 3.71 | 43 | 42240 | 9.65921 ppb | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 167257 | 10.01200 ppb | 95 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 28389 | 10.78760 ppb | 96 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 75205 | 9.33088 ppb | 96 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 36832 | 10.80798 ppb | 98 |
| 31) Chloroform | 4.90 | 83 | 140155 | 9.27272 ppb | 99 |
| 32) Bromochloromethane | 4.75 | 128 | 39203 | 9.42236 ppb | 92 |
| 34) 1,1,1-TCA | 5.10 | 97 | 113029 | 9.49854 ppb | 95 |
| 35) Cyclohexane | 5.16 | 41 | 47729 | 9.58017 ppb | 90 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 83739 | 10.03982 ppb | 96 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 153545 | 10.02009 ppb # | 87 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 94110 | 9.82474 ppb | 96 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 163492 | 9.87304 ppb | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 102687 | 10.59018 ppb | 97 |
| 42) Benzene | 5.58 | 78 | 278083 | 10.15661 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1025L05.D
Acq On : 25 Oct 14 12:14
Sample : 10ug/L Std 10-25-14 (SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014
Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 69808 | 9.25052 | ppb | 94 |
| 44) 2-Pentanone | 6.63 | 43 | 654920 | 135.09557 | ppb | 96 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 84402 | 9.73558 | ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 106420 | 9.60588 | ppb | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 75802 | 9.05983 | ppb | 98 |
| 48) Dibromomethane | 6.75 | 93 | 48250 | 9.34273 | ppb | 91 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 6605 | 8.63794 | ppb | 82 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 56726 | 9.84630 | ppb | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 59456 | 9.18600 | ppb | 100 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 112725 | 9.32508 | ppb | 93 |
| 53) Toluene | 7.78 | 91 | 295152 | 10.41439 | ppb | 98 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 99600 | 9.40005 | ppb | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 58441 | 9.53729 | ppb | 96 |
| 56) 2-Hexanone | 8.50 | 43 | 35972 | 9.75765 | ppb | 93 |
| 59) 1,2-EDB | 8.69 | 107 | 64618 | 9.57662 | ppb | 100 |
| 60) Tetrachloroethene | 8.34 | 166 | 84025 | 8.68717 | ppb | 92 |
| 61) 1-Chlorohexane | 9.22 | 91 | 75969 | 10.29937 | ppb | 94 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 83880 | 9.38820 | ppb | 99 |
| 63) m&p-Xylene | 9.46 | 106 | 248492 | 21.65892 | ppb | 96 |
| 64) o-Xylene | 9.85 | 106 | 104691 | 9.72734 | ppb | 93 |
| 65) Styrene | 9.86 | 104 | 193286 | 11.36882 | ppb | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 109048 | 9.75749 | ppb | 99 |
| 68) Dibromochloromethane | 8.60 | 129 | 79502 | 9.51872 | ppb | 99 |
| 69) Chlorobenzene | 9.20 | 112 | 206186 | 9.89604 | ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 313287 | 10.72959 | ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 57224 | 9.48483 | ppb | 99 |
| 73) Isopropylbenzene | 10.22 | 105 | 263934 | 10.03970 | ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 94560 | 11.49838 | ppb | 97 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 26048 | 9.70286 | ppb | 84 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 17772 | 10.71200 | ppb | 87 |
| 77) Bromobenzene | 10.49 | 156 | 90567 | 10.11350 | ppb | 100 |
| 78) n-Propylbenzene | 10.63 | 91 | 342342 | 10.64275 | ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 305303 | 10.80359 | ppb | 100 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 223222 | 10.81515 | ppb | 98 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 279487 | 11.27318 | ppb | 96 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 273705 | 11.15326 | ppb | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 201152 | 10.12190 | ppb | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 254075 | 10.58880 | ppb | 96 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 309351 | 10.55835 | ppb | 100 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 271402 | 10.79745 | ppb | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 127718 | 10.75230 | ppb | 97 |
| 88) 1,3-DCB | 11.44 | 146 | 178177 | 10.25095 | ppb | 99 |
| 89) 1,4-DCB | 11.53 | 146 | 187327 | 9.97634 | ppb | 95 |
| 90) n-Butylbenzene | 11.91 | 91 | 248581 | 10.71658 | ppb | 97 |
| 91) 1,2-DCB | 11.89 | 146 | 164003 | 9.61642 | ppb | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 59582 | 11.00690 | ppb | 93 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 11974 | 10.97636 | ppb | 92 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 104581 | 9.05246 | ppb | 98 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 67970 | 9.73028 | ppb | 94 |
| 96) Naphthalene | 13.72 | 128 | 125256 | 9.83782 | ppb | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 106401 | 9.32683 | ppb | 95 |

(#) = qualifier out of range (m) = manual integration

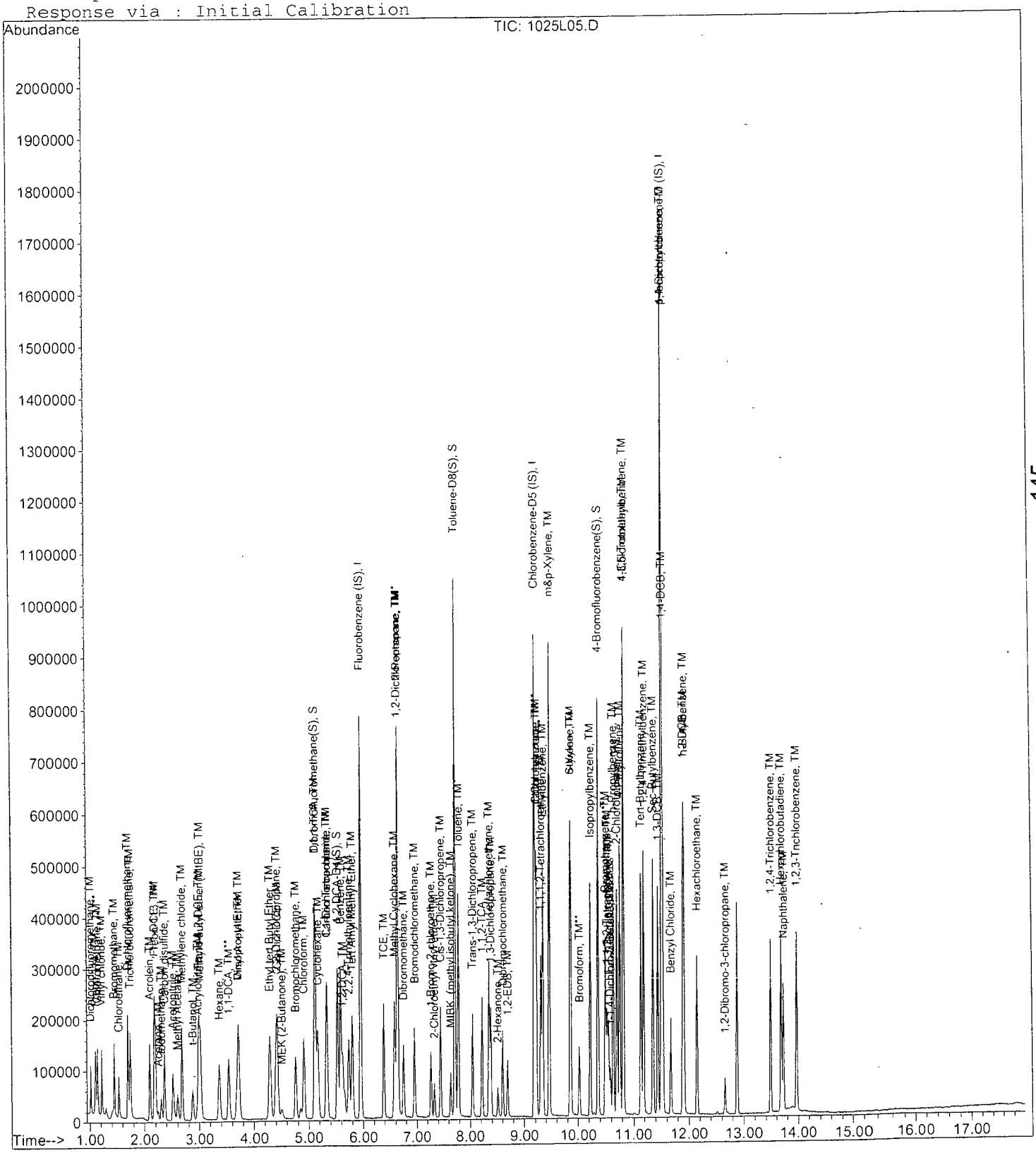
Quantitation Report

Data File : M:\LOKI\DATA\141024\1025L05.D
Acq On : 25 Oct 14 12:14
Sample : 10ug/L Std 10-25-14 (SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

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VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 10/26/14
Instrument: Loki
Initial Cal. Date: 10/24/14
Data File: 1026L04.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TML | Dichlorodifluoromethane | 0.3733 | 0.3052 | 18 | TML | 2.6 |
| 3 | TM | Freon 114 | 0.2840 | 0.2760 | 2.8 | TM | |
| 4 | TM**L | Chloromethane | 0.6542 | 0.4448 | 32 | TM**L | 12 |
| 5 | TM* | Vinyl chloride | 0.6152 | 0.5058 | 18 | TM* | |
| 6 | TML | Bromomethane | 0.4789 | 0.3677 | 23 | TML | 13 |
| 7 | TML | Chloroethane | 0.2808 | 0.2590 | 7.8 | TML | 10 |
| 8 | TM | Dichlorofluoromethane | 1.004 | 0.9722 | 3.2 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7468 | 0.6926 | 7.3 | TM | |
| 10 | TM | Acrolein | 0.0561 | 0.0533 | 4.9 | TM | |
| 11 | TML | Acetone | 0.2009 | 0.1279 | 36 | TML | 6.7 |
| 12 | TM | Freon-113 | 0.4305 | 0.4346 | 0.95 | TM | |
| 13 | TM* | 1,1-DCE | 0.7001 | 0.6428 | 8.2 | TM* | |
| 14 | TM | t-Butanol | 0.0154 | 0.0136 | 12 | TM | |
| 15 | TM | Acetonitrile | 0.0630 | 0.0554 | 12 | TM | |
| 16 | TML | Methyl Acetate | 0.4863 | 0.3900 | 20 | TML | 0.18 |
| 17 | TM | Iodomethane | 0.1533 | 0.1817 | 19 | TM | |
| 18 | TM | Acrylonitrile | 0.1336 | 0.1176 | 12 | TM | |
| 19 | TML | Methylene chloride | 0.5705 | 0.5261 | 7.8 | TML | 3.4 |
| 20 | TML | Carbon disulfide | 1.258 | 1.175 | 6.6 | TML | 4.0 |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.113 | 1.005 | 9.7 | TM | |
| 22 | TM | Trans-1,2-DCE | 0.4881 | 0.4482 | 8.2 | TM | |
| 23 | TM | Diisopropyl Ether | 1.306 | 1.288 | 1.4 | TM | |
| 24 | TM** | 1,1-DCA | 0.9319 | 0.8584 | 7.9 | TM** | |
| 25 | TM | Hexane | 0.3678 | 0.3791 | 3.1 | TM | |
| 26 | TM | Vinyl Acetate | 0.2882 | 0.2962 | 2.8 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.101 | 1.057 | 4.0 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.1929 | 0.1633 | 15 | TML | 6.1 |
| 29 | TM | Cis-1,2-DCE | 0.5311 | 0.5243 | 1.3 | TM | |
| 30 | TML | 2,2-Dichloropropane | 0.2549 | 0.2649 | 3.9 | TML | 18 |
| 31 | TM* | Chloroform | 0.9960 | 0.9063 | 9.0 | TM* | |
| 32 | TM | Bromochloromethane | 0.2742 | 0.2723 | 0.68 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5447 | 0.5195 | 4.6 | S | |
| 34 | TM | 1,1,1-TCA | 0.7841 | 0.7426 | 5.3 | TM | |
| 35 | TM | Cyclohexane | 0.3283 | 0.3388 | 3.2 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5496 | 0.5604 | 2.0 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.010 | 1.168 | 16 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.5770 | 0.5694 | 1.3 | S | |
| 39 | TM | Carbon Tetrachloride | 0.6312 | 0.6598 | 4.5 | TM | |
| 40 | TM | Tert Amyl Methyl Ether | 1.091 | 1.050 | 3.8 | TM | |
| | | Average | | | 9.2 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/26/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1026L04.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TML | 1,2-DCA | 0.7554 | 0.6667 | 12 | TML | 4.3 |
| 42 | TML | Benzene | 1.976 | 1.816 | 8.1 | TML | 0.67 |
| 43 | TM | TCE | 0.4973 | 0.4558 | 8.3 | TM | |
| 44 | TM | 2-Pentanone | 0.3194 | 0.3001 | 6.1 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5713 | 0.5198 | 9.0 | TM* | |
| 46 | TM | Bromodichloromethane | 0.7300 | 0.6787 | 7.0 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5513 | 0.5557 | 0.80 | TM | |
| 48 | TM | Dibromomethane | 0.3403 | 0.3254 | 4.4 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | 0.0504 | 0.0359 | 29 | TM | nt |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3796 | 0.3106 | 18 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4265 | 0.3977 | 6.7 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7966 | 0.7182 | 9.8 | TM | |
| 53 | TM* | Toluene | 1.868 | 1.951 | 4.5 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6982 | 0.6318 | 9.5 | TM | |
| 55 | TM | 1,1,2-TCA | 0.4038 | 0.3503 | 13 | TM | |
| 56 | TM | 2-Hexanone | 0.2429 | 0.2062 | 15 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.772 | 2.060 | 16 | S | |
| 59 | TM | 1,2-EDB | 0.5140 | 0.4808 | 6.5 | TM | |
| 60 | TM | Tetrachloroethene | 0.7368 | 0.7314 | 0.74 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5619 | 0.5842 | 4.0 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6806 | 0.6400 | 6.0 | TM | |
| 63 | TM | m&p-Xylene | 0.8740 | 0.9419 | 7.8 | TM | |
| 64 | TM | o-Xylene | 0.8198 | 0.8556 | 4.4 | TM | |
| 65 | TM | Styrene | 1.295 | 1.497 | 16 | TM | |
| 66 | S | 4-Bromofluorobenzene(S) | 0.6754 | 0.7374 | 9.2 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8513 | 0.8279 | 2.8 | TM | |
| 68 | TM | Dibromochloromethane | 0.6362 | 0.5988 | 5.9 | TM | |
| 69 | TM** | Chlorobenzene | 1.587 | 1.600 | 0.79 | TM** | |
| 70 | TM* | Ethylbenzene | 2.224 | 2.381 | 7.1 | TM* | |
| 71 | TM** | Bromoform | 0.4596 | 0.4321 | 6.0 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.171 | 3.083 | 2.8 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.126 | 1.079 | 4.2 | TM**L | 8.6 |
| 75 | TM | 1,2,3-Trichloropropane | 0.3239 | 0.3028 | 6.5 | TM | |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2001 | 0.2115 | 5.7 | TM | |
| 77 | TM | Bromobenzene | 1.080 | 1.063 | 1.6 | TM | |
| 78 | TM | n-Propylbenzene | 3.881 | 4.050 | 4.4 | TM | |
| 79 | TM | 4-Ethyltoluene | 3.409 | 3.665 | 7.5 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.490 | 2.623 | 5.4 | TM | |
| | | Average | | | 7.7 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/26/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1026L04.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 2.991 | 3.300 | 10 | TM | |
| 82 | TM | 4-Chlorotoluene | 2.960 | 3.275 | 11 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.397 | 2.417 | 0.83 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 2.895 | 2.988 | 3.2 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.535 | 3.743 | 5.9 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.032 | 3.236 | 6.7 | TM | |
| 87 | TM | Benzyl Chloride | 1.433 | 1.492 | 4.2 | TM | |
| 88 | TM | 1,3-DCB | 2.097 | 2.085 | 0.56 | TM | |
| 89 | TM | 1,4-DCB | 2.265 | 2.226 | 1.7 | TM | |
| 90 | TM | n-Butylbenzene | 2.798 | 2.923 | 4.4 | TM | |
| 91 | TM | 1,2-DCB | 2.057 | 2.026 | 1.5 | TM | |
| 92 | TML | Hexachloroethane | 0.7618 | 0.7085 | 7.0 | TML | 8.5 |
| 93 | TML | 1,2-Dibromo-3-chloropropane | 0.1498 | 0.1288 | 14 | TML | 2.7 |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.394 | 1.202 | 14 | TM | |
| 95 | TM | Hexachlorobutadiene | 0.8427 | 0.8206 | 2.6 | TM | |
| 96 | TM | Naphthalene | 1.536 | 1.341 | 13 | TM | |
| 97 | TM | 1,2,3-Trichlorobenzene | 1.376 | 1.192 | 13 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
| 103 | | | | | | | |
| 104 | | | | | | | |
| 105 | | | | | | | |
| 106 | | | | | | | |
| 107 | | | | | | | |
| 108 | | | | | | | |
| 109 | | | | | | | |
| 110 | | | | | | | |
| 111 | | | | | | | |
| 112 | | | | | | | |
| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 6.7 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L04.D
Acq On : 26 Oct 14 12:07
Sample : 10ug/L Std 10-26-14(CCV)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 397248 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 332288 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 219840 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 206369 | 23.84337 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 87.771% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 226191 | 24.67158 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 89.084% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 684409 | 29.06129 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 111.131% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 245025 | 27.29549 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 122.779% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 48497 | 9.73932 ppb | | 96 |
| 3) Freon 114 | 1.10 | 85 | 43862 | 9.71905 ppb | | 89 |
| 4) Chloromethane | 1.14 | 50 | 70671 | 8.81626 ppb | | 97 |
| 5) Vinyl chloride | 1.22 | 62 | 80364 | 8.22034 ppb | | 98 |
| 6) Bromomethane | 1.44 | 94 | 58427 | 11.26664 ppb | | 97 |
| 7) Chloroethane | 1.53 | 64 | 41160 | 11.00359 ppb | | 91 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 154479 | 9.68014 ppb | | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 110051 | 9.27453 ppb | | 96 |
| 10) Acrolein | 2.10 | 56 | 105866 | 118.84687 ppb | | 95 |
| 11) Acetone | 2.25 | 43 | 20323 | 9.32606 ppb | | 93 |
| 12) Freon-113 | 2.20 | 101 | 69052 | 10.09476 ppb | | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 102139 | 9.18083 ppb | | 97 |
| 14) t-Butanol | 2.88 | 59 | 27024 | 110.47267 ppb | | 99 |
| 15) Acetonitrile | 2.52 | 41 | 110094 | 110.00789 ppb | | 96 |
| 16) Methyl Acetate | 2.60 | 43 | 61968 | 10.01784 ppb | | 92 |
| 17) Iodomethane | 2.31 | 142 | 28880 | 11.85229 ppb | | 100 |
| 18) Acrylonitrile | 2.97 | 52 | 18692 | 8.80420 ppb | | 85 |
| 19) Methylene chloride | 2.67 | 84 | 83600 | 10.34089 ppb | | 95 |
| 20) Carbon disulfide | 2.36 | 76 | 186706 | 10.40034 ppb | | 97 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 159653 | 9.02538 ppb | | 99 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 71214 | 9.18177 ppb | | 94 |
| 23) Diisopropyl Ether | 3.71 | 45 | 204590 | 9.86069 ppb | | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 136393 | 9.21071 ppb | | 97 |
| 25) Hexane | 3.36 | 57 | 60239 | 10.30798 ppb | # | 96 |
| 26) Vinyl Acetate | 3.71 | 43 | 47072 | 10.28032 ppb | # | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 167915 | 9.59959 ppb | | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 25943 | 9.39405 ppb | | 98 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 83309 | 9.87176 ppb | | 98 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 42096 | 11.80642 ppb | | 100 |
| 31) Chloroform | 4.90 | 83 | 144005 | 9.09918 ppb | | 98 |
| 32) Bromochloromethane | 4.76 | 128 | 43267 | 9.93171 ppb | | 100 |
| 34) 1,1,1-TCA | 5.11 | 97 | 117992 | 9.46992 ppb | | 98 |
| 35) Cyclohexane | 5.16 | 41 | 53833 | 10.31967 ppb | | 95 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 89043 | 10.19587 ppb | | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 185647 | 11.57046 ppb | | 98 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 104846 | 10.45355 ppb | | 98 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 166772 | 9.61842 ppb | | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 105940 | 10.43156 ppb | | 94 |
| 42) Benzene | 5.58 | 78 | 288506 | 10.06671 ppb | | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L04.D
Acq On : 26 Oct 14 12:07
Sample : 10ug/L Std 10-26-14(CCV)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 72427 | 9.16617 | ppb | | 99 |
| 44) 2-Pentanone | 6.63 | 43 | 596028 | 117.42105 | ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 82599 | 9.09935 | ppb | | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 107842 | 9.29668 | ppb | | 97 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 88305 | 10.07978 | ppb | | 97 |
| 48) Dibromomethane | 6.75 | 93 | 51704 | 9.56152 | ppb | | 90 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 5706 | 7.12682 | ppb | | 95 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 49362 | 8.18295 | ppb | | 99 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 63200 | 9.32555 | ppb | | 97 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 114121 | 9.01621 | ppb | | 93 |
| 53) Toluene | 7.78 | 91 | 310067 | 10.44889 | ppb | | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 100396 | 9.04928 | ppb | | 95 |
| 55) 1,1,2-TCA | 8.21 | 83 | 55665 | 8.67593 | ppb | | 96 |
| 56) 2-Hexanone | 8.50 | 43 | 32764 | 8.48798 | ppb | # | 93 |
| 59) 1,2-EDB | 8.69 | 107 | 63910 | 9.35493 | ppb | | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 97210 | 9.92645 | ppb | | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 77645 | 10.39683 | ppb | | 98 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 85065 | 9.40347 | ppb | | 97 |
| 63) m&p-Xylene | 9.46 | 106 | 250396 | 21.55584 | ppb | | 94 |
| 64) o-Xylene | 9.85 | 106 | 113727 | 10.43667 | ppb | | 96 |
| 65) Styrene | 9.86 | 104 | 198982 | 11.55958 | ppb | | 96 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 110038 | 9.72470 | ppb | | 93 |
| 68) Dibromochloromethane | 8.60 | 129 | 79596 | 9.41250 | ppb | | 93 |
| 69) Chlorobenzene | 9.21 | 112 | 212624 | 10.07924 | ppb | | 96 |
| 70) Ethylbenzene | 9.34 | 91 | 316495 | 10.70585 | ppb | | 100 |
| 71) Bromoform | 10.02 | 173 | 57436 | 9.40262 | ppb | | 94 |
| 73) Isopropylbenzene | 10.22 | 105 | 271082 | 9.72022 | ppb | | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 94918 | 10.86041 | ppb | | 93 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 26631 | 9.35110 | ppb | | 96 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 18595 | 10.56527 | ppb | | 92 |
| 77) Bromobenzene | 10.49 | 156 | 93515 | 9.84380 | ppb | | 92 |
| 78) n-Propylbenzene | 10.63 | 91 | 356178 | 10.43784 | ppb | | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 322309 | 10.75126 | ppb | | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 230693 | 10.53611 | ppb | | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 290147 | 11.03197 | ppb | | 99 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 287961 | 11.06121 | ppb | | 97 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 212567 | 10.08286 | ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 262784 | 10.32366 | ppb | | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 329152 | 10.58988 | ppb | | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 284575 | 10.67223 | ppb | | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 131244 | 10.41547 | ppb | | 98 |
| 88) 1,3-DCB | 11.44 | 146 | 183360 | 9.94414 | ppb | | 96 |
| 89) 1,4-DCB | 11.53 | 146 | 195723 | 9.82569 | ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 257003 | 10.44424 | ppb | | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 178186 | 9.84884 | ppb | | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 62307 | 10.85077 | ppb | | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 11324 | 9.72874 | ppb | | 94 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 105700 | 8.62460 | ppb | | 97 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 72159 | 9.73752 | ppb | | 95 |
| 96) Naphthalene | 13.72 | 128 | 117896 | 8.72870 | ppb | | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 104835 | 8.66253 | ppb | | 96 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

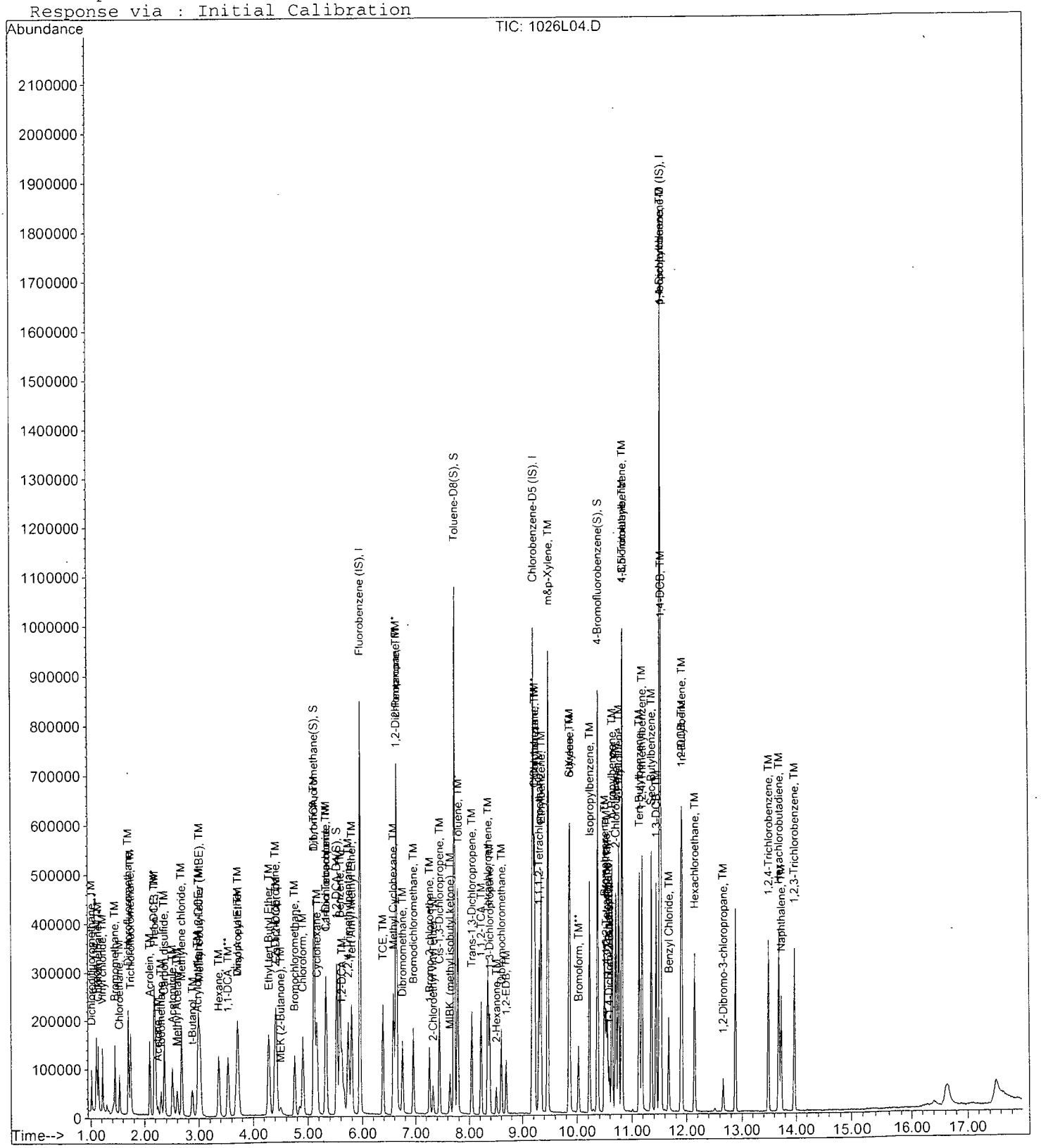
Data File : M:\LOKI\DATA\141024\1026L04.D
Acq On : 26 Oct 14 12:07
Sample : 10ug/L Std 10-26-14(CCV)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



# EPA METHOD 8260C
# Volatile Organic Compounds
# Raw Data

APPL, INC.

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DIBROMO-3-CHLOROPROPA | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,3-DICHLOROPROPENE (TOTA | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/14 | 10/26/14 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 10/29/14 4:48:16 PM*

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: 1,2-DICHLOROET | 104 | 70-120 | | | % | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: 4-BROMOFLUOR | 99.4 | 75-120 | | | % | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: DIBROMOFLUOR | 104 | 85-115 | | | % | 10/26/14 | 10/26/14 |
| BLANK | SURROGATE: TOLUENE-D8 (S) | 98.2 | 85-120 | | | % | 10/26/14 | 10/26/14 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 10/29/14 4:48:17 PM*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141024\1026L10.D Vial: 9
Acq On : 26 Oct 14 14:57 Operator: DG,SV,RS
Sample : 141026A BLK-1WL Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 29 16:08 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 333440 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 314944 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 147328 | 25.00000 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 204259 | 28.11567 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 103.501% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 220891 | 28.70408 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 103.642% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 573395 | 25.68824 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 98.232% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 188032 | 22.10007 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 99.411% | |

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

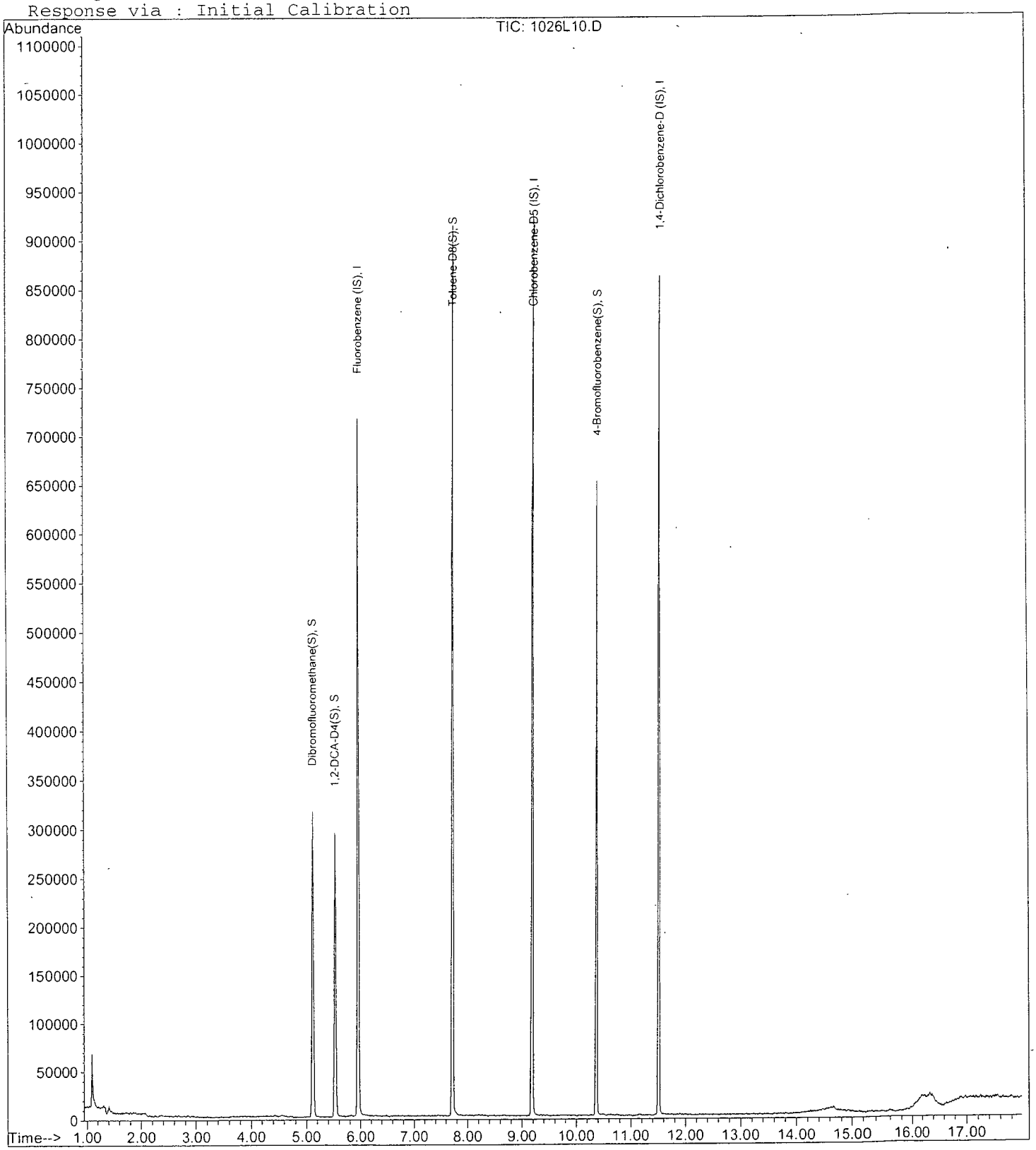
Data File : M:\LOKI\DATA\141024\1026L10.D
Acq On : 26 Oct 14 14:57
Sample : 141026A BLK-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 16:08 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | 9.15 | 91.5 | 80-130 |
| 1,1,1-TRICHLOROETHANE | 10.00 | 9.54 | 95.4 | 65-130 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | 10.9 | 109 | 65-130 |
| 1,1,2-TRICHLOROETHANE | 10.00 | 9.15 | 91.5 | 75-125 |
| 1,1-DICHLOROETHANE | 10.00 | 8.64 | 86.4 | 70-135 |
| 1,1-DICHLOROETHENE | 10.00 | 9.46 | 94.6 | 70-130 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | 9.50 | 95.0 | 75-125 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | 8.72 | 87.2 | 65-135 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | 10.6 | 106 | 50-130 |
| 1,2-DIBROMOETHANE | 10.00 | 9.54 | 95.4 | 80-120 |
| 1,2-DICHLOROBENZENE | 10.00 | 10.0 | 100 | 70-120 |
| 1,2-DICHLOROETHANE | 10.00 | 10.2 | 102 | 70-130 |
| 1,2-DICHLOROPROPANE | 10.00 | 9.39 | 93.9 | 75-125 |
| 1,3-DICHLOROBENZENE | 10.00 | 10.7 | 107 | 75-125 |
| 1,3-DICHLOROPROPENE (TOTAL) | 20.0 | 18.4 | 92.0 | 55-140 |
| 1,4-DICHLOROBENZENE | 10.00 | 10.4 | 104 | 75-125 |
| 2-BUTANONE | 10.00 | 9.58 | 95.8 | 30-150 |
| 4-METHYL-2-PENTANONE | 10.00 | 8.53 | 85.3 | 60-135 |
| ACETONE | 10.00 | 9.06 | 90.6 | 40-140 |
| BENZENE | 10.00 | 10.2 | 102 | 80-120 |
| BROMODICHLOROMETHANE | 10.00 | 9.43 | 94.3 | 75-120 |
| BROMOFORM | 10.00 | 8.95 | 89.5 | 70-130 |
| BROMOMETHANE | 10.00 | 11.0 | 110 | 30-145 |
| CARBON TETRACHLORIDE | 10.00 | 10.3 | 103 | 65-140 |
| CHLOROBENZENE | 10.00 | 9.77 | 97.7 | 80-120 |
| CHLOROETHANE | 10.00 | 11.4 | 114 | 60-135 |
| CHLOROFORM | 10.00 | 8.92 | 89.2 | 65-135 |
| CHLOROMETHANE | 10.00 | 8.91 | 89.1 | 40-125 |
| CIS-1,2-DICHLOROETHENE | 10.00 | 9.83 | 98.3 | 70-125 |
| DIBROMOCHLOROMETHANE | 10.00 | 9.40 | 94.0 | 60-135 |
| ETHYLBENZENE | 10.00 | 10.4 | 104 | 75-125 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/14 |
| Analysis Date : | 10/26/14 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

*Printed: 10/29/14 4:48:20 PM*
*APPL Standard LCS*

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | 9.79 | 97.9 | 50-140 |
| METHYL TERT-BUTYL ETHER | 10.00 | 9.21 | 92.1 | 65-125 |
| METHYLENE CHLORIDE | 10.00 | 9.94 | 99.4 | 55-140 |
| STYRENE | 10.00 | 11.1 | 111 | 65-135 |
| TETRACHLOROETHENE | 10.00 | 9.14 | 91.4 | 45-150 |
| TOLUENE | 10.00 | 10.5 | 105 | 75-120 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | 9.32 | 93.2 | 60-140 |
| TRICHLOROETHENE | 10.00 | 9.30 | 93.0 | 70-125 |
| VINYL CHLORIDE | 10.00 | 7.75 | 77.5 | 50-145 |
| XYLENES (TOTAL) | 30.0 | 31.3 | 104 | 75-130 |
| SURROGATE: 1,2-DICHLOROETHANE- | 27.7 | 24.3 | 87.7 | 70-120 |
| SURROGATE: 4-BROMOFLUOROBENZ | 22.2 | 26.5 | 119 | 75-120 |
| SURROGATE: DIBROMOFLUOROMETH | 27.2 | 23.9 | 88.0 | 85-115 |
| SURROGATE: TOLUENE-D8 (S) | 26.2 | 27.6 | 106 | 85-120 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/14 |
| Analysis Date : | 10/26/14 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

*Printed: 10/29/14 4:48:20 PM*
*APPL Standard LCS*

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L05.D
Acq On : 26 Oct 14 12:35
Sample : 141026A LCS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 395328 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 342336 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 219328 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 205484 | 23.85643 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 87.819% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 221268 | 24.25182 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 87.567% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 669448 | 27.59167 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 105.513% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 245134 | 26.50612 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 119.230% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 41407 | 8.38250 ppb | 95 |
| 3) Freon 114 | 1.10 | 85 | 42122 | 9.37883 ppb | 100 |
| 4) Chloromethane | 1.14 | 50 | 71040 | 8.90933 ppb | 98 |
| 5) Vinyl chloride | 1.22 | 62 | 75437 | 7.75384 ppb | 97 |
| 6) Bromomethane | 1.45 | 94 | 56885 | 11.01269 ppb | 95 |
| 7) Chloroethane | 1.53 | 64 | 42336 | 11.39178 ppb | 94 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 157465 | 9.91517 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 102283 | 8.66175 ppb | 100 |
| 10) Acrolein | 2.10 | 56 | 108940 | 122.89176 ppb | 92 |
| 11) Acetone | 2.25 | 43 | 19700 | 9.05570 ppb | 97 |
| 12) Freon-113 | 2.20 | 101 | 67673 | 9.94121 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 104697 | 9.45646 ppb | 99 |
| 14) t-Butanol | 2.87 | 59 | 27756 | 114.01611 ppb | 99 |
| 15) Acetonitrile | 2.52 | 41 | 110531 | 110.98095 ppb | 94 |
| 16) Methyl Acetate | 2.59 | 43 | 60984 | 9.90002 ppb | 99 |
| 17) Iodomethane | 2.31 | 142 | 27784 | 11.45788 ppb | 92 |
| 18) Acrylonitrile | 2.96 | 52 | 18857 | 8.92505 ppb | 87 |
| 19) Methylene chloride | 2.67 | 84 | 80079 | 9.93936 ppb | 93 |
| 20) Carbon disulfide | 2.36 | 76 | 184431 | 10.32565 ppb | 98 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 162171 | 9.21225 ppb | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 71924 | 9.31835 ppb | 96 |
| 23) Diisopropyl Ether | 3.71 | 45 | 191840 | 9.29108 ppb | 98 |
| 24) 1,1-DCA | 3.53 | 63 | 127377 | 8.64363 ppb | 98 |
| 25) Hexane | 3.36 | 57 | 59485 | 10.22840 ppb | 95 |
| 26) Vinyl Acetate | 3.71 | 43 | 42048 | 9.22770 ppb | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 173049 | 9.94114 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 26317 | 9.57894 ppb | 97 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 82543 | 9.82849 ppb | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 41448 | 11.68009 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 140419 | 8.91569 ppb | 98 |
| 32) Bromochloromethane | 4.75 | 128 | 40978 | 9.45196 ppb | 98 |
| 34) 1,1,1-TCA | 5.10 | 97 | 118260 | 9.53752 ppb | 95 |
| 35) Cyclohexane | 5.16 | 41 | 52421 | 10.09780 ppb | 89 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 90766 | 10.44364 ppb | 94 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 183117 | 11.46820 ppb # | 88 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 102773 | 10.29663 ppb | 98 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 172309 | 9.98603 ppb | 98 |
| 41) 1,2-DCA | 5.62 | 62 | 103352 | 10.22212 ppb | 94 |
| 42) Benzene | 5.58 | 78 | 292495 | 10.24920 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L05.D
Acq On : 26 Oct 14 12:35
Sample : 141026A LCS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 73100 | 9.29627 | ppb | | 96 |
| 44) 2-Pentanone | 6.63 | 43 | 626443 | 124.01237 | ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 84864 | 9.39427 | ppb | | 98 |
| 46) Bromodichloromethane | 6.95 | 83 | 108807 | 9.42543 | ppb | # | 99 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 87477 | 10.03376 | ppb | | 94 |
| 48) Dibromomethane | 6.75 | 93 | 49174 | 9.13782 | ppb | | 94 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 5800 | 7.27941 | ppb | | 90 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 51189 | 8.52704 | ppb | | 97 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 62160 | 9.21664 | ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 114168 | 9.06373 | ppb | | 93 |
| 53) Toluene | 7.78 | 91 | 311052 | 10.53300 | ppb | | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 102943 | 9.32392 | ppb | | 94 |
| 55) 1,1,2-TCA | 8.21 | 83 | 58442 | 9.15299 | ppb | | 96 |
| 56) 2-Hexanone | 8.50 | 43 | 33402 | 8.69529 | ppb | # | 87 |
| 59) 1,2-EDB | 8.69 | 107 | 67116 | 9.53586 | ppb | | 88 |
| 60) Tetrachloroethene | 8.34 | 166 | 92261 | 9.14457 | ppb | | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 79024 | 10.27091 | ppb | | 98 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 85284 | 9.15096 | ppb | | 91 |
| 63) m&p-Xylene | 9.46 | 106 | 253746 | 21.20308 | ppb | | 95 |
| 64) o-Xylene | 9.85 | 106 | 112848 | 10.05204 | ppb | | 95 |
| 65) Styrene | 9.86 | 104 | 197591 | 11.14186 | ppb | | 97 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 111502 | 9.56486 | ppb | | 94 |
| 68) Dibromochloromethane | 8.60 | 129 | 81891 | 9.39966 | ppb | | 95 |
| 69) Chlorobenzene | 9.21 | 112 | 212406 | 9.77337 | ppb | | 96 |
| 70) Ethylbenzene | 9.34 | 91 | 317226 | 10.41562 | ppb | | 99 |
| 71) Bromoform | 10.02 | 173 | 56319 | 8.94915 | ppb | | 91 |
| 73) Isopropylbenzene | 10.22 | 105 | 282426 | 10.15062 | ppb | | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 95110 | 10.90937 | ppb | | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 26982 | 9.49647 | ppb | | 97 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 17486 | 9.95836 | ppb | | 92 |
| 77) Bromobenzene | 10.49 | 156 | 96604 | 10.19270 | ppb | | 99 |
| 78) n-Propylbenzene | 10.63 | 91 | 354576 | 10.41515 | ppb | | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 325167 | 10.87192 | ppb | | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 240297 | 11.00036 | ppb | | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 293984 | 11.20395 | ppb | | 92 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 288723 | 11.11637 | ppb | | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 219351 | 10.42894 | ppb | | 100 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 273459 | 10.76811 | ppb | | 95 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 332725 | 10.72983 | ppb | | 99 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 289073 | 10.86622 | ppb | | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 127262 | 10.12303 | ppb | | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 197395 | 10.73029 | ppb | | 97 |
| 89) 1,4-DCB | 11.53 | 146 | 206895 | 10.41079 | ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 258804 | 10.54198 | ppb | | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 181383 | 10.04895 | ppb | | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 61810 | 10.78959 | ppb | | 94 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 12280 | 10.61992 | ppb | | 94 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 106615 | 8.71957 | ppb | | 99 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 72414 | 9.79475 | ppb | | 94 |
| 96) Naphthalene | 13.72 | 128 | 123488 | 9.16406 | ppb | | 98 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 110689 | 9.16760 | ppb | | 95 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

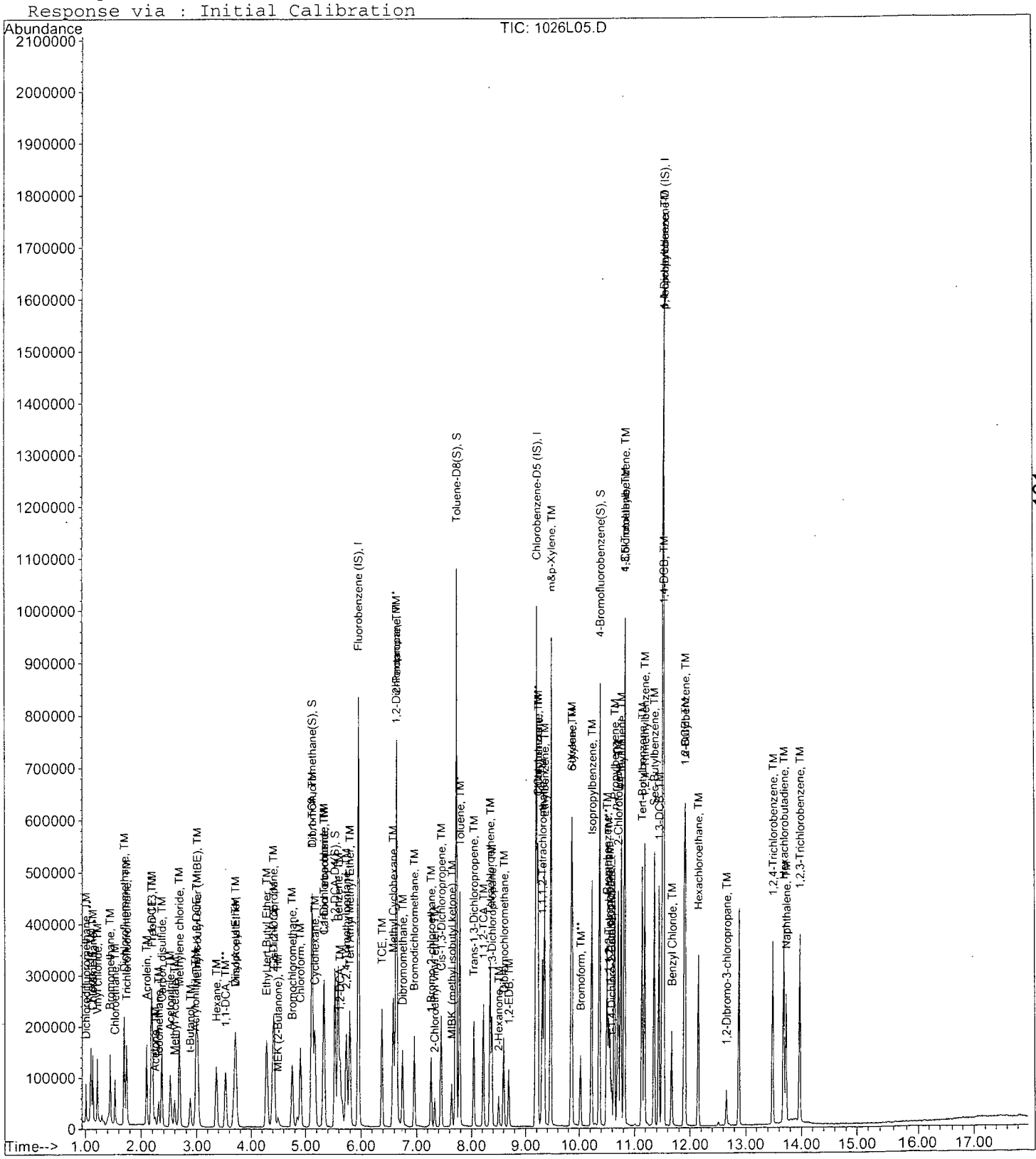
Data File : M:\LOKI\DATA\141024\1026L05.D
Acq On : 26 Oct 14 12:35
Sample : 141026A LCS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 15:44 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



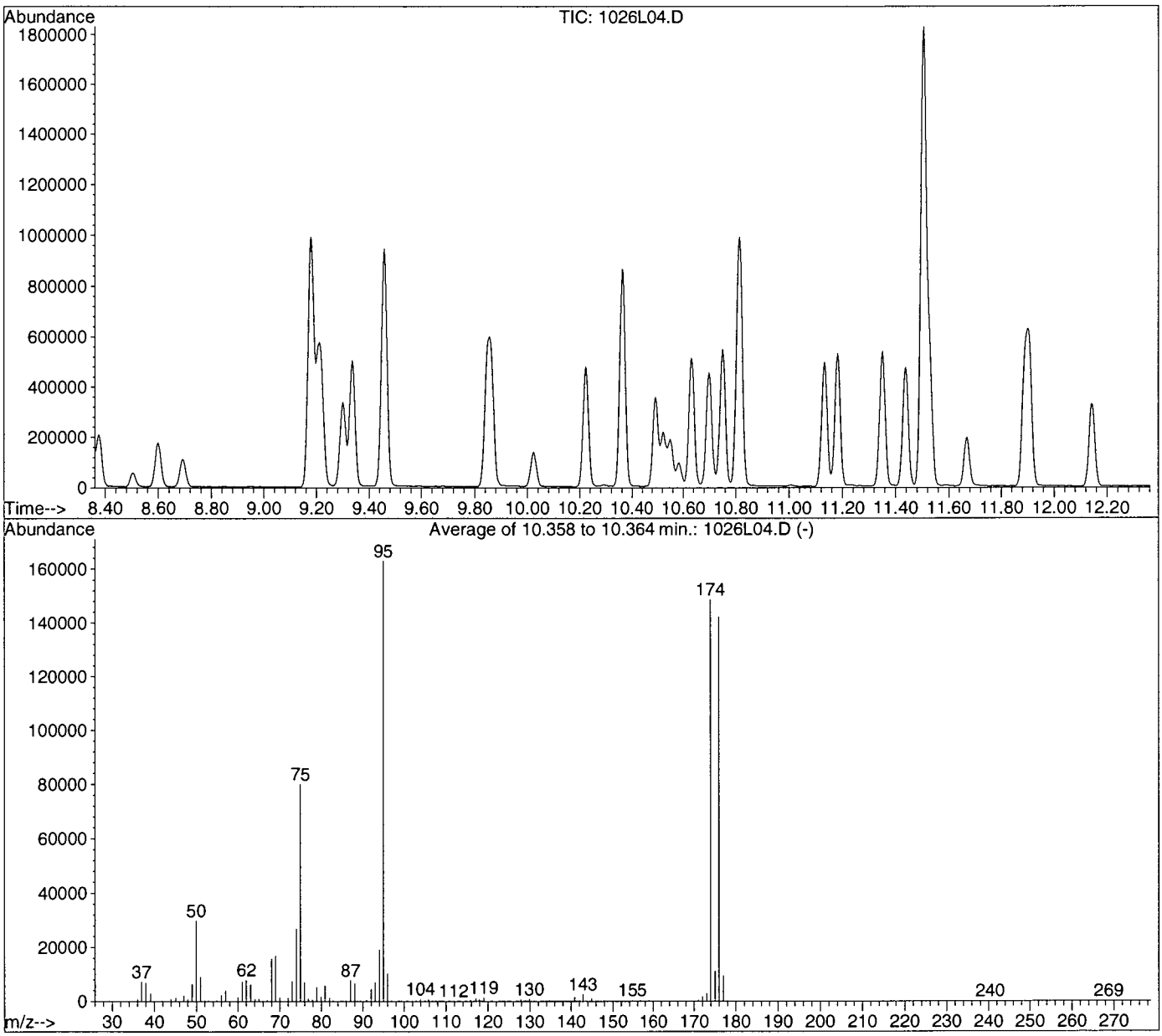

161

BFB

Data File : M:\LOKI\DATA\141024\1026L04.D
Acq On : 26 Oct 14 12:07
Sample : 10ug/L Std 10-26-14(CCV)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2916

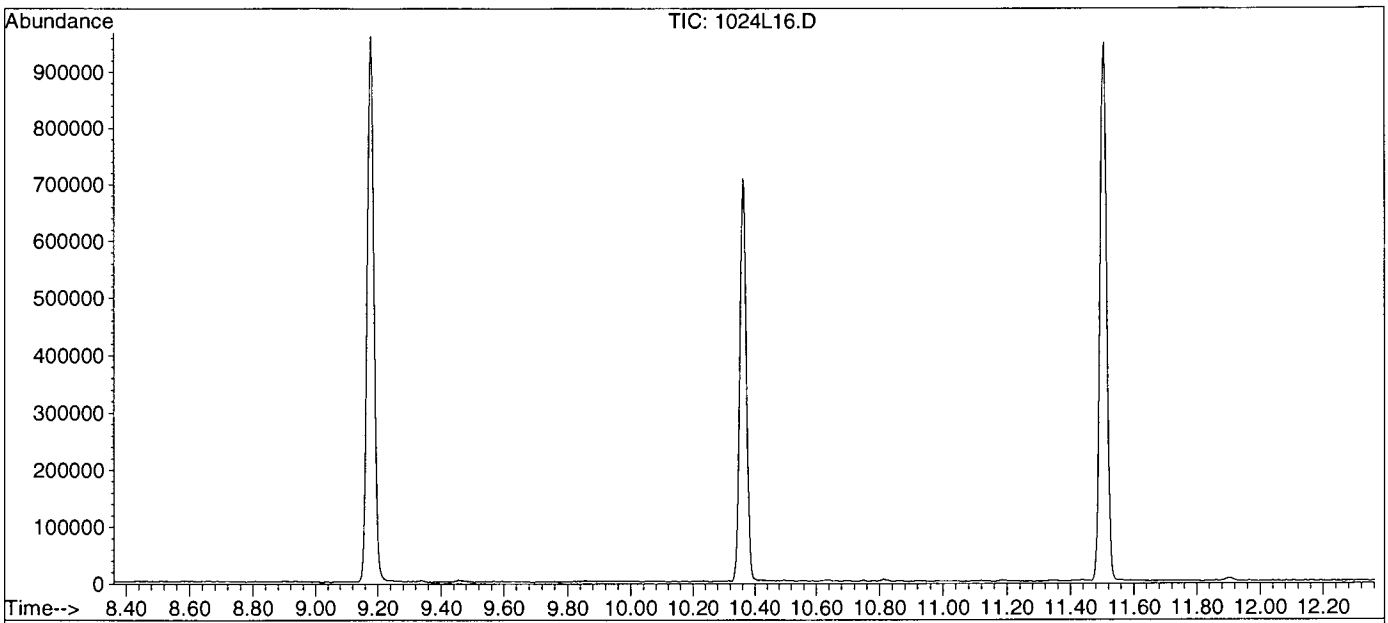
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 18.3 | 29760 | PASS |
| 75 | 95 | 30 | 60 | 49.1 | 79973 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 162901 | PASS |
| 96 | 95 | 5 | 9 | 6.4 | 10350 | PASS |
| 173 | 174 | 0.00 | 2 | 1.9 | 2818 | PASS |
| 174 | 95 | 50 | 100 | 91.2 | 148608 | PASS |
| 175 | 174 | 5 | 9 | 7.6 | 11258 | PASS |
| 176 | 174 | 95 | 101 | 95.7 | 142229 | PASS |
| 177 | 176 | 5 | 9 | 6.7 | 9514 | PASS |

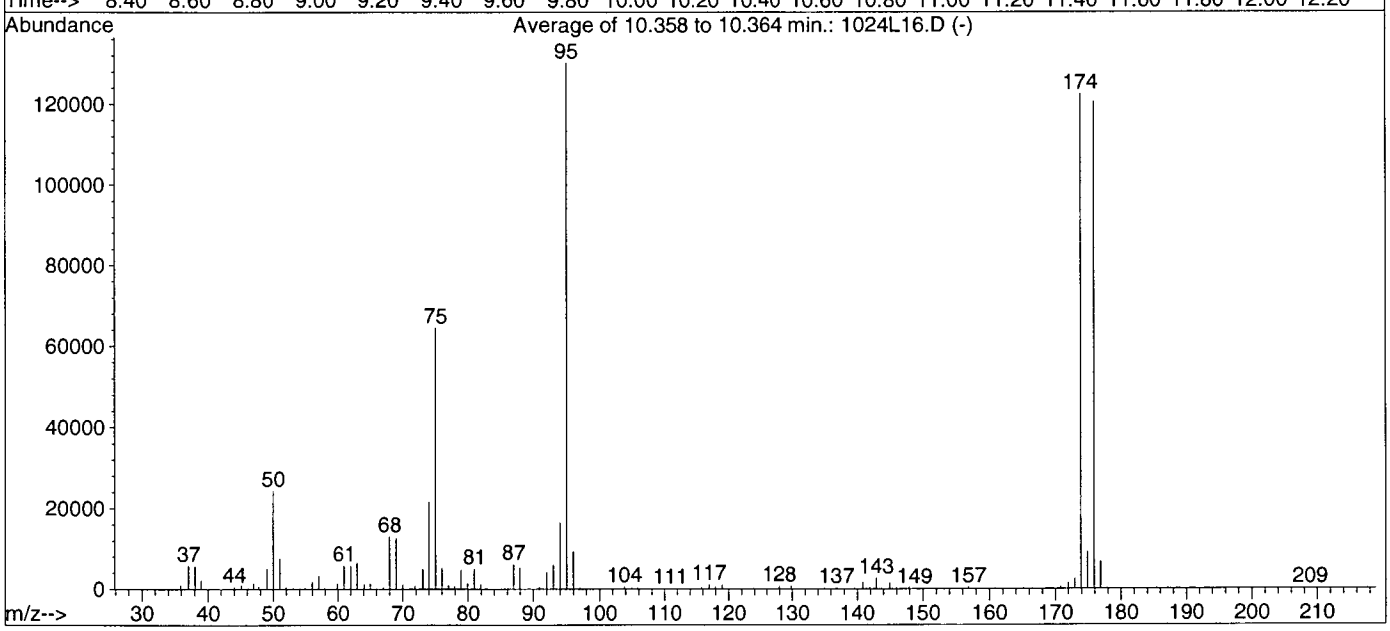
BFB

Data File : M:\LOKI\DATA\141024\1024L16.D
Acq On : 24 Oct 14 17:30
Sample : 25ug/mL BFB Std 09-30-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 15
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2916

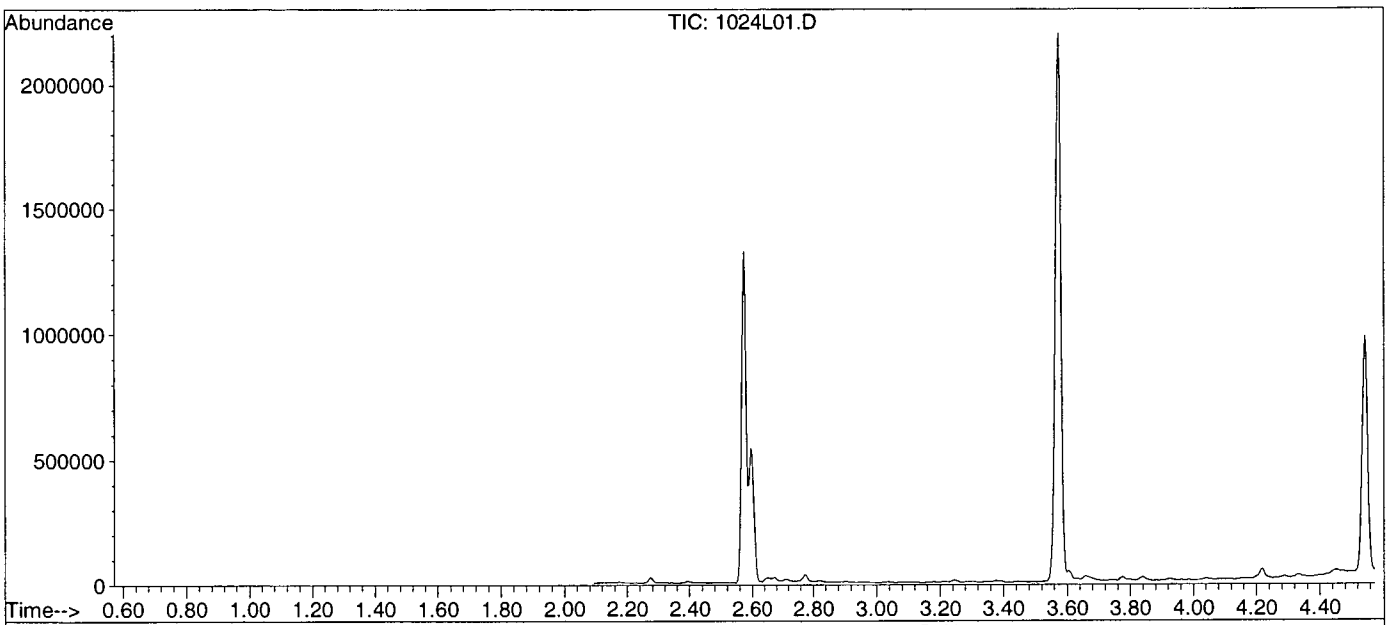
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 18.7 | 24299 | PASS |
| 75 | 95 | 30 | 60 | 49.6 | 64541 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 130128 | PASS |
| 96 | 95 | 5 | 9 | 7.2 | 9314 | PASS |
| 173 | 174 | 0.00 | 2 | 2.0 | 2467 | PASS |
| 174 | 95 | 50 | 100 | 94.1 | 122392 | PASS |
| 175 | 174 | 5 | 9 | 7.5 | 9131 | PASS |
| 176 | 174 | 95 | 101 | 98.5 | 120525 | PASS |
| 177 | 176 | 5 | 9 | 5.6 | 6711 | PASS |

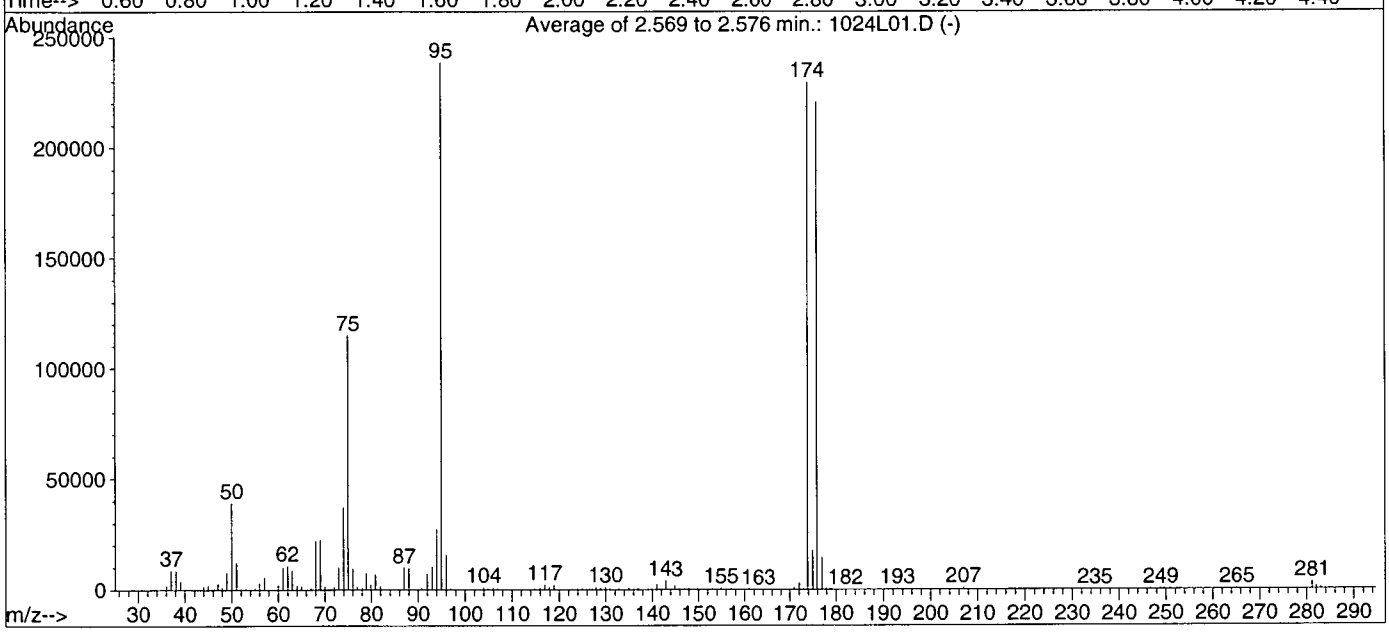
BFB

Data File : M:\LOKI\DATA\141024\1024L01.D
Acq On : 24 Oct 14 10:32
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 149, 150, 151; Background Corrected with Scan 140

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 16.4 | 39154 | PASS |
| 75 | 95 | 30 | 60 | 48.1 | 114891 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 238635 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 15881 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 96.2 | 229525 | PASS |
| 175 | 174 | 5 | 9 | 7.7 | 17629 | PASS |
| 176 | 174 | 95 | 101 | 96.1 | 220501 | PASS |
| 177 | 176 | 5 | 9 | 6.6 | 14538 | PASS |



1024L01.D LALLW2.M Fri Nov 14 16:25:11 2014

9/26/14
RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **09/26/14U** | | | | | | | |
| **50ug/ml VOC Std#5** | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940-33548 | 09/15/14F | 04/15/17 | 50 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33222 | 09/26/14F | 12/16/15 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1900 |
| **09/26/14V** | | | | | | | |
| **50ug/ml VOC Std#6** | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120023-03-SS | VOC'S 54 COMP. | 2000 | 208329-32741 | 09/26/14G | 05/02/15 | 50 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32960 | 09/26/14H | 01/23/15 | 50 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 232116-33844 | 09/15/14G | 10/08/14 | 50 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-33678 | 09/26/14I | 03/12/15 | 100 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33531 | 09/26/14J | 04/07/16 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1650 |
| **09/26/14W** | | | | | | | |
| **250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P** | | | | | | | |
| Exp:10/26/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS). | 2000 | 189667-33305 | 09/03/14K | 05/18/15 | 250 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 234095-33910 | 09/03/14L | 08/25/14 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1700 |

9/29/14
RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI

| Exp. Date | 09/30/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | mL |
| 09-29-14A | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 09-29-14B | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 09-29-14C | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 09-29-14D | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 09-29-14E | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 09-29-14F | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 09-29-14G | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 09-29-14H | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 09-29-14I | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

9/29/14
RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp. Date | 09/30/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | mL |
| 09-29-14J | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 09-29-14K | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 09-29-14L | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 09-29-14M | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 09-29-14N | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 09-29-14O | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 09-29-14P | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 09-29-14Q | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

9/30/14
RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 09-30-14A | | | | | | | |
| **25ug/ml BFB STD** | | | Conc. | | Date | Exp. | |
| Exp: 10/30/14 | | | ug/ml | Lot # | CODE | Date | ul |
| O2SI | 020130-03 | 4-Bromofluorobenzene | 2500 | 195-06-[illegible]42/1 | 09-30-14A | 09/15/15 | 20 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1980 |

9/30/14
RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp. Date: | 10/01/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | mL |
| 09-30-14B | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 09-30-14C | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 09-30-14D | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 09-30-14E | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 09-30-14F | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 09-30-14G | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 09-30-14H | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 09-30-14I | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

GC/MS STANDARD PREPARATION BOOK # 63 PAGE #

10/08/14 C-
RS

VOC Mix 4-3, 2,000 mg/L, 1 mL
120166-01
Lot # 229587 Storage ≤ 6 Degrees C Expiry 29/May/2016
Solv: P/T Methanol
VOC Mix 4-3, 2000mg/L
Lot #: 229587 - 33670
Rec: 6/3/14 MFR exp. 5/29/16

RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10/08/14D | | | | | | | |
| 50ug/ml Vol Work Std #7 | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 120016-03 | Gas Mix | 2000 | 231710-33814 | 10/08/14A | 03/30/17 | 100 |
| 02SI | 020049-02 | HEXACHLOROETHANE | 1000 | 234821-33990 | 09/03/14B | 08/26/16 | 200 |
| 02SI | 020228-02 | Benzyl Chloride | 1000 | 200704-33538 | 09/15/13B | 12/10/14 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3500 |
| 10/08/14E | | | | | | | |
| 50ug/ml Vol Work Std #1 | | | | | | | |
| Exp:11/08/14 | | | | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 020145-02-02 | 2-CEVE | 2000 | 229586-33689 | 09/26/14D | 06/03/17 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1950 |
| 10/08/14F | | | | | | | |
| 50ug/ml Vol Work Std #8 | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 122039-02 | Volatile Mix, 20-29 | 2000 | 210086-32534 | 09/26/14B | 06/06/15 | 100 |
| 02SI | 120023-03 | VOC'S-54 COMP | 2000 | 216122-32921 | 10/08/14B | 10/11/15 | 100 |
| 02SI | 020232-02 | Vinyl Acetate | 2000 | 229682-33659 | 09/03/14E | 08/28/14 | 100 |
| 02SI | 020620-02 | n-Hexane | 1000 | 195505-33674 | 09/26/13C | 09/09/17 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3500 |
| 10/08/14G | | | | | | | |
| 50ug/ml Vol Work Std #2 | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| Supplier | ID # | ID | ug/ml | | | | |
| 02SI | 121020-05 | HSL'S-Ketone Solution | 2000 | 232379-33883 | 09/26/14E | 10/10/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3900 |
| | | 10/08/14H | | | | | |
| | | 5ug/ml Vol Work Std #9 | | | | | |
| | | SOURCES | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml Vol Work Std #7 | | 10/08/14D | 11/08/14 | 200 | |
| | | 50ug/ml Vol Work Std #8 | | 10/08/14F | 11/08/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1600 | |
| | | 10/08/14I | | | | | |
| | | 5ug/ml Vol Work Std #10 | | | | | |
| | | SOURCES | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml Vol Work Std #1 | | 10/08/14E | 11/08/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1800 | |
| | | 10/08/14J | | | | | |
| | | 5ug/ml Vol Work Std #12 | | | | | |
| | | SOURCES | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml Vol Work Std #2 | | 10/08/14G | 11/08/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1800 | |
| 10/08/14K | | | | | | | |
| 50ug/ml 8260 Surrogate | | | Conc. | | Date | Exp. | |
| Exp:11/08/14 | | | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120002-01 | 8260B Surr Solution | 2000 | 185763-33556 | 10/06/14B | 02/19/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3900 |
| 10/08/14L | | | | | | | |
| 5.0ug/ml 8260 Surrogate | | | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml 8260 Surrogate | | 10/08/14K | 11/08/14 | 200 | |
| J&T Brand | | Purge & Trap MeOH | | 09/25/14 | 07/09/18 | 1800 | |
| 10/08/14M | | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P | | | | | | | |
| Exp:11/08/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | ul |
| 02SI | 120166-01 | Volatile Mix 4-3 | 2000 | 229254-33670 | 10/08/14C | 05/29/16 | 1500 |
| 02SI | 020229-09 | Acrolein | 10000 | 235659-34043 | 09/15/14E | 10/20/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3400 |

10/08/14
RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10/08/14N | | | | | | | |
| 50ug/ml VOC Std#5 | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940 33548 | 09/15/14F | 04/15/17 | 50 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33222 | 09/26/14F | 12/16/15 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1900 |
| 10/08/14O | | | | | | | |
| 50ug/ml VOC Std#6 | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120023-03-SS | VOC'S 54 COMP. | 2000 | 208329-32741 | 09/26/14G | 05/02/15 | 50 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32960 | 09/26/14H | 01/23/15 | 50 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 232116-33844 | 09/15/14G | 10/08/14 | 50 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-33678 | 09/26/14I | 03/12/15 | 100 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33531 | 09/26/14J | 04/07/16 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1650 |
| 10/08/14P | | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P | | | | | | | |
| Exp:11/08/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS) | 2000 | 189667-33305 | 09/03/14K | 05/18/15 | 250 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 234095-33910 | 09/03/14L | 08/25/14 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1700 |

10/08/14 RS

See Thor 10/8/14 Soil curve on page 112 - DMB 10/21/14

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-MAX

| Exp: Date: | 10/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | mL |
| 10-10-14A | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-10-14B | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-10-14C | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-10-14D | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-10-14E | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-10-14F | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-10-14G | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-10-14H | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-10-14I | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

10/10/14 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR

| Exp: Date: | 10/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | mL |
| 10-10-14J | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-10-14K | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-10-14L | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-10-14M | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-10-14N | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-10-14O | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-10-14P | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-10-14Q | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-10-14R | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

10/10/14 RS

10/13/14 RS

A-

EPA Method 502/524
Fortification Solution, 3-1,
1000 mg/L, 1 ml
122450-02
Lot # 212292
Storage ≤ -10 Degrees C
Expiry 7/23/15
Solv: P/T Methanol
For R&D only. Not licensed commercially. Made in the USA.

EPA Method 502/524 Fortification
Lot #: 212292 - 33765
Rec: 7/25/13 MFG exp 7/23/15

RS

# GC/MS STANDARD PREPARATION BOOK # 163 PAGE #

10-8-14

| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/09/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14P | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-08-14Q | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 10-08-14R | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 10-08-14S | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 10-08-14T | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 10-08-14U | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 10-08-14V | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 10-08-14W | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 10-08-14X | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

10/21/14
RS

| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/22/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14P | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp.11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-21-14A | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 10-21-14B | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 10-21-14C | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 10-21-14D | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 10-21-14E | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 10-21-14F | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 10-21-14G | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 10-21-14H | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

10/23/14
RS

| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/24/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14P | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp.11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-23-14A | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 10-23-14B | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 10-23-14C | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 10-23-14D | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 10-23-14E | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 10-23-14F | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 10-23-14G | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 10-23-14H | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

10/24/14
RS

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/25/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp 11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp:11-08-14 | Exp.11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-24-14A | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-24-14B | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-24-14C | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-24-14D | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-24-14E | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-24-14F | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-24-14G | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-24-14H | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-24-14I | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

10/24/14
RS

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-MAX | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/25/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp.11-08-14 | Exp:11-08-14 | mL |
| 10-24-14J | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-24-14K | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-24-14L | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-24-14M | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-24-14N | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-24-14O | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-24-14P | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-24-14Q | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-24-14R | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

*10/27/14 Max water curve on pg. 118 RS 11/04/14

# Injection Log

Directory: M:\LOKI\DATA\141024\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 1 | 1024L01.D | 1 | 25ug/mL BFB Std 09-30-14 | 2uL | 24 Oct 14 10:32 |
| 2 | 4 | 1024L05.D | 1 | 0.1ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 12:19 |
| 3 | 5 | 1024L06.D | 1 | 0.3ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 12:47 |
| 4 | 6 | 1024L07.D | 1 | 0.5ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 13:16 |
| 5 | 7 | 1024L08.D | 1 | 1.0ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 13:44 |
| 6 | 8 | 1024L09.D | 1 | 5.0ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 14:12 |
| 7 | 9 | 1024L10.D | 1 | 10ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 14:41 |
| 8 | 10 | 1024L11.D | 1 | 20ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 15:09 |
| 9 | 11 | 1024L12.D | 1 | 40ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 15:37 |
| 10 | 12 | 1024L13.D | 1 | 100ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 16:05 |
| 11 | 15 | 1024L16.D | 1 | 25ug/mL BFB Std 09-30-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 17:30 |
| 12 | 17 | 1024L18.D | 1 | 10ug/L Std 10-24-14(SS) | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 18:27 |
| 13 | 1 | 1026L01.D | 1 | 25ug/mL BFB Std 09-30-14 | 2uL | 26 Oct 14 10:43 |
| 14 | 3 | 1026L04.D | 1 | 10ug/L Std 10-26-14(CCV) | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 12:07 |
| 15 | 4 | 1026L05.D | 1 | 141026A LCS-1WL | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 12:35 |
| 16 | 9 | 1026L10.D | 1 | 141026A BLK-1WL | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 14:57 |
| 17 | 11 | 1026L12.D | 1 | AZ05390W02 | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 15:53 |
| 18 | 15 | 1026L16.D | 1 | AZ05389W02 | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 17:46 |
| 19 | 16 | 1026L17.D | 1 | AZ05388W02 | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 18:15 |

74672

# RSK-175

APPL, INC.

# RSK-175
# QC Summary

APPL, INC.

# Method Blank
## MEE

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141022W-05388 - 191410**
Batch ID: #RSK50-141022A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 10/22/14 | 10/22/14 |

Quant Method: RSK175Q.M
Run #: 1022F004
Instrument: Frodo
Sequence: 140305
Initials: LF

*GC SC-Blank-REG MDLs*
*Printed: 11/02/14 9:29:06 PM*

# Laboratory Control Spike Recoveries

## MEE

APPL ID: **141022W-05388 LCS - 191410**
Batch ID: #RSK50-141022A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| METHANE | 26.7 | 26.5 | 25.7 | 99.3 | 96.3 | 72-125 | 3.1 | 30 |

Comments:

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | RSK175Q.M | RSK175Q.M |
| Extraction Date : | 10/22/14 | 10/22/14 |
| Analysis Date : | 10/22/14 | 10/22/14 |
| Instrument : | Frodo | Frodo |
| Run : | 1022F002 | 1022F003 |
| Initials : | LF | |



*Printed: 11/02/14 9:29:08 PM*
*APPL Standard LCSD*

# RSK 175

Form 4

## Blank Summary

Lab Name: APPL, Inc. SDG No: 74672

Case No: 74672 Date Analyzed: 10/22/14

Matrix: WATER Instrument: Frodo

Blank ID: 141022A-BLK Time Analyzed: 2014

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141022A-LCS | Lab Control Spike | 1022F002 | 10/22/14 2005 |
| 141022A-LCSD | Lab Control SpikeD | 1022F003 | 10/22/14 2010 |
| 141022A-BLK | Blank | 1022F004 | 10/22/14 2014 |
| AZ05388 | RHMW07-GW-01 | 1022F012 | 10/22/14 2118 |
| AZ05389 | RHMW07-GW-01FD | 1022F013 | 10/22/14 2122 |

Comments: Batch: #RSK50-141022A

*Printed: 11/02/14 9:29:10 PM*
*Form 4, Blank Summary*

# RSK-175
# Sample Data

APPL, INC.

# MEE

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05388**
QCG: #RSK50-141022A-191410

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| RSK 175 | METHANE | 1.9 | 1.0 | 0.45 | 0.25 | ug/L | 10/22/14 | 10/22/14 |

Quant Method: RSK175Q.M
Run #: 1022F012
Instrument: Frodo
Sequence: 140305
Dilution Factor: 1
Initials: LF

*Printed: 11/20/14 6:10:07 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F012.D Vial: 12
Acq On : 22 Oct 2014 21:18 Operator: lsf
Sample : AZ05388W04 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 20 17:40 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 1101 | 1.920 ppb m |



(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

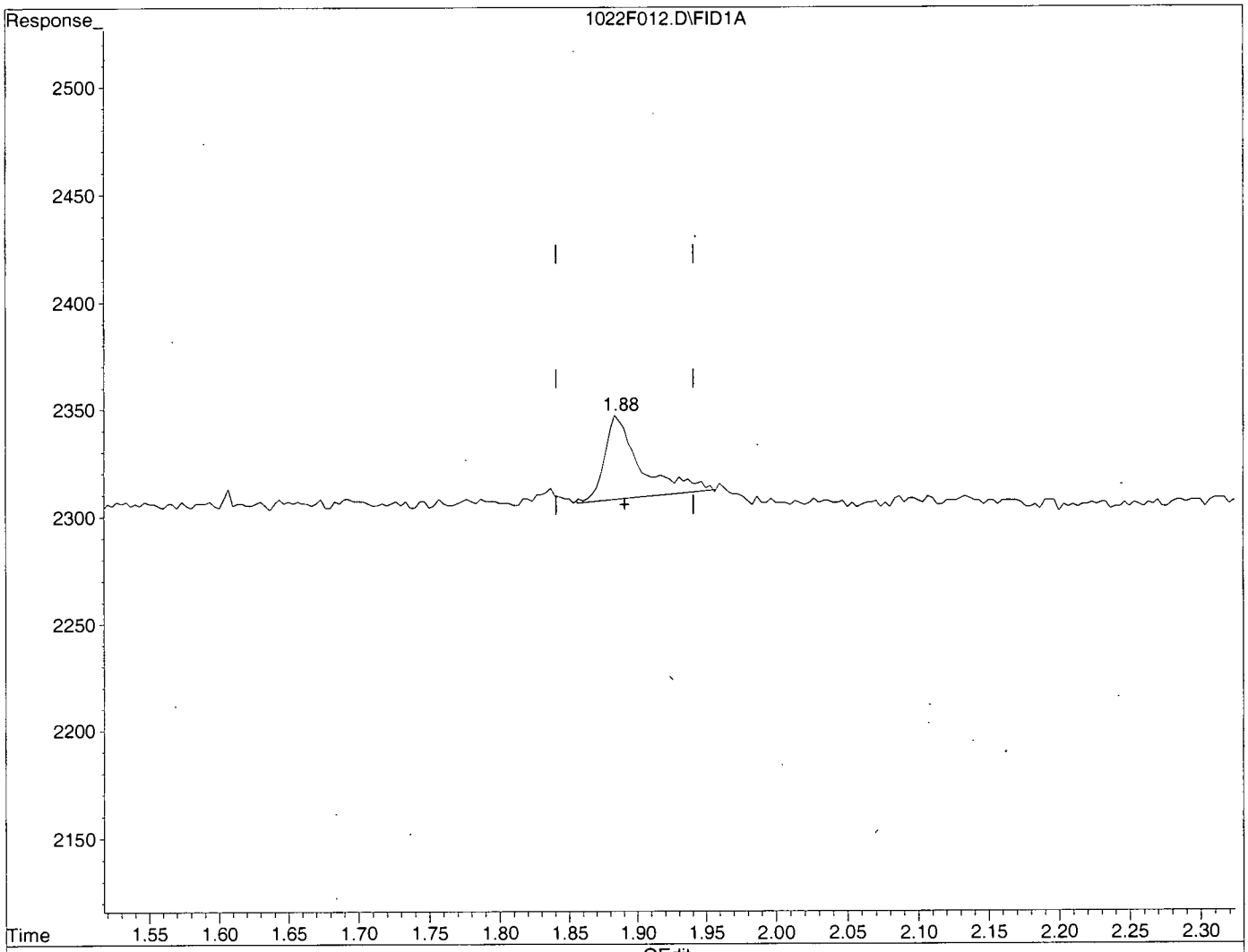
Data File : V:\FRODO\DATA\140305\1022F012.D
Acq On : 22 Oct 2014 21:18
Sample : AZ05388W04
Misc : Water
IntFile : events.e
Quant Time: Oct 22 20:23 2014 Quant Results File: RSK175Q.RES

Vial: 12
Operator: lsf
Inst : Frodo
Multiplr: 1.00

Before M.I.

22 11-25-14

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration




(1) Methane (ATM)

1.89min 0.753ppb

response 685

**AMENDED PAGE**

(+) = Expected Retention Time



1022F012.D RSK175Q.M Thu Nov 20 17:36:56 2014

Quantitation Report

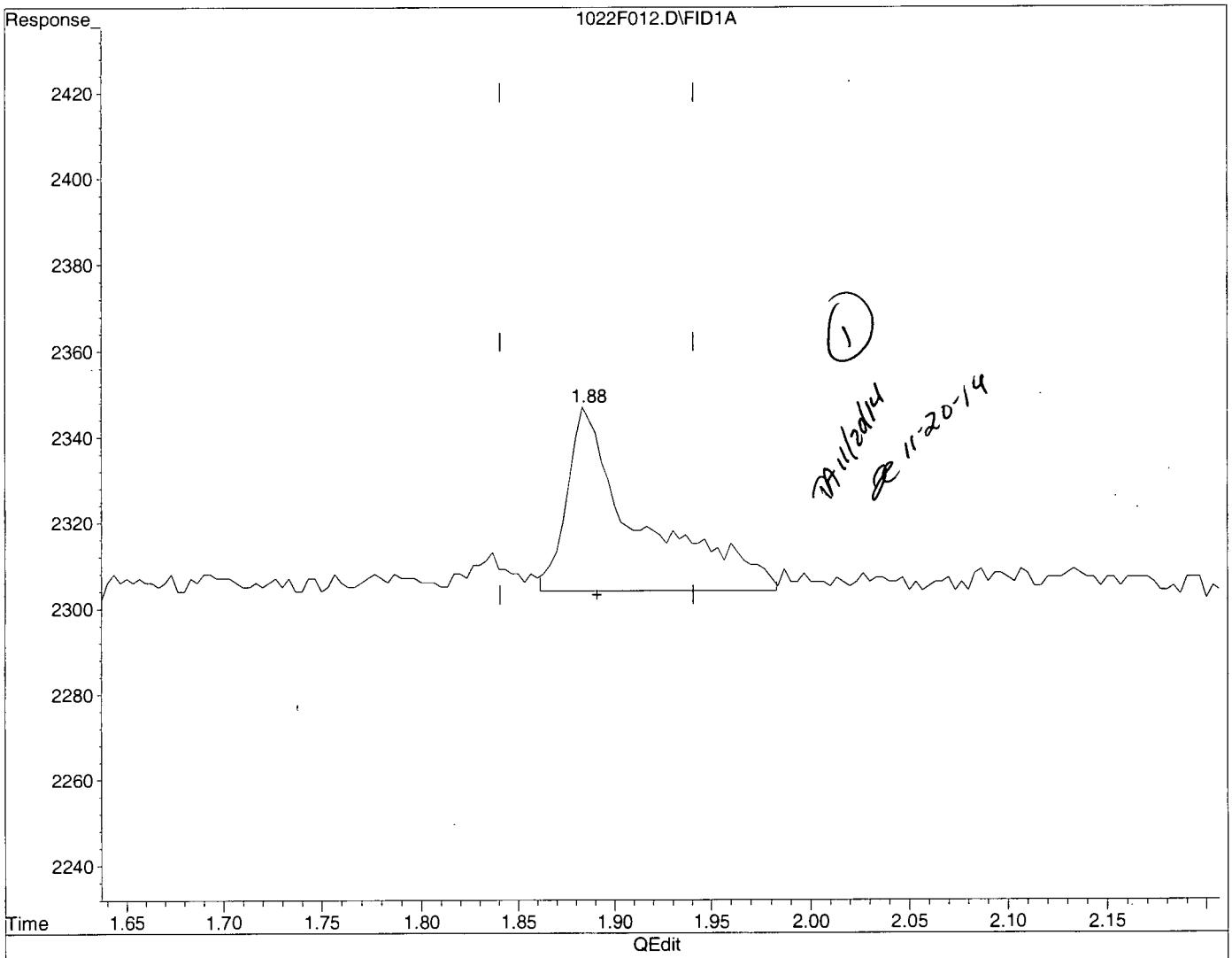
Data File : V:\FRODO\DATA\140305\1022F012.D
Acq On : 22 Oct 2014 21:18
Sample : AZ05388W04
Misc : Water
IntFile : events.e
Quant Time: Oct 22 20:23 2014 Quant Results File: RSK175Q.RES

Vial: 12
Operator: lsf
Inst : Frodo
Multiplr: 1.00

After MI

JE 11-25-14

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration




(1) Methane (ATM)

1.88min 1.920ppb m

response 1101

**ADDED PAGE**

(+) = Expected Retention Time



1022F012.D RSK175Q.M Thu Nov 20 17:40:56 2014

# MEE

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01FD**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05389**
QCG: #RSK50-141022A-191410

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| RSK 175 | METHANE | 2.8 | 1.0 | 0.45 | 0.25 | ug/L | 10/22/14 | 10/22/14 |

| | |
|---|---|
| Quant Method: | RSK175Q.M |
| Run #: | 1022F013 |
| Instrument: | Frodo |
| Sequence: | 140305 |
| Dilution Factor: | 1 |
| Initials: | LF |

*Printed: 11/20/14 6:10:07 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F013.D Vial: 13
Acq On : 22 Oct 2014 21:22 Operator: lsf
Sample : AZ05389W04 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 20 17:40 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 1399 | 2.757 ppb m |

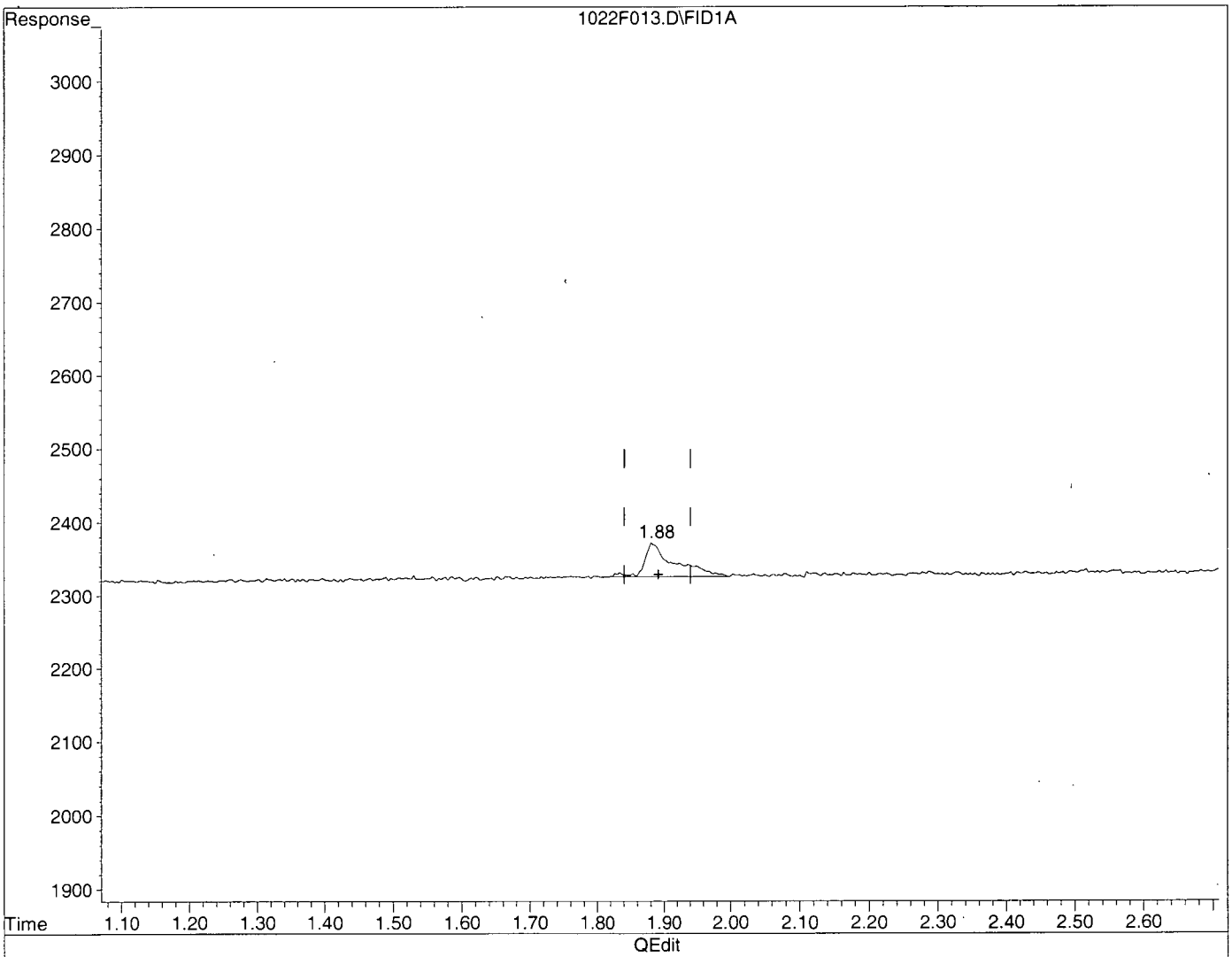


(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : V:\FRODO\DATA\140305\1022F013.D  Vial: 13
Acq On : 22 Oct 2014 21:22  Operator: lsf
Sample : AZ05389W04  Inst : Frodo
Misc : Water  Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 20:27 2014  Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration




(1) Methane (ATM)

1.88min 2.903ppb

response 1451

**AMENDED PAGE**

(+) = Expected Retention Time



1022F013.D RSK175Q.M Tue Nov 18 14:28:55 2014

Quantitation Report

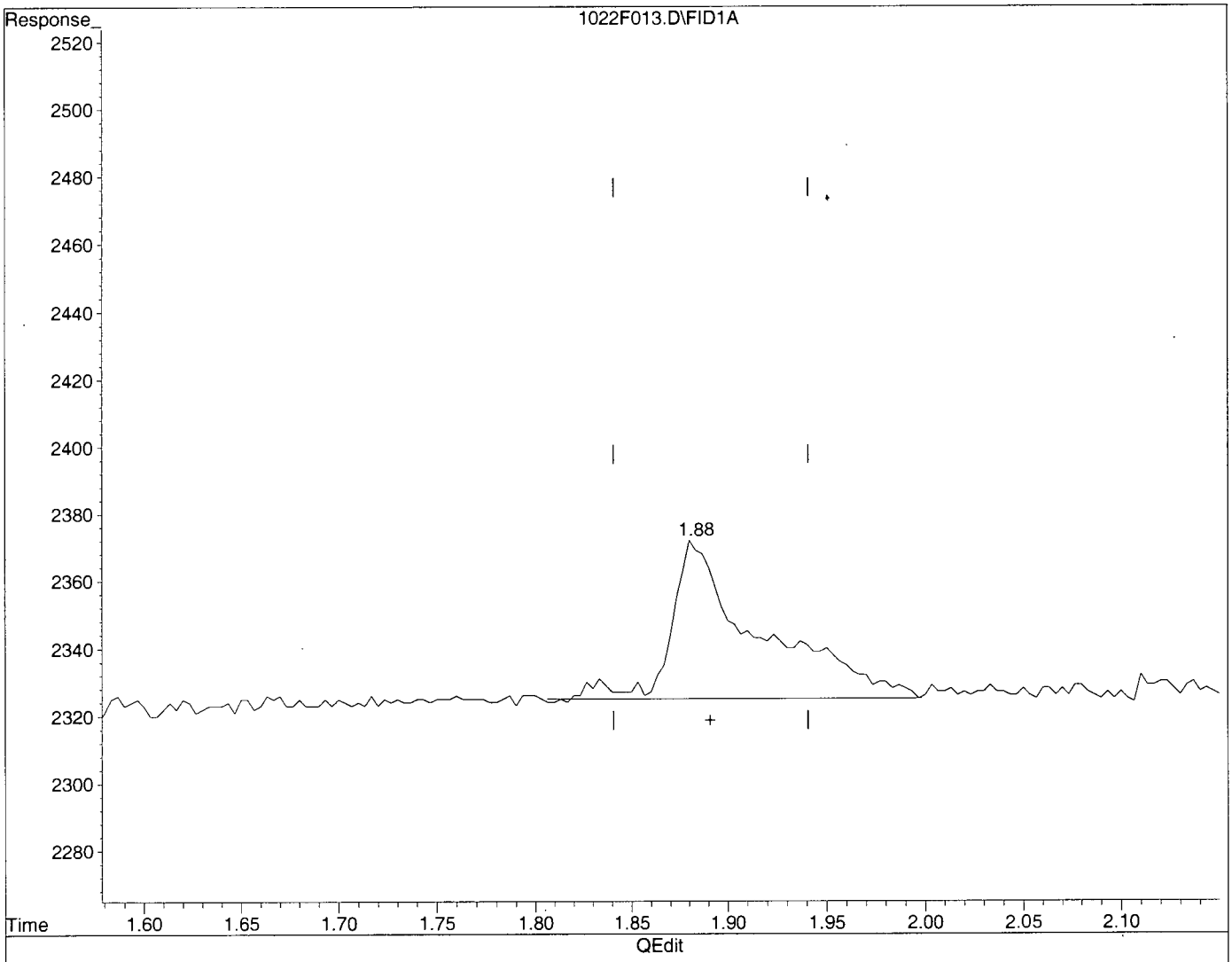
Data File : V:\FRODO\DATA\140305\1022F013.D
Acq On : 22 Oct 2014 21:22
Sample : AZ05389W04
Misc : Water
IntFile : events.e
Quant Time: Oct 22 20:27 2014 Quant Results File: RSK175Q.RES

Vial: 13
Operator: lsf
Inst : Frodo
Multiplr: 1.00

Before M.I.

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

JR 11-25-14




(1) Methane (ATM)

1.88min 2.903ppb

response 1451

**AMENDED PAGE**

(+) = Expected Retention Time



1022F013.D RSK175Q.M Thu Nov 20 17:39:58 2014

Quantitation Report

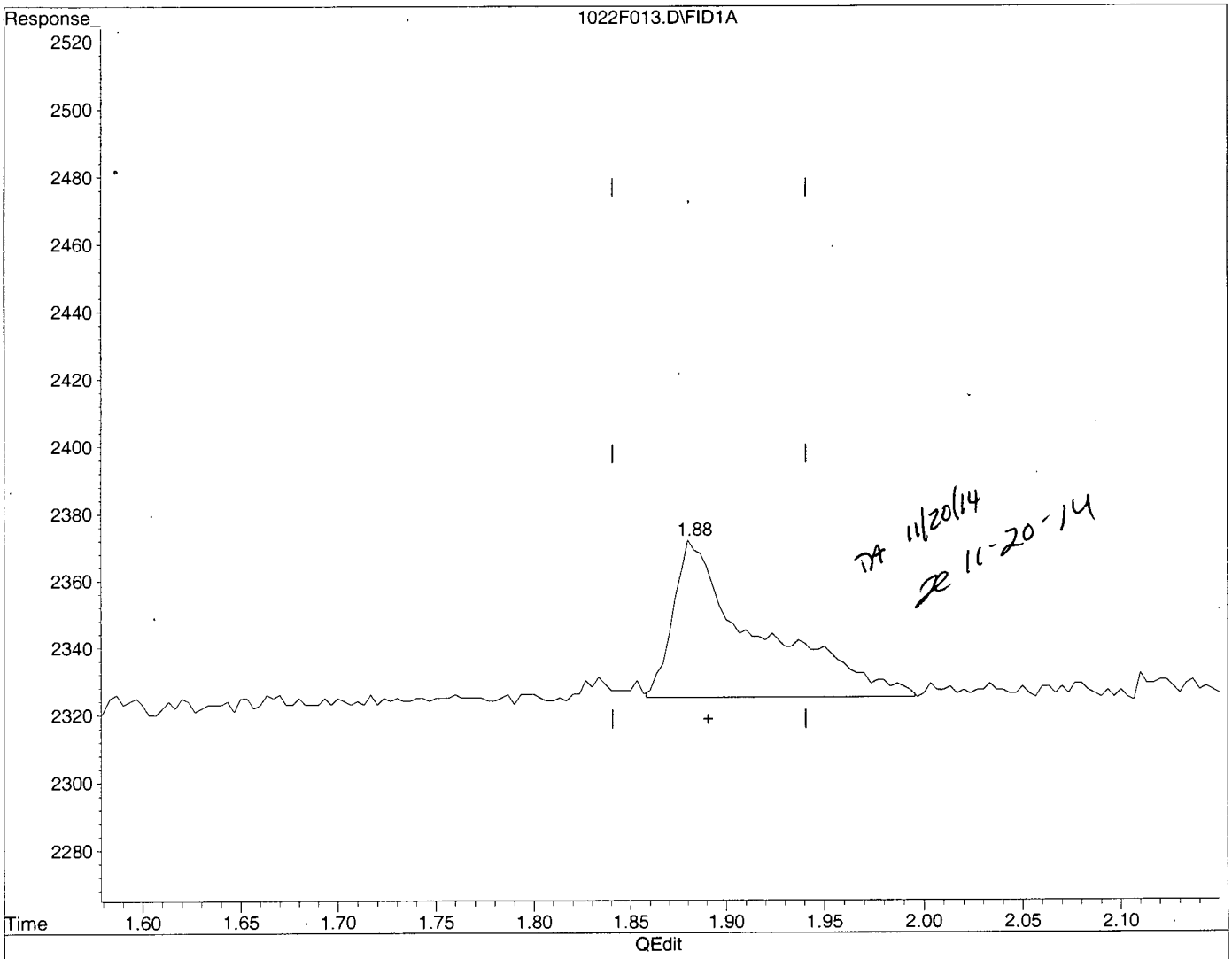
Data File : V:\FRODO\DATA\140305\1022F013.D
Acq On : 22 Oct 2014 21:22
Sample : AZ05389W04
Misc : Water
IntFile : events.e
Quant Time: Oct 22 20:27 2014 Quant Results File: RSK175Q.RES

Vial: 13
Operator: lsf
Inst : Frodo
Multiplr: 1.00

After M.I.

JE 11-24-14

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration




(1) Methane (ATM)

1.88min 2.757ppb m

response 1399

**ADDED PAGE**

(+) = Expected Retention Time



1022F013.D RSK175Q.M Thu Nov 20 17:40:11 2014

# RSK-175
# Calibration Data

APPL, INC.

# Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Initial Cal. Date: 03/06/13
Instrument: Frodo

Initials:

| | | Compound | 1 | 2 | 3 | 4 | 5 | | | | | | Avg | %RSD | | $r^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0306F001.D | 0306F002.D | 0306F003 D | 0306F004.D | 0306F005.D | | | | | | | | | |
| 1 | ATML | Methane | 1275 | 462 | 373 | 359 | 357 | | | | | | 565 | 71 | ATML | 1.00 |
| 2 | ATM | Ethane | 304 | 260 | 315 | 313 | 369 | | | | | | 312 | 12 | ATM | |
| 3 | ATM | Ethene | 351 | 249 | 326 | 328 | 387 | | | | | | 328 | 15 | ATM | |
| 4 | | | | | | | | | | | | | | | | |
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| 35 | | | | | | | | | | | | | | | | |

2.8106706

Compound #1: Methane (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 0.900 | 1147 | | | |
| 2 | 5.100 | 2355 | | | |
| 3 | 13.338 | 4981 | | | |
| 4 | 26.700 | 9581 | | | |
| 5 | 1333.800 | 475739 | | | |
| 6 | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass 0.00

Correction Factor 0.000

Prev | Next | Plot | Page 1 | Page 2 | OK | Cancel | Help

Compound #2: Ethane (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 1.700 | 516 | | | |
| 2 | 9.500 | 2472 | | | |
| 3 | 25.000 | 7865 | | | |
| 4 | 50.000 | 15656 | | | |
| 5 | 2500.100 | 921885 | | | |
| 6 | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass: 0.00

Correction Factor: 0.000

Prev | Next | Plot | Page 1 | Page 2 | OK | Cancel | Help

Compound #3: Ethene (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 1.600 | 562 | | | |
| 2 | 8.900 | 2219 | | | |
| 3 | 23.300 | 7603 | | | |
| 4 | 46.600 | 15290 | | | |
| 5 | 2332.500 | 901927 | | | |
| 6 | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass 0.00

Correction Factor 0.000

Prev | Next | Plot | Page 1 | Page 2 | OK | Cancel | Help

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F001.D Vial: 1
Acq On : 6 Mar 2013 10:46 Operator: lsf
Sample : RSK L-1 03-06-13 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:31 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Thu Mar 07 13:29:20 2013
Response via : Multiple Level Calibration

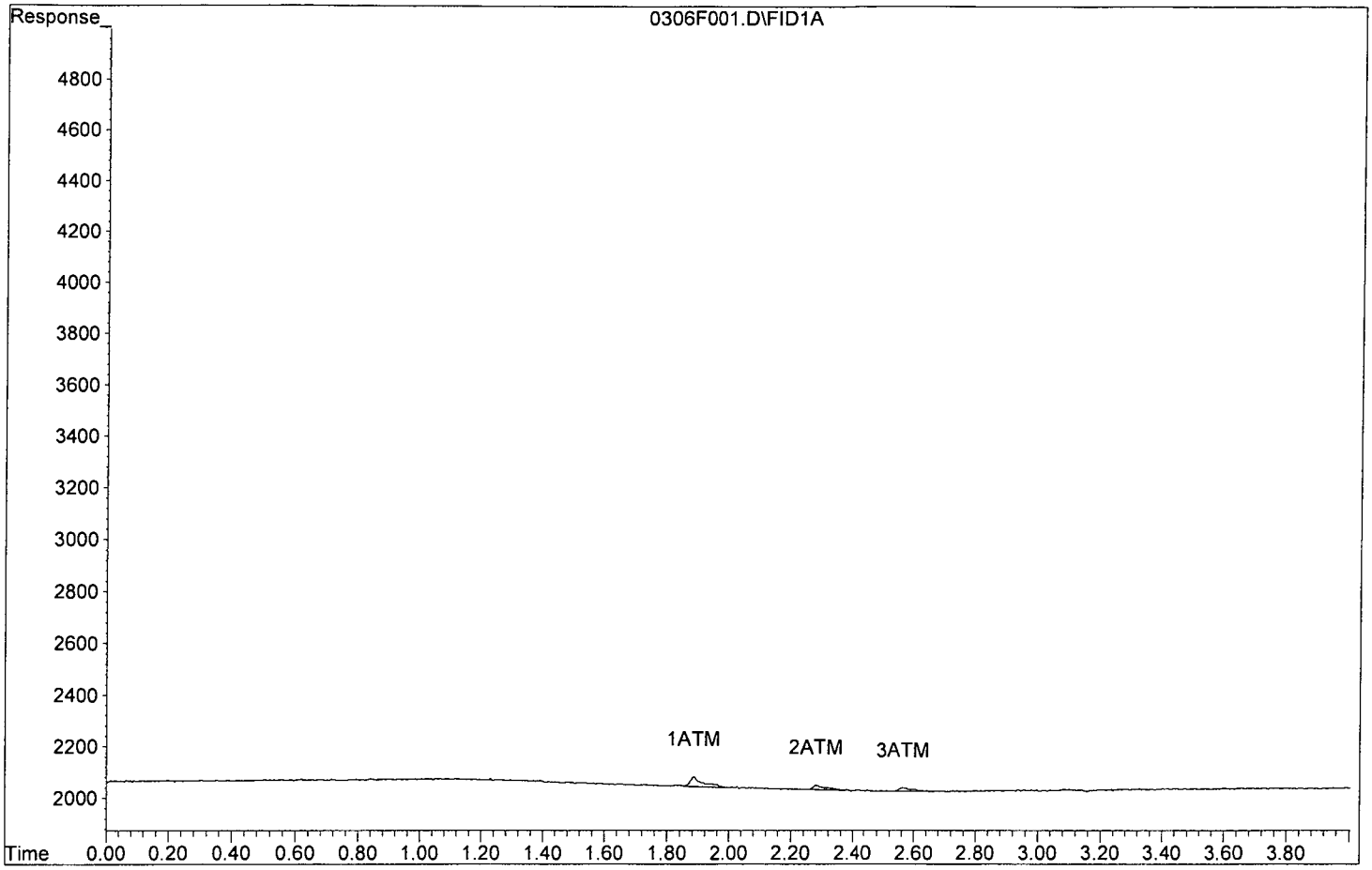
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 1147 | 2.051 ppb |
| 2) ATM Ethane | 2.28 | 516 | 1.654 ppb |
| 3) ATM Ethene | 2.57 | 562 | 1.711 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F001.D
Sample : RSK L-1 03-06-13 LF



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F002.D Vial: 2
Acq On : 6 Mar 2013 10:55 Operator: lsf
Sample : RSK L-2 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:00 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Wed Mar 06 11:30:47 2013
Response via : Multiple Level Calibration

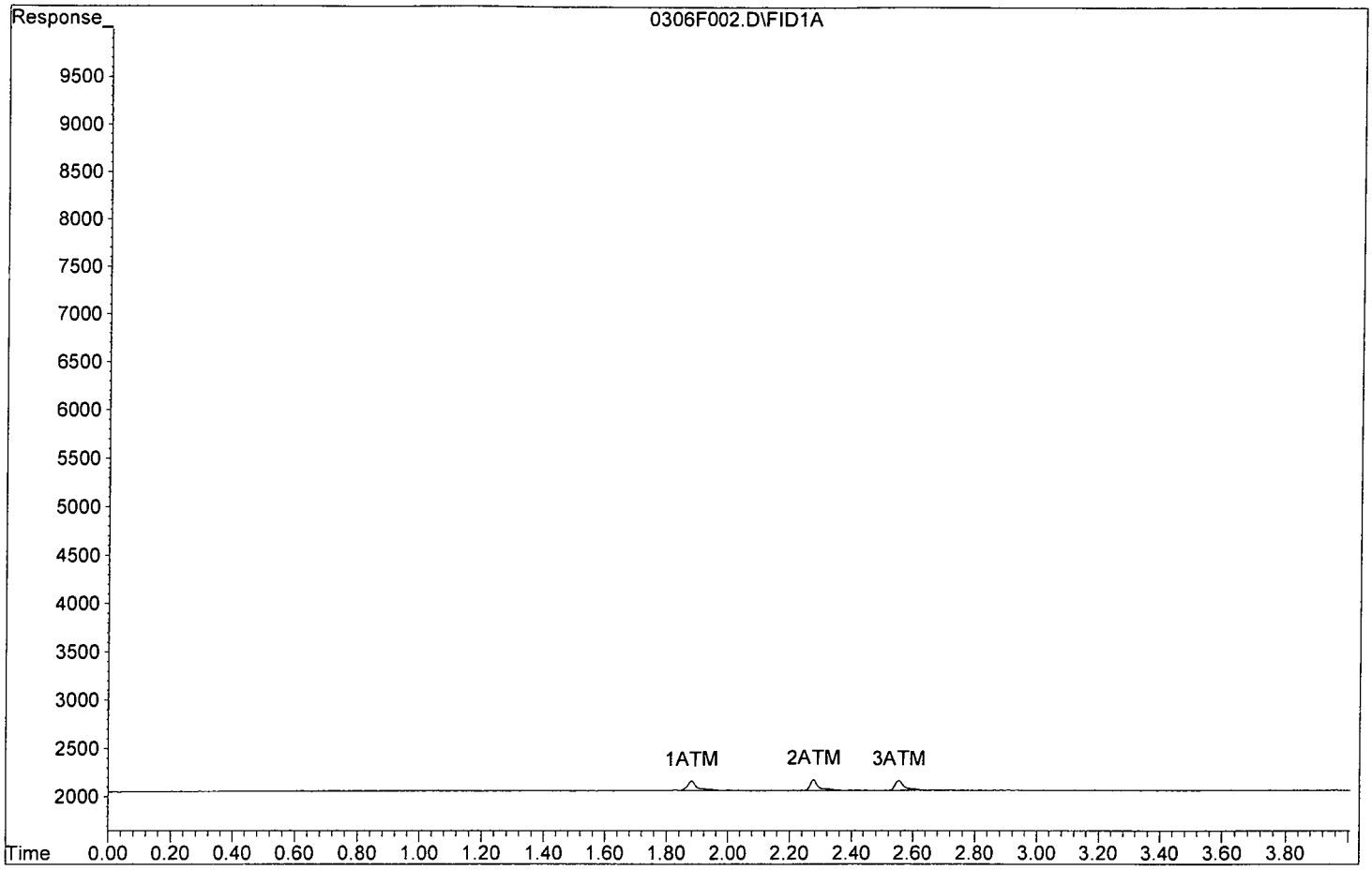
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 2355 | 1.146 ppb |
| 2) ATM Ethane | 2.28 | 2472 | 3.396 ppb |
| 3) ATM Ethene | 2.55 | 2219 | 3.381 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F002.D
Sample : RSK L-2



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F003.D Vial: 3
Acq On : 6 Mar 2013 11:00 Operator: lsf
Sample : RSK L-3 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:05 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Wed Mar 06 11:30:47 2013
Response via : Multiple Level Calibration

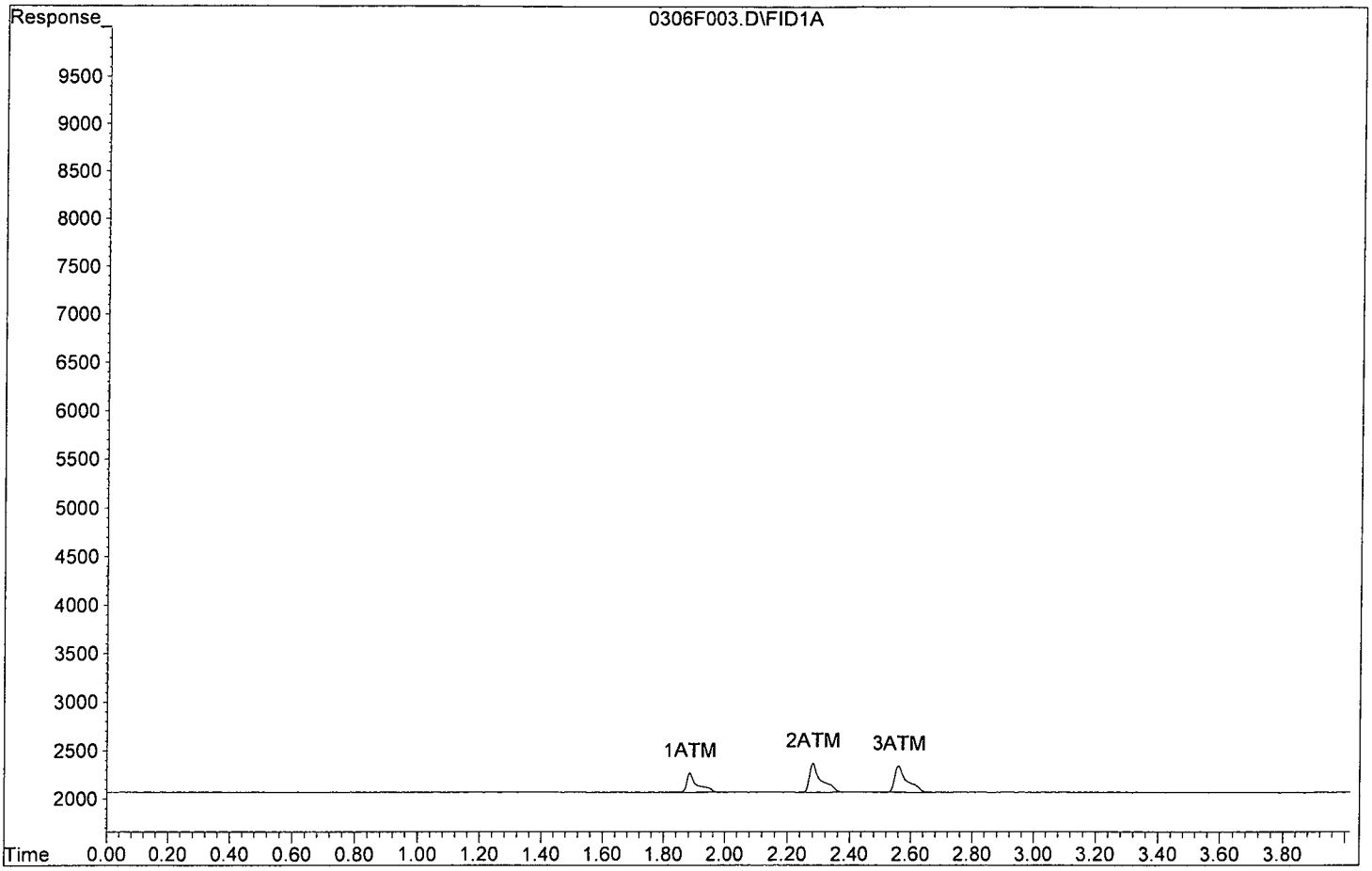
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 4981 | 4.212 ppb |
| 2) ATM Ethane | 2.28 | 7865 | 20.444 ppb |
| 3) ATM Ethene | 2.56 | 7603 | 20.362 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F003.D
Sample : RSK L-3



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F004.D Vial: 4
Acq On : 6 Mar 2013 11:05 Operator: lsf
Sample : RSK L-4 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:25 2013 Quant Results File: RSK175Q.RES

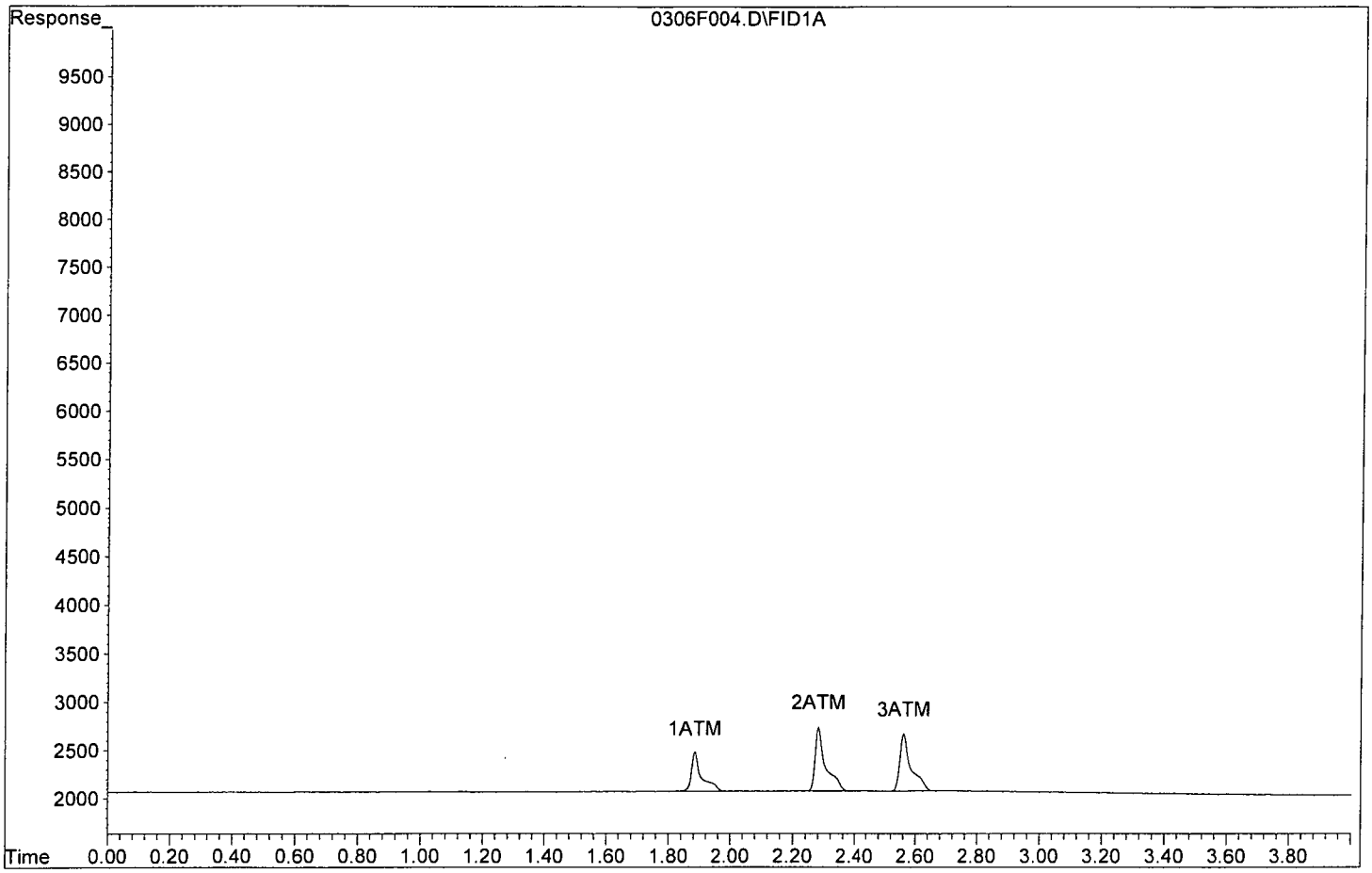
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Wed Mar 06 11:30:47 2013
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 9581 | 25.717 ppb |
| 2) ATM Ethane | 2.28 | 15656 | 45.982 ppb |
| 3) ATM Ethene | 2.56 | 15290 | 42.993 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\130306\0306F004.D
Sample : RSK L-4



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F005.D Vial: 5
Acq On : 6 Mar 2013 11:09 Operator: lsf
Sample : RSK L-5 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:15 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Thu Mar 07 13:29:20 2013
Response via : Multiple Level Calibration

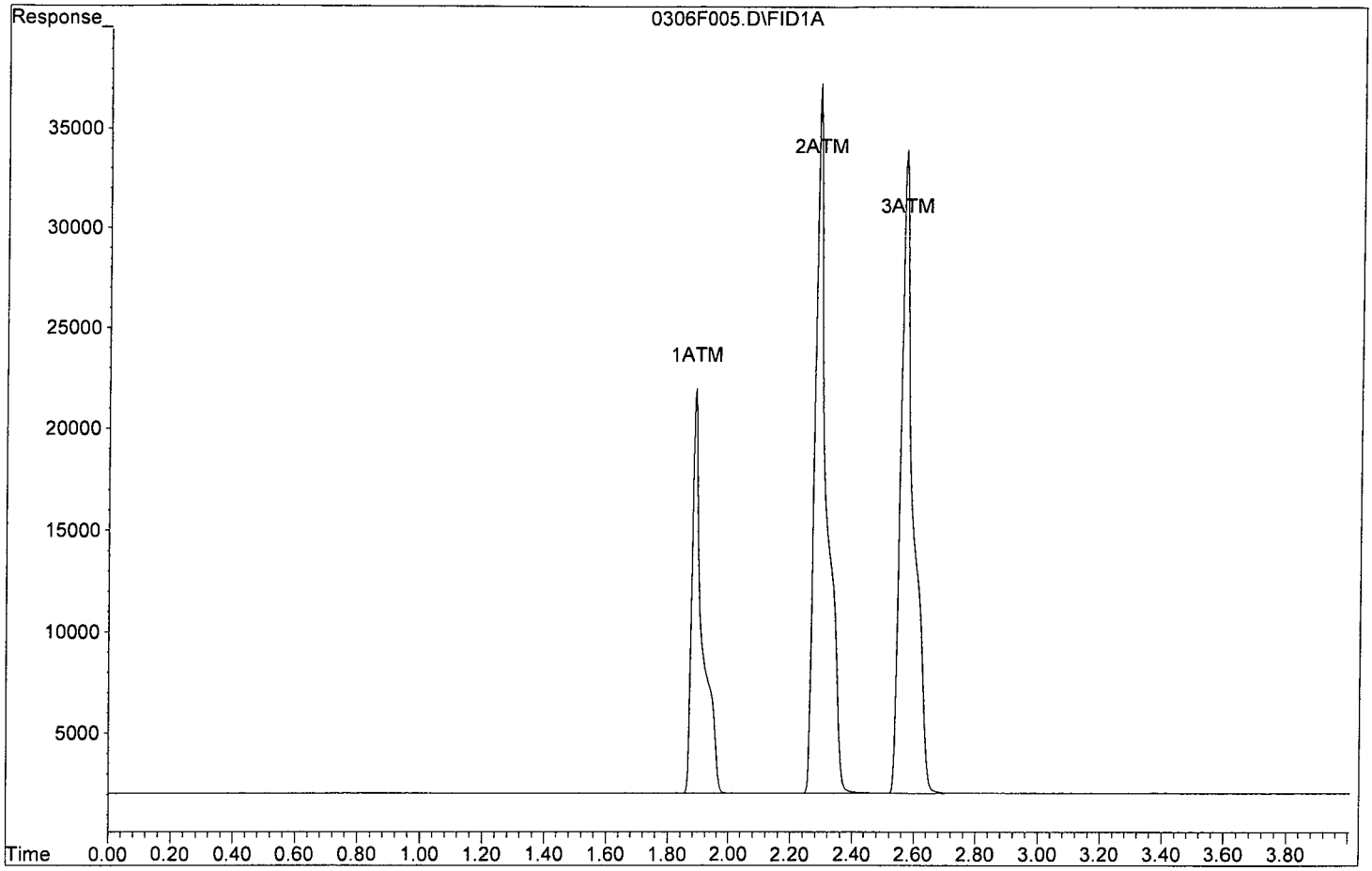
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 475739 | 614.401 ppb |
| 2) ATM Ethane | 2.28 | 921885 | 2639.481 ppb |
| 3) ATM Ethene | 2.56 | 901927 | 2574.780 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F005.D
Sample : RSK L-5



Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 6 Mar 2013 11:53
Instrument: Frodo
Initial Cal. Date: 03/06/13
Data File: 0306F008.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 323 | 43 | ATML | 14 |
| 2 | ATM | Ethane | 312 | 308 | 1.2 | ATM | |
| 3 | ATM | Ethene | 328 | 321 | 2.4 | ATM | |
| 4 | | | | | | | |
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| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 15.5 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F008.D Vial: 8
Acq On : 6 Mar 2013 11:53 Operator: lsf
Sample : 130306A LCS-1 (SS) Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:33 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Thu Mar 07 13:29:20 2013
Response via : Multiple Level Calibration

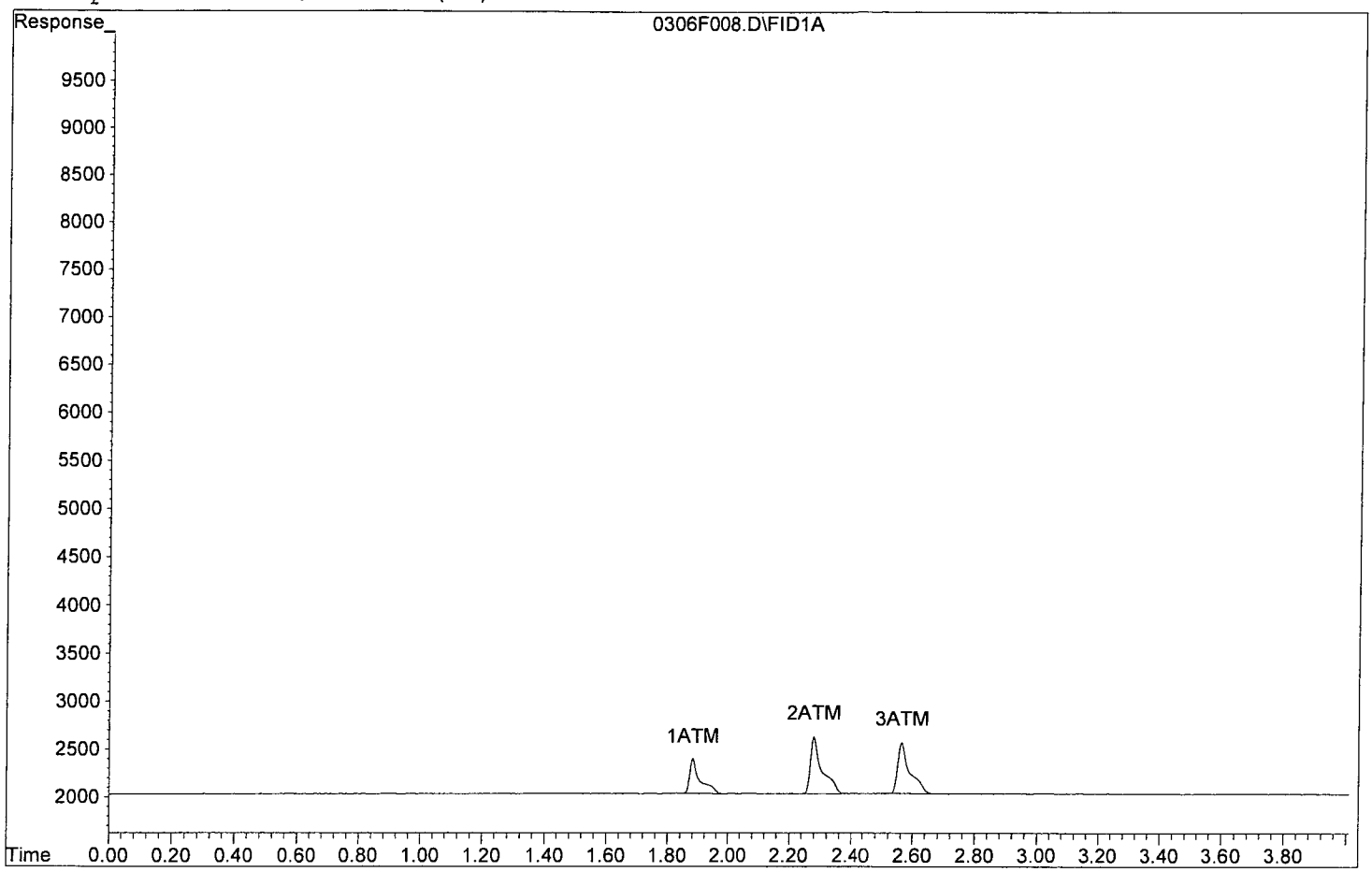
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 8635 | 23.062 ppb |
| 2) ATM Ethane | 2.28 | 15416 | 49.407 ppb |
| 3) ATM Ethene | 2.56 | 14936 | 45.493 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F008.D
Sample : 130306A LCS-1 (SS)



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 10/22/14
Instrument: Frodo
Initial Cal. Date: 03/05/14
Data File: 1022F001.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 395 | 30 | ATML | 6.4 |
| 2 | ATM | Ethane | 312 | 366 | 17 | ATM | |
| 3 | ATM | Ethene | 328 | 384 | 17 | ATM | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
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| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
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| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 21.3 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F001.D Vial: 1
Acq On : 22 Oct 2014 20:00 Operator: lsf
Sample : RSK L-4 10-22-14 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:04 2014 Quant Results File: RSK175Q.RES

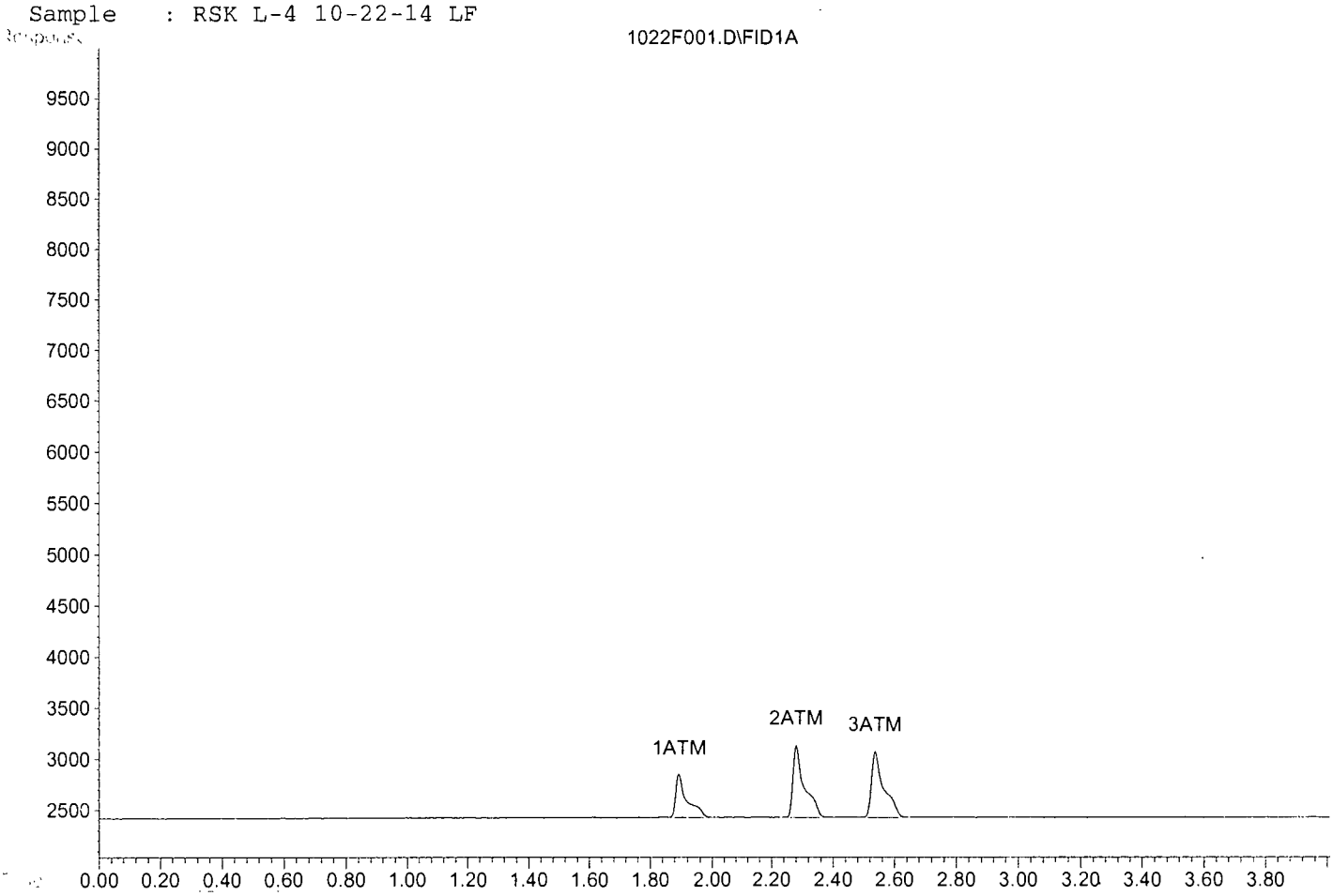
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 10541 | 28.409 ppb |
| 2) ATM Ethane | 2.28 | 18284 | 58.598 ppb |
| 3) ATM Ethene | 2.54 | 17906 | 54.540 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F001.D
Sample : RSK L-4 10-22-14 LF



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 10/22/14
Instrument: Frodo
Initial Cal. Date: 03/05/14
Data File: 1022F011.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 300 | 47 | ATML | 20 |
| 2 | ATM | Ethane | 312 | 273 | 13 | ATM | |
| 3 | ATM | Ethene | 328 | 281 | 14 | ATM | |
| 4 | | | | | | | |
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| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 24.7 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F011.D Vial: 11
Acq On : 22 Oct 2014 20:56 Operator: lsf
Sample : RSK L-4 10-22-14 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 20:10 2014 Quant Results File: RSK175Q.RES

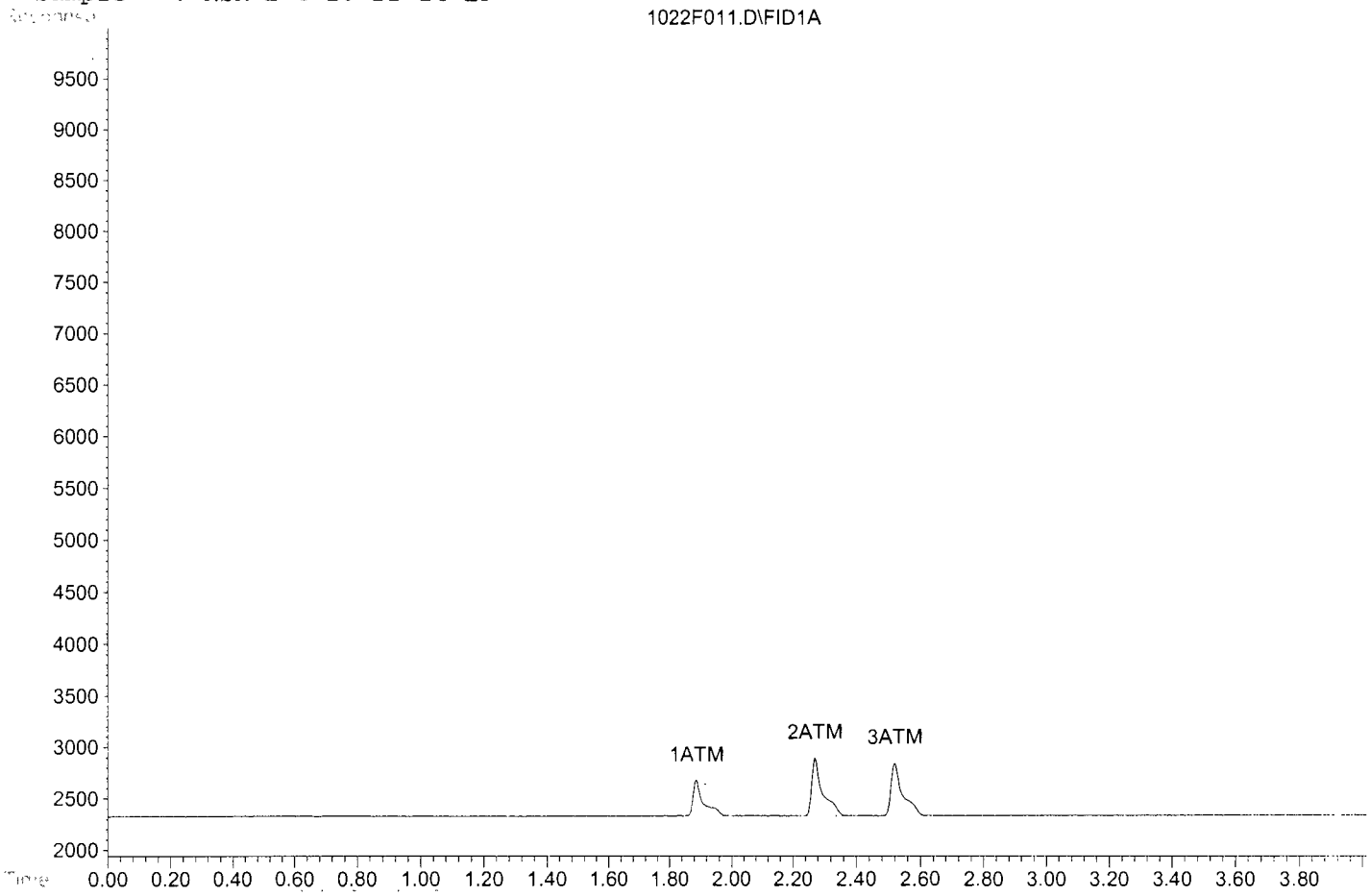
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 8011 | 21.310 ppb |
| 2) ATM Ethane | 2.27 | 13630 | 43.681 ppb |
| 3) ATM Ethene | 2.52f | 13099 | 39.898 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F011.D
Sample : RSK L-4 10-22-14 LF



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 10/22/14
Instrument: Frodo
Initial Cal. Date: 03/05/14
Data File: 1022F014.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 357 | 37 | ATML | 4.2 |
| 2 | ATM | Ethane | 312 | 323 | 3.5 | ATM | |
| 3 | ATM | Ethene | 328 | 338 | 3.0 | ATM | |
| 4 | | | | | | | |
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| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 14.5 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F014.D Vial: 14
Acq On : 22 Oct 2014 21:37 Operator: lsf
Sample : RSK L-4 10-22-14 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 20:42 2014 Quant Results File: RSK175Q.RES

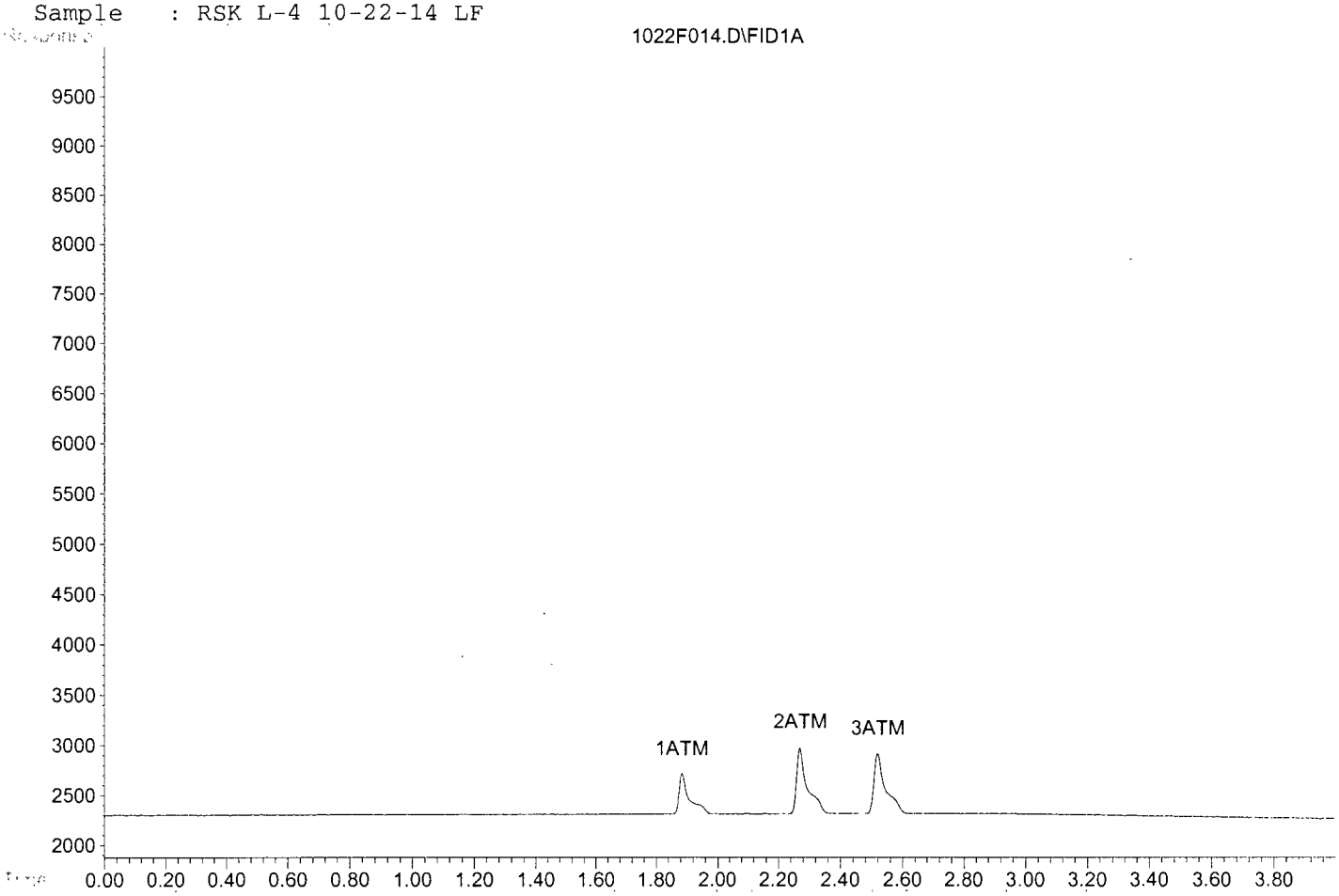
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 9530 | 25.572 ppb |
| 2) ATM Ethane | 2.27 | 16148 | 51.753 ppb |
| 3) ATM Ethene | 2.52f | 15756 | 47.990 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F014.D
Sample : RSK L-4 10-22-14 LF



# RSK-175
# Raw Data

APPL, INC.

# Method Blank
## MEE

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141022W-05388 - 191410**
Batch ID: #RSK50-141022A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 10/22/14 | 10/22/14 |

Quant Method: RSK175Q.M
Run #: 1022F004
Instrument: Frodo
Sequence: 140305
Initials: LF

*GC SC-Blank-REG MDLs*
*Printed: 11/02/14 9:29:16 PM*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F004.D Vial: 4
Acq On : 22 Oct 2014 20:14 Operator: lsf
Sample : 141022A BLK-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:32 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

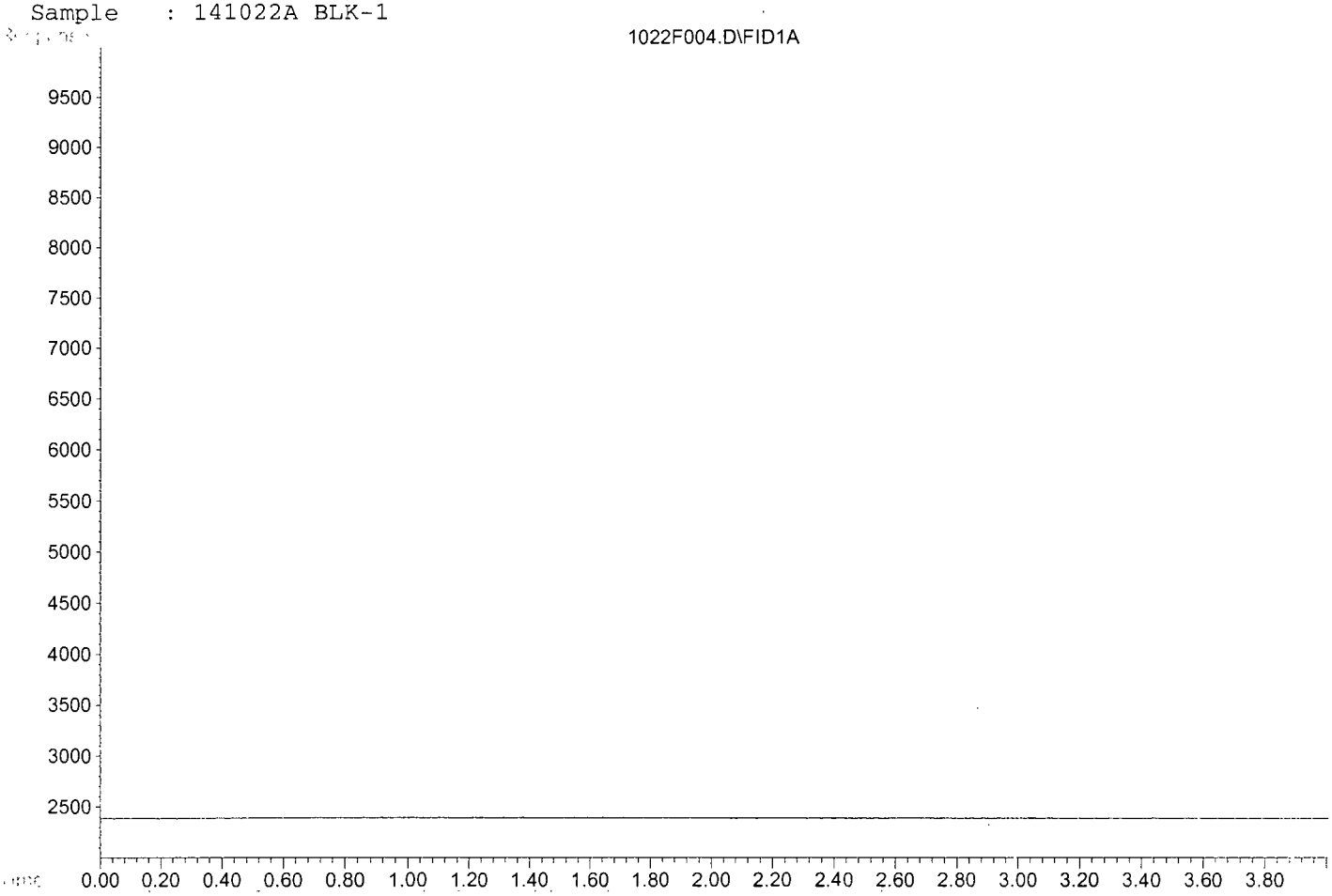
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|

Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F004.D
Sample : 141022A BLK-1



# Laboratory Control Spike Recoveries

## MEE

APPL ID: **141022W-05388 LCS - 191410**
Batch ID: #RSK50-141022A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| METHANE | 26.7 | 26.5 | 25.7 | 99.3 | 96.3 | 72-125 | 3.1 | 30 |

Comments: _____

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | RSK175Q.M | RSK175Q.M |
| Extraction Date : | 10/22/14 | 10/22/14 |
| Analysis Date : | 10/22/14 | 10/22/14 |
| Instrument : | Frodo | Frodo |
| Run : | 1022F002 | 1022F003 |
| Initials : | LF | |



*Printed: 11/02/14 9:29:08 PM*
*APPL Standard LCSD*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F002.D Vial: 2
Acq On : 22 Oct 2014 20:05 Operator: lsf
Sample : 141022A LCS-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:09 2014 Quant Results File: RSK175Q.RES

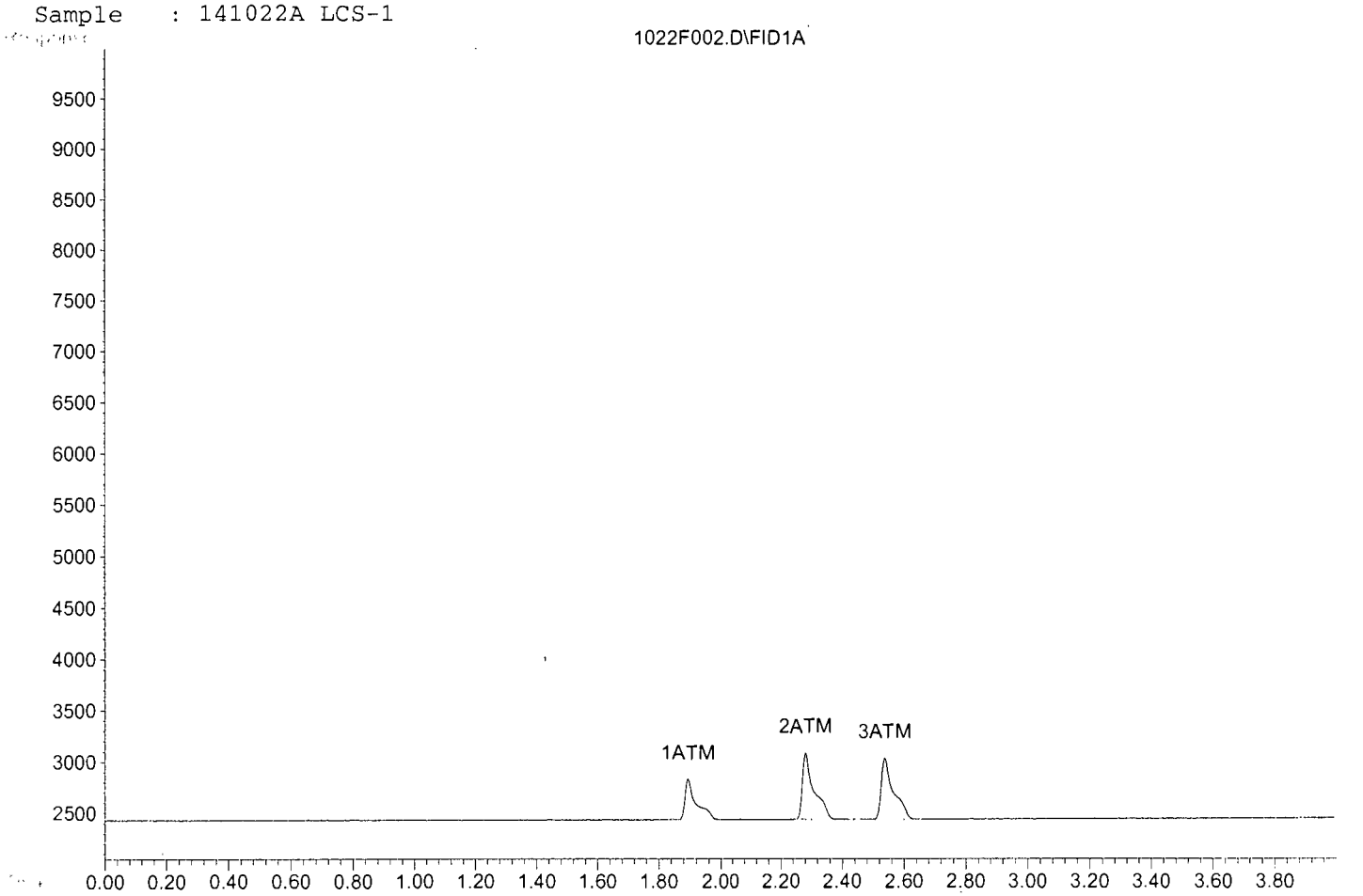
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.90 | 9859 | 26.496 ppb |
| 2) ATM Ethane | 2.28 | 17060 | 54.673 ppb |
| 3) ATM Ethene | 2.54 | 16799 | 51.170 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F002.D
Sample : 141022A LCS-1



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F003.D Vial: 3
Acq On : 22 Oct 2014 20:10 Operator: lsf
Sample : 141022A LCSD-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:14 2014 Quant Results File: RSK175Q.RES

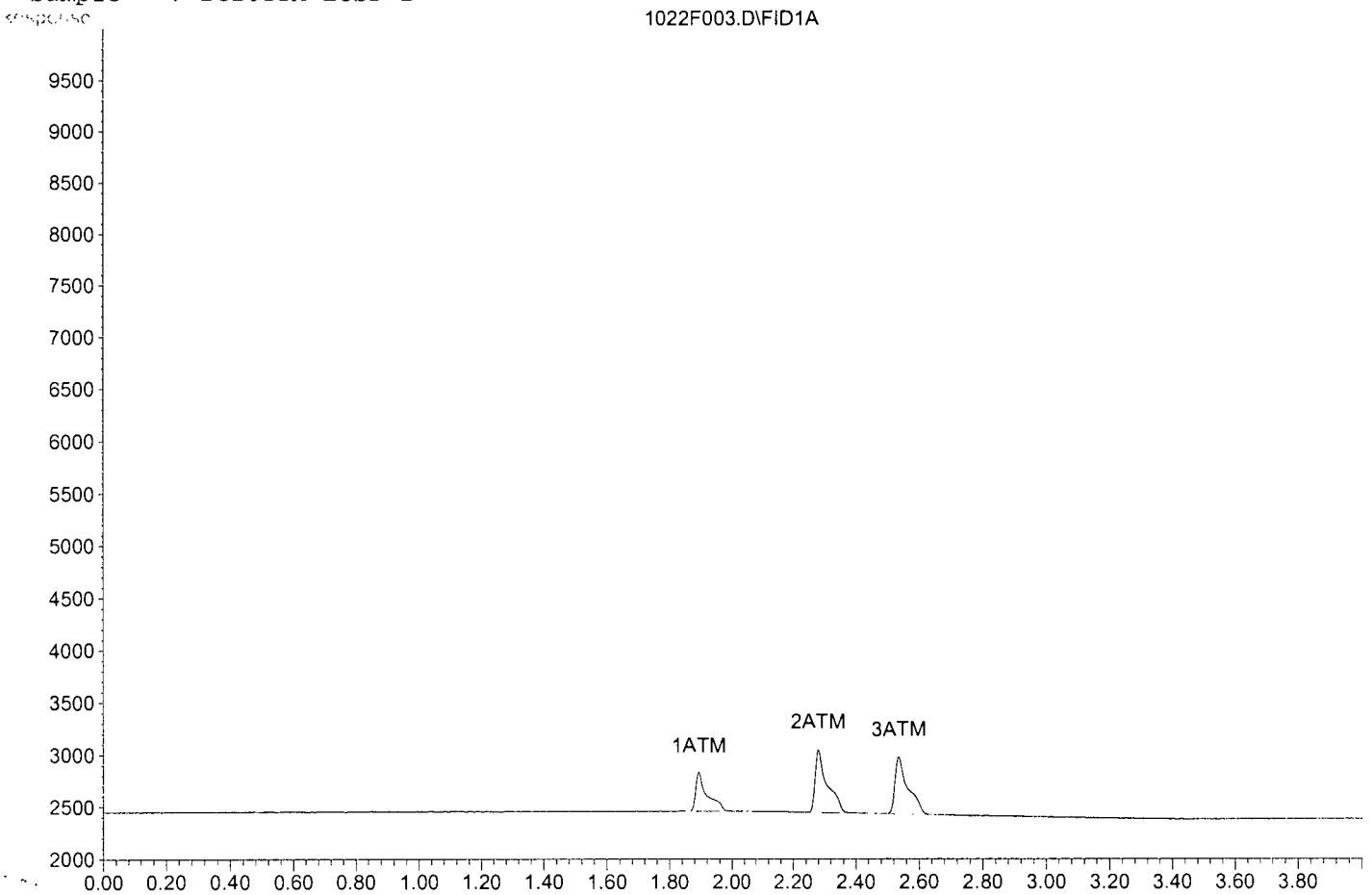
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 9558 | 25.652 ppb |
| 2) ATM Ethane | 2.28 | 16380 | 52.496 ppb |
| 3) ATM Ethene | 2.54 | 15864 | 48.321 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F003.D
Sample : 141022A LCSD-1



# Injection Log

Directory: V:\FRODO\DATA\130306\
V:\FRODO\DATA\140305\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 1 | 0306F001.D | 1 | RSK L-1 03-06-13 LF | Water | 6 Mar 2013 10:46 |
| 2 | 2 | 0306F002.D | 1 | RSK L-2 | Water | 6 Mar 2013 10:55 |
| 3 | 3 | 0306F003.D | 1 | RSK L-3 | Water | 6 Mar 2013 11:00 |
| 4 | 4 | 0306F004.D | 1 | RSK L-4 | Water | 6 Mar 2013 11:05 |
| 5 | 5 | 0306F005.D | 1 | RSK L-5 | Water | 6 Mar 2013 11:09 |
| 6 | 8 | 0306F008.D | 1 | 130306A LCS-1 (SS) | Water | 6 Mar 2013 11:53 |
| 7 | 1 | 1022F001.D | 1 | RSK L-4 10-22-14 LF | Water | 22 Oct 2014 20:00 |
| 8 | 2 | 1022F002.D | 1 | 141022A LCS-1 | Water | 22 Oct 2014 20:05 |
| 9 | 3 | 1022F003.D | 1 | 141022A LCSD-1 | Water | 22 Oct 2014 20:10 |
| 10 | 4 | 1022F004.D | 1 | 141022A BLK-1 | Water | 22 Oct 2014 20:14 |
| 11 | 11 | 1022F011.D | 1 | RSK L-4 10-22-14 LF | Water | 22 Oct 2014 20:56 |
| 12 | 12 | 1022F012.D | 1 | AZ05388W04 | Water | 22 Oct 2014 21:18 |
| 13 | 13 | 1022F013.D | 1 | AZ05389W04 | Water | 22 Oct 2014 21:22 |
| 14 | 14 | 1022F014.D | 1 | RSK L-4 10-22-14 LF | Water | 22 Oct 2014 21:37 |

# METALS

APPL, INC.

# METALS

## QC Summary

APPL, INC.

# METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| 6020A | LEAD (PB) (DISSOL | 0.40 U | 3.0 | 0.40 | 0.19 | ug/L | 11/05/14 | 11/05/14 | #62A14-141105A-AZ05388 |

*Metals SC-Blank-REG MDLs*
*Printed: 11/12/14 9:53:09 AM*

# Laboratory Control Spike Recovery

## METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVED) | 50.0 | 44.4 | 88.8 | 80-120 | 11/05/14 | 11/05/14 | #62A14-141105A-AZ05388 |

Comments: _____

# METALS

## Sample Data

APPL, INC.

# Metals Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05388**

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 6020A/3015^ | LEAD (PB) (DISSOLVED) | 0.80 U | 6.0 | 0.80 | 0.38 | ug/L | 2 | 11/05/14 | 11/05/14 |

*Printed: 11/12/14 11:46:07 AM*
*APPL-F1-SC-NoMC-REG MDLs*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ05388W12 1/5 |
| Data File Name | 110SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:41:55-08:00 |
| Sample Type | Sample |
| Dilution | 5.555555556 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.032 | -0.177 | -4.89 | 3 | 173.21 | 10000 | |
| B | 11 | 45 | NoGas | 357.487 | 1986.036 | 0.21 | 797697 | 0.76 | 10000 | |
| Na | 23 | 45 | He | 29155.617 | 161975.651 | 0.89 | 36959314 | 0.76 | 1000000 | |
| Mg | 24 | 45 | He | 9868.213 | 54823.404 | 0.94 | 6789804 | 1.12 | 1000000 | |
| Al | 27 | 45 | He | 1.081 | 6.006 | 8.49 | 1158 | 2.66 | 1000000 | |
| K | 39 | 45 | He | 1334.485 | 7413.803 | 0.19 | 856136 | 0.43 | 500000 | |
| Ca | 44 | 45 | He | 7542.015 | 41900.081 | 0.39 | 246647 | 0.47 | 500000 | |
| Ti | 47 | 45 | He | 0.041 | 0.226 | 142.59 | 23 | 51.50 | 10000 | |
| V | 51 | 45 | He | 0.785 | 4.360 | 2.46 | 6581 | 1.86 | 10000 | |
| Cr | 52 | 45 | He | 0.047 | 0.262 | 17.65 | 1617 | 4.23 | 10000 | |
| Mn | 55 | 45 | He | 50.164 | 278.691 | 0.92 | 242802 | 1.05 | 50000 | |
| Fe | 56 | 45 | He | 1.505 | 8.361 | 10.16 | 30126 | 3.73 | 1000000 | |
| Co | 59 | 45 | He | 0.154 | 0.858 | 4.81 | 2168 | 4.48 | 10000 | |
| Ni | 60 | 45 | He | 0.551 | 3.063 | 1.12 | 2269 | 1.04 | 10000 | |
| Cu | 63 | 45 | He | 0.145 | 0.803 | 3.87 | 1989 | 2.78 | 10000 | |
| Zn | 66 | 115 | He | 8.183 | 45.460 | 1.91 | 14093 | 1.86 | 50000 | |
| As | 75 | 115 | He | 0.542 | 3.013 | 2.86 | 568 | 2.44 | 2000 | |
| Se | 78 | 115 | H2 | 0.085 | 0.474 | 30.86 | 30 | 22.23 | 10000 | |
| Se | 78 | 115 | He | 0.361 | 2.008 | 103.11 | 104 | 24.37 | 10000 | |
| Sr | 88 | 115 | NoGas | 62.876 | 349.313 | 1.29 | 2287882 | 0.16 | 50000 | |
| Mo | 95 | 115 | NoGas | 0.617 | 3.430 | 6.59 | 6051 | 4.01 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.001 | 0.008 | 141.49 | 50 | 69.28 | 5000 | |
| Cd | 111 | 115 | He | 0.002 | 0.010 | 89.77 | 6 | 57.74 | 10000 | |
| Sn | 118 | 115 | He | -0.494 | -2.743 | -3.51 | 556 | 14.18 | 10000 | |
| Sn | 118 | 115 | NoGas | -0.478 | -2.655 | -0.87 | 1320 | 3.77 | 10000 | |
| Sb | 121 | 115 | NoGas | 0.020 | 0.113 | 19.02 | 3064 | 0.50 | 10000 | |
| Ba | 137 | 165 | NoGas | 3.471 | 19.285 | 1.45 | 17710 | 1.34 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.003 | 0.015 | 56.29 | 469 | 10.66 | 5000 | |
| Pb | 208 | 165 | NoGas | -0.042 | -0.232 | -5.67 | 590 | 16.69 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 436714 | 0.14 | 349963 | 124.79 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 513654 | 0.62 | 475873 | 107.94 | 70 | 120 | |
| Sc | 45 | He | 206425 | 0.28 | 199736 | 103.35 | 70 | 120 | |
| Sc | 45 | NoGas | 2462994 | 0.67 | 2096637 | 117.47 | 70 | 120 | |
| Ge | 72 | H2 | 138066 | 0.38 | 122394 | 112.80 | 70 | 120 | |
| Ge | 72 | He | 129941 | 1.20 | 123228 | 105.45 | 70 | 120 | |
| Ge | 72 | NoGas | 538693 | 1.69 | 485769 | 110.89 | 70 | 120 | |
| In | 115 | H2 | 2928393 | 0.46 | 2822980 | 103.73 | 70 | 120 | |
| In | 115 | He | 1172747 | 0.15 | 1094773 | 107.12 | 70 | 120 | |
| In | 115 | NoGas | 3514390 | 1.45 | 3222140 | 109.07 | 70 | 120 | |
| Tb | 159 | H2 | 5472872 | 0.38 | 5338807 | 102.51 | 70 | 120 | |
| Tb | 159 | He | 3434444 | 0.71 | 3232159 | 106.26 | 70 | 120 | |
| Tb | 159 | NoGas | 4626962 | 2.08 | 4336564 | 106.70 | 70 | 120 | |
| Ho | 165 | H2 | 5147335 | 0.47 | 5094749 | 101.03 | 70 | 120 | |
| Ho | 165 | He | 3362223 | 0.42 | 3120127 | 107.76 | 70 | 120 | |
| Ho | 165 | NoGas | 4475135 | 0.70 | 4144894 | 107.97 | 70 | 120 | |

# Metals Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW07-GW-01FD**
Sample Collection Date: 10/20/14

ARF: 74672
**APPL ID: AZ05389**

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 6020A/3015^ | LEAD (PB) (DISSOLVED) | 0.80 U | 6.0 | 0.80 | 0.38 | ug/L | 2 | 11/05/14 | 11/05/14 |

*Printed: 11/12/14 11:46:07 AM*
*APPL-F1-SC-NoMC-REG MDLs*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ05389W12 1/5 |
| Data File Name | 111SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:47:55-08:00 |
| Sample Type | Sample |
| Dilution | 5.555555556 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.030 | -0.167 | -9.27 | 10 | 100.00 | 10000 | |
| B | 11 | 45 | NoGas | 346.385 | 1924.362 | 1.92 | 760810 | 0.93 | 10000 | |
| Na | 23 | 45 | He | 28012.522 | 155625.121 | 0.51 | 35623392 | 0.75 | 1000000 | |
| Mg | 24 | 45 | He | 9312.068 | 51733.711 | 0.61 | 6426756 | 0.54 | 1000000 | |
| Al | 27 | 45 | He | -0.735 | -4.082 | -12.91 | 613 | 4.25 | 1000000 | |
| K | 39 | 45 | He | 1268.896 | 7049.422 | 1.23 | 820075 | 0.50 | 500000 | |
| Ca | 44 | 45 | He | 7143.501 | 39686.116 | 0.64 | 234349 | 0.75 | 500000 | |
| Ti | 47 | 45 | He | 0.019 | 0.106 | 178.03 | 19 | 36.75 | 10000 | |
| V | 51 | 45 | He | 0.771 | 4.281 | 3.80 | 6509 | 2.76 | 10000 | |
| Cr | 52 | 45 | He | 0.040 | 0.224 | 6.85 | 1568 | 0.86 | 10000 | |
| Mn | 55 | 45 | He | 47.976 | 266.531 | 0.77 | 233074 | 0.88 | 50000 | |
| Fe | 56 | 45 | He | 0.812 | 4.512 | 7.22 | 25373 | 1.29 | 1000000 | |
| Co | 59 | 45 | He | 0.148 | 0.824 | 7.58 | 2100 | 6.69 | 10000 | |
| Ni | 60 | 45 | He | 0.552 | 3.066 | 4.14 | 2278 | 3.40 | 10000 | |
| Cu | 63 | 45 | He | 0.100 | 0.557 | 19.77 | 1591 | 11.96 | 10000 | |
| Zn | 66 | 115 | He | 7.341 | 40.783 | 2.84 | 12736 | 2.54 | 50000 | |
| As | 75 | 115 | He | 0.506 | 2.814 | 4.58 | 532 | 3.67 | 2000 | |
| Se | 78 | 115 | H2 | 0.100 | 0.555 | 45.11 | 34 | 34.00 | 10000 | |
| Se | 78 | 115 | He | 0.185 | 1.030 | 184.13 | 92 | 25.64 | 10000 | |
| Sr | 88 | 115 | NoGas | 60.909 | 338.383 | 1.77 | 2191665 | 0.73 | 50000 | |
| Mo | 95 | 115 | NoGas | 0.551 | 3.059 | 9.14 | 5524 | 5.30 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.000 | -0.001 | -1168.55 | 23 | 89.21 | 5000 | |
| Cd | 111 | 115 | He | 0.002 | 0.009 | 71.48 | 5 | 43.30 | 10000 | |
| Sn | 118 | 115 | He | -0.497 | -2.762 | -1.76 | 539 | 7.73 | 10000 | |
| Sn | 118 | 115 | NoGas | -0.476 | -2.644 | -1.42 | 1326 | 5.22 | 10000 | |
| Sb | 121 | 115 | NoGas | -0.048 | -0.266 | -41.23 | 2134 | 11.12 | 10000 | |
| Ba | 137 | 165 | NoGas | 3.313 | 18.406 | 2.57 | 16759 | 3.28 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.001 | 0.004 | 187.74 | 403 | 11.98 | 5000 | |
| Pb | 208 | 165 | NoGas | -0.043 | -0.241 | -3.94 | 510 | 13.73 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 432668 | 0.86 | 349963 | 123.63 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 517555 | 0.79 | 475873 | 108.76 | 70 | 120 | |
| Sc | 45 | He | 207060 | 0.68 | 199736 | 103.67 | 70 | 120 | |
| Sc | 45 | NoGas | 2422756 | 0.97 | 2096637 | 115.55 | 70 | 120 | |
| Ge | 72 | H2 | 137636 | 0.66 | 122394 | 112.45 | 70 | 120 | |
| Ge | 72 | He | 129813 | 0.62 | 123228 | 105.34 | 70 | 120 | |
| Ge | 72 | NoGas | 534674 | 0.62 | 485769 | 110.07 | 70 | 120 | |
| In | 115 | H2 | 2987472 | 1.07 | 2822980 | 105.83 | 70 | 120 | |
| In | 115 | He | 1169582 | 0.47 | 1094773 | 106.83 | 70 | 120 | |
| In | 115 | NoGas | 3475324 | 1.09 | 3222140 | 107.86 | 70 | 120 | |
| Tb | 159 | H2 | 5428888 | 0.80 | 5338807 | 101.69 | 70 | 120 | |
| Tb | 159 | He | 3459885 | 1.70 | 3232159 | 107.05 | 70 | 120 | |
| Tb | 159 | NoGas | 4588207 | 1.13 | 4336564 | 105.80 | 70 | 120 | |
| Ho | 165 | H2 | 5155861 | 0.72 | 5094749 | 101.20 | 70 | 120 | |
| Ho | 165 | He | 3367035 | 1.69 | 3120127 | 107.91 | 70 | 120 | |
| Ho | 165 | NoGas | 4434919 | 0.73 | 4144894 | 107.00 | 70 | 120 | |

# METALS

## Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74672 SDG: 74672
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 11/05/14 Concentration Units: ug/L

| Analyte | Initial Calibration | | | Continuing Calibration | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found 11:27 | %R(1) | True CCV1 | Found 12:08 | %R(1) | True CCV1 | Found 21:06 | %R(1) | |
| Lead (Pb) | 100 | 97.3657 | 97.4 | 50 | 48.7956 | 97.6 | 50 | 47.1295 | 94.3 | P |

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74672 SDG: 74672
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 11/05/14 Concentration Units: ug/L

| Analyte | Initial Calibration | | | Continuing Calibration | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found 11:27 | %R(1) | True CCV1 | Found 22:23 | %R(1) | True | Found | %R(1) | |
| Lead (Pb) | 100 | 97.3657 | 97.4 | 50 | 46.8780 | 93.8 | | | | P |

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74672 SDG: 74672

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 11/05/14

| Analyte | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | C | 1 | C | 2 | C | 3 | C | | C | |
| | 11:44 | | 12:20 | | 21:17 | | 22:35 | | 21:23 | | |
| Lead (Pb) | 3.00 | U | 3.00 | U | 3.00 | U | 3.00 | U | 3.00 | U | P |

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC.
Contract: Parsons
ARF No.: 74672
SDG: 74672
ICP ID Number: Megatron
ICS Source: Environmental Express

Analysis Date: 11/05/14
Concentration Units: ug/L

| Analyte | True | | Initial Found | | |
|---|---|---|---|---|---|
| | Sol A | Sol AB | Sol A 12:26 | Sol AB 13:08 | %R(1) |
| Lead (Pb) | | 100 | 0.021032 | 102.443625 | 102 |

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
9
ICP SERIAL DILUTION

CLIENT SAMPLE NO.
RHMW06-GW-01

Lab Name: A.P.P.L. INC.
Contract: Parsons
ARF No.: 74701
SDG: 74701
Matrix: water

Analysis Date: 11/05/14
Concentration Units: ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | %D | Q | M |
|---|---|---|---|---|---|---|---|
| Lead (Pb) | -0.194921 | | -0.991737 | | NA | | |

Comments:

11/05/14 21:53 AZ05593W35 1/5

11/05/14 22:17 AZ05593W35 1/25

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
RHMW06-GW-01

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74701 SDG: 74701

Analysis Date: 11/05/14 Concentration Units: ug/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Lead (Pb) | 75-125 | 1305.352529 | | -0.194921 | | 1250.000 | 104 | | |

Comments:

11/05/14 21:53 AZ05593W35 1/5

11/05/14 22:11 AZ05593W35-A 1/5

# Calibration Blank Report

**Sample Table**

| | |
|---|---|
| Sample Name | Calibration Blank |
| Data File Name | 002CALB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T10:57:03-08:00 |
| Sample Type | CalBlk |
| Level | 1 |
| Dilution | 1 |
| Comment | |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD |
|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 103 | 43.64 |
| B | 11 | 45 | NoGas | 16828 | 4.09 |
| Na | 23 | 45 | He | 92021 | 0.42 |
| Mg | 24 | 45 | He | 1327 | 15.10 |
| Al | 27 | 45 | He | 806 | 6.44 |
| K | 39 | 45 | He | 69788 | 3.41 |
| Ca | 44 | 45 | He | 320 | 6.51 |
| Ti | 47 | 45 | He | 14 | 35.26 |
| V | 51 | 45 | He | 1466 | 7.69 |
| Cr | 52 | 45 | He | 1208 | 4.49 |
| Mn | 55 | 45 | He | 3437 | 5.24 |
| Fe | 56 | 45 | He | 19001 | 1.92 |
| Co | 59 | 45 | He | 263 | 7.70 |
| Ni | 60 | 45 | He | 419 | 23.64 |
| Cu | 63 | 45 | He | 651 | 12.39 |
| Zn | 66 | 115 | He | 1151 | 5.54 |
| As | 75 | 115 | He | 49 | 27.55 |
| Se | 78 | 115 | H2 | 8 | 107.84 |
| Se | 78 | 115 | He | 74 | 21.16 |
| Sr | 88 | 115 | NoGas | 323 | 25.94 |
| Mo | 95 | 115 | NoGas | 1617 | 17.50 |
| Ag | 107 | 115 | NoGas | 23 | 49.49 |
| Cd | 111 | 115 | He | 2 | 100.00 |
| Sn | 118 | 115 | He | 2592 | 1.67 |
| Sn | 118 | 115 | NoGas | 5867 | 2.03 |
| Sb | 121 | 115 | NoGas | 2562 | 7.16 |
| Ba | 137 | 165 | NoGas | 117 | 17.85 |
| Tl | 205 | 165 | NoGas | 353 | 12.52 |
| [Pb] | 206 | 165 | NoGas | 600 | 12.58 |
| [Pb] | 207 | 165 | NoGas | 487 | 5.93 |
| Pb | 208 | 165 | NoGas | 2197 | 5.18 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD |
|---|---|---|---|---|
| Li | 6 | NoGas | 349963 | 1.37 |
| Sc | 45 | H2 | 475873 | 0.63 |
| Sc | 45 | He | 199736 | 0.32 |
| Sc | 45 | NoGas | 2096637 | 1.45 |
| Ge | 72 | H2 | 122394 | 0.29 |
| Ge | 72 | He | 123228 | 0.40 |
| Ge | 72 | NoGas | 485769 | 0.09 |
| In | 115 | H2 | 2822980 | 0.43 |
| In | 115 | He | 1094773 | 0.17 |
| In | 115 | NoGas | 3222140 | 0.69 |
| Tb | 159 | H2 | 5338807 | 1.00 |
| Tb | 159 | He | 3232159 | 1.90 |
| Tb | 159 | NoGas | 4336564 | 1.26 |
| Ho | 165 | H2 | 5094749 | 0.73 |
| Ho | 165 | He | 3120127 | 1.11 |
| Ho | 165 | NoGas | 4144894 | 0.83 |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 1 |
| Data File Name | 003CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:03:02-08:00 |
| Sample Type | CalStd |
| Level | 2 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 390 | 11.75 | 1.0000 |
| B | 11 | 45 | NoGas | 16771 | 3.00 | -1.0000 |
| Na | 23 | 45 | He | 84730 | 0.74 | -1.0000 |
| Mg | 24 | 45 | He | 3627 | 1.26 | 1.0000 |
| Al | 27 | 45 | He | 811 | 4.94 | 1.0000 |
| K | 39 | 45 | He | 74010 | 4.14 | 1.0000 |
| Ca | 44 | 45 | He | 450 | 10.91 | 1.0000 |
| Ti | 47 | 45 | He | 26 | 15.07 | 1.0000 |
| V | 51 | 45 | He | 2101 | 4.05 | 1.0000 |
| Cr | 52 | 45 | He | 1819 | 3.30 | 1.0000 |
| Mn | 55 | 45 | He | 3565 | 7.90 | 1.0000 |
| Fe | 56 | 45 | He | 19366 | 1.18 | 1.0000 |
| Co | 59 | 45 | He | 1221 | 7.76 | 1.0000 |
| Ni | 60 | 45 | He | 600 | 6.83 | 1.0000 |
| Cu | 63 | 45 | He | 1450 | 3.16 | 1.0000 |
| Zn | 66 | 115 | He | 1278 | 5.58 | 1.0000 |
| As | 75 | 115 | He | 144 | 41.04 | 1.0000 |
| Se | 78 | 115 | H2 | 28 | 24.98 | 1.0000 |
| Se | 78 | 115 | He | 76 | 49.20 | 1.0000 |
| Sr | 88 | 115 | NoGas | 3501 | 2.73 | 1.0000 |
| Mo | 95 | 115 | NoGas | 1630 | 5.92 | 1.0000 |
| Ag | 107 | 115 | NoGas | 907 | 16.56 | 1.0000 |
| Cd | 111 | 115 | He | 181 | 24.16 | 1.0000 |
| Sn | 118 | 115 | He | 2742 | 2.86 | 1.0000 |
| Sn | 118 | 115 | NoGas | 6539 | 3.02 | 1.0000 |
| Sb | 121 | 115 | NoGas | 2824 | 7.52 | 1.0000 |
| Ba | 137 | 165 | NoGas | 573 | 20.07 | 1.0000 |
| Tl | 205 | 165 | NoGas | 3076 | 7.20 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 1147 | 16.92 | |
| [Pb] | 207 | 165 | NoGas | 1237 | 4.74 | |
| Pb | 208 | 165 | NoGas | 5051 | 11.84 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 356364 | 0.96 | 349963 | 101.83 | 70 | 120 | |
| Sc | 45 | H2 | 473911 | 0.14 | 475873 | 99.59 | 70 | 120 | |
| Sc | 45 | He | 199283 | 0.97 | 199736 | 99.77 | 70 | 120 | |
| Sc | 45 | NoGas | 2154011 | 1.23 | 2096637 | 102.74 | 70 | 120 | |
| Ge | 72 | H2 | 122797 | 0.62 | 122394 | 100.33 | 70 | 120 | |
| Ge | 72 | He | 121257 | 0.45 | 123228 | 98.40 | 70 | 120 | |
| Ge | 72 | NoGas | 485356 | 0.91 | 485769 | 99.91 | 70 | 120 | |
| In | 115 | H2 | 2818009 | 0.91 | 2822980 | 99.82 | 70 | 120 | |
| In | 115 | He | 1096867 | 0.66 | 1094773 | 100.19 | 70 | 120 | |
| In | 115 | NoGas | 3215026 | 1.40 | 3222140 | 99.78 | 70 | 120 | |
| Tb | 159 | H2 | 5346818 | 1.98 | 5338807 | 100.15 | 70 | 120 | |
| Tb | 159 | He | 3200725 | 1.03 | 3232159 | 99.03 | 70 | 120 | |
| Tb | 159 | NoGas | 4297779 | 1.30 | 4336564 | 99.11 | 70 | 120 | |
| Ho | 165 | H2 | 5070074 | 0.84 | 5094749 | 99.52 | 70 | 120 | |
| Ho | 165 | He | 3124303 | 0.40 | 3120127 | 100.13 | 70 | 120 | |
| Ho | 165 | NoGas | 4142641 | 1.12 | 4144894 | 99.95 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 2 |
| Data File Name | 004CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:09:00-08:00 |
| Sample Type | Cal5td |
| Level | 3 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 3217 | 6.90 | 1.0000 |
| B | 11 | 45 | NoGas | 17972 | 4.42 | 0.8365 |
| Na | 23 | 45 | He | 108357 | 0.83 | 0.9244 |
| Mg | 24 | 45 | He | 33017 | 1.50 | 0.9997 |
| Al | 27 | 45 | He | 6020 | 5.35 | 0.9960 |
| K | 39 | 45 | He | 78752 | 4.66 | 0.9111 |
| Ca | 44 | 45 | He | 1928 | 5.83 | 0.9998 |
| Ti | 47 | 45 | He | 190 | 12.28 | 0.9994 |
| V | 51 | 45 | He | 7765 | 0.95 | 1.0000 |
| Cr | 52 | 45 | He | 8477 | 3.83 | 0.9999 |
| Mn | 55 | 45 | He | 7770 | 1.48 | 0.9980 |
| Fe | 56 | 45 | He | 139631 | 1.50 | 0.9961 |
| Co | 59 | 45 | He | 12153 | 0.70 | 0.9998 |
| Ni | 60 | 45 | He | 3470 | 3.33 | 0.9993 |
| Cu | 63 | 45 | He | 9574 | 0.86 | 1.0000 |
| Zn | 66 | 115 | He | 2281 | 6.51 | 0.9999 |
| As | 75 | 115 | He | 920 | 4.75 | 0.9999 |
| Se | 78 | 115 | H2 | 256 | 9.16 | 0.9998 |
| Se | 78 | 115 | He | 136 | 26.29 | 0.9972 |
| Sr | 88 | 115 | NoGas | 33045 | 3.06 | 1.0000 |
| Mo | 95 | 115 | NoGas | 6865 | 7.94 | 0.9961 |
| Ag | 107 | 115 | NoGas | 8102 | 2.83 | 1.0000 |
| Cd | 111 | 115 | He | 1983 | 5.59 | 1.0000 |
| Sn | 118 | 115 | He | 6589 | 0.84 | 0.9983 |
| Sn | 118 | 115 | NoGas | 14983 | 3.78 | 0.9997 |
| Sb | 121 | 115 | NoGas | 9530 | 7.59 | 0.9984 |
| Ba | 137 | 165 | NoGas | 4931 | 3.61 | 1.0000 |
| Tl | 205 | 165 | NoGas | 28432 | 2.32 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 10300 | 2.82 | |
| [Pb] | 207 | 165 | NoGas | 8736 | 7.05 | |
| Pb | 208 | 165 | NoGas | 40712 | 1.78 | 0.9997 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 360691 | 1.84 | 349963 | 103.07 | 70 | 120 | |
| Sc | 45 | H2 | 474722 | 1.18 | 475873 | 99.76 | 70 | 120 | |
| Sc | 45 | He | 199841 | 0.84 | 199736 | 100.05 | 70 | 120 | |
| Sc | 45 | NoGas | 2164503 | 0.91 | 2096637 | 103.24 | 70 | 120 | |
| Ge | 72 | H2 | 122944 | 1.58 | 122394 | 100.45 | 70 | 120 | |
| Ge | 72 | He | 120974 | 0.66 | 123228 | 98.17 | 70 | 120 | |
| Ge | 72 | NoGas | 484419 | 1.01 | 485769 | 99.72 | 70 | 120 | |
| In | 115 | H2 | 2828071 | 0.22 | 2822980 | 100.18 | 70 | 120 | |
| In | 115 | He | 1103743 | 1.08 | 1094773 | 100.82 | 70 | 120 | |
| In | 115 | NoGas | 3239990 | 1.29 | 3222140 | 100.55 | 70 | 120 | |
| Tb | 159 | H2 | 5294843 | 0.85 | 5338807 | 99.18 | 70 | 120 | |
| Tb | 159 | He | 3278385 | 1.17 | 3232159 | 101.43 | 70 | 120 | |
| Tb | 159 | NoGas | 4375209 | 1.41 | 4336564 | 100.89 | 70 | 120 | |
| Ho | 165 | H2 | 5083483 | 0.27 | 5094749 | 99.78 | 70 | 120 | |
| Ho | 165 | He | 3146443 | 0.61 | 3120127 | 100.84 | 70 | 120 | |
| Ho | 165 | NoGas | 4181889 | 1.21 | 4144894 | 100.89 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 3 |
| Data File Name | 005CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:14:58-08:00 |
| Sample Type | CalStd |
| Level | 4 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 160759 | 0.64 | 1.0000 |
| B | 11 | 45 | NoGas | 109028 | 0.43 | 0.9999 |
| Na | 23 | 45 | He | 1653811 | 1.16 | 1.0000 |
| Mg | 24 | 45 | He | 1710150 | 1.72 | 1.0000 |
| Al | 27 | 45 | He | 293321 | 1.20 | 1.0000 |
| K | 39 | 45 | He | 640179 | 0.26 | 1.0000 |
| Ca | 44 | 45 | He | 80443 | 1.69 | 1.0000 |
| Ti | 47 | 45 | He | 9961 | 3.22 | 1.0000 |
| V | 51 | 45 | He | 314741 | 0.93 | 1.0000 |
| Cr | 52 | 45 | He | 382043 | 0.51 | 1.0000 |
| Mn | 55 | 45 | He | 236339 | 1.16 | 1.0000 |
| Fe | 56 | 45 | He | 6821525 | 2.05 | 1.0000 |
| Co | 59 | 45 | He | 600235 | 0.61 | 1.0000 |
| Ni | 60 | 45 | He | 164441 | 0.44 | 1.0000 |
| Cu | 63 | 45 | He | 442976 | 0.24 | 1.0000 |
| Zn | 66 | 115 | He | 74776 | 0.51 | 1.0000 |
| As | 75 | 115 | He | 44314 | 0.74 | 1.0000 |
| Se | 78 | 115 | H2 | 12623 | 0.77 | 1.0000 |
| Se | 78 | 115 | He | 3379 | 6.17 | 1.0000 |
| Sr | 88 | 115 | NoGas | 1663074 | 0.64 | 1.0000 |
| Mo | 95 | 115 | NoGas | 315689 | 1.47 | 1.0000 |
| Ag | 107 | 115 | NoGas | 406829 | 0.13 | 1.0000 |
| Cd | 111 | 115 | He | 95573 | 0.37 | 1.0000 |
| Sn | 118 | 115 | He | 212691 | 1.32 | 1.0000 |
| Sn | 118 | 115 | NoGas | 491627 | 0.33 | 1.0000 |
| Sb | 121 | 115 | NoGas | 608639 | 0.65 | 1.0000 |
| Ba | 137 | 165 | NoGas | 236766 | 0.41 | 1.0000 |
| Tl | 205 | 165 | NoGas | 1407913 | 0.71 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 495625 | 0.46 | |
| [Pb] | 207 | 165 | NoGas | 427409 | 0.71 | |
| Pb | 208 | 165 | NoGas | 1968219 | 0.70 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 370351 | 0.60 | 349963 | 105.83 | 70 | 120 | |
| Sc | 45 | H2 | 486172 | 0.45 | 475873 | 102.16 | 70 | 120 | |
| Sc | 45 | He | 200563 | 1.25 | 199736 | 100.41 | 70 | 120 | |
| Sc | 45 | NoGas | 2187098 | 2.48 | 2096637 | 104.31 | 70 | 120 | |
| Ge | 72 | H2 | 122822 | 0.81 | 122394 | 100.35 | 70 | 120 | |
| Ge | 72 | He | 121635 | 1.20 | 123228 | 98.71 | 70 | 120 | |
| Ge | 72 | NoGas | 483004 | 0.41 | 485769 | 99.43 | 70 | 120 | |
| In | 115 | H2 | 2853125 | 0.66 | 2822980 | 101.07 | 70 | 120 | |
| In | 115 | He | 1099190 | 1.39 | 1094773 | 100.40 | 70 | 120 | |
| In | 115 | NoGas | 3219483 | 1.44 | 3222140 | 99.92 | 70 | 120 | |
| Tb | 159 | H2 | 5424652 | 0.54 | 5338807 | 101.61 | 70 | 120 | |
| Tb | 159 | He | 3266843 | 1.48 | 3232159 | 101.07 | 70 | 120 | |
| Tb | 159 | NoGas | 4439319 | 1.78 | 4336564 | 102.37 | 70 | 120 | |
| Ho | 165 | H2 | 5167503 | 0.12 | 5094749 | 101.43 | 70 | 120 | |
| Ho | 165 | He | 3145781 | 1.03 | 3120127 | 100.82 | 70 | 120 | |
| Ho | 165 | NoGas | 4148593 | 1.12 | 4144894 | 100.09 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 4 |
| Data File Name | 006CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:20:59-08:00 |
| Sample Type | CalStd |
| Level | 5 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 328097 | 0.98 | 0.9999 |
| B | 11 | 45 | NoGas | 212372 | 0.60 | 0.9995 |
| Na | 23 | 45 | He | 3158915 | 0.86 | 0.9999 |
| Mg | 24 | 45 | He | 3332541 | 0.66 | 0.9999 |
| Al | 27 | 45 | He | 586722 | 0.84 | 1.0000 |
| K | 39 | 45 | He | 1215106 | 0.26 | 1.0000 |
| Ca | 44 | 45 | He | 158983 | 0.71 | 1.0000 |
| Ti | 47 | 45 | He | 20190 | 0.87 | 1.0000 |
| V | 51 | 45 | He | 630439 | 0.32 | 1.0000 |
| Cr | 52 | 45 | He | 761143 | 0.63 | 1.0000 |
| Mn | 55 | 45 | He | 467418 | 0.35 | 1.0000 |
| Fe | 56 | 45 | He | 13577724 | 0.57 | 1.0000 |
| Co | 59 | 45 | He | 1194102 | 0.51 | 1.0000 |
| Ni | 60 | 45 | He | 323766 | 0.53 | 1.0000 |
| Cu | 63 | 45 | He | 887773 | 0.55 | 1.0000 |
| Zn | 66 | 115 | He | 147380 | 0.25 | 1.0000 |
| As | 75 | 115 | He | 88615 | 1.20 | 1.0000 |
| Se | 78 | 115 | H2 | 25273 | 2.48 | 1.0000 |
| Se | 78 | 115 | He | 6390 | 3.12 | 0.9998 |
| Sr | 88 | 115 | NoGas | 3333818 | 0.24 | 1.0000 |
| Mo | 95 | 115 | NoGas | 639925 | 0.61 | 1.0000 |
| Ag | 107 | 115 | NoGas | 810678 | 0.52 | 1.0000 |
| Cd | 111 | 115 | He | 191641 | 0.65 | 1.0000 |
| Sn | 118 | 115 | He | 421664 | 0.46 | 1.0000 |
| Sn | 118 | 115 | NoGas | 979477 | 0.52 | 1.0000 |
| Sb | 121 | 115 | NoGas | 1217764 | 0.87 | 1.0000 |
| Ba | 137 | 165 | NoGas | 470209 | 0.59 | 1.0000 |
| Tl | 205 | 165 | NoGas | 2986053 | 0.90 | 0.9997 |
| [Pb] | 206 | 165 | NoGas | 972238 | 1.42 | |
| [Pb] | 207 | 165 | NoGas | 852769 | 0.66 | |
| Pb | 208 | 165 | NoGas | 3982316 | 0.60 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 375630 | 1.04 | 349963 | 107.33 | 70 | 120 | |
| Sc | 45 | H2 | 482607 | 0.61 | 475873 | 101.41 | 70 | 120 | |
| Sc | 45 | He | 201076 | 0.90 | 199736 | 100.67 | 70 | 120 | |
| Sc | 45 | NoGas | 2177578 | 1.78 | 2096637 | 103.86 | 70 | 120 | |
| Ge | 72 | H2 | 122796 | 0.41 | 122394 | 100.33 | 70 | 120 | |
| Ge | 72 | He | 119744 | 0.27 | 123228 | 97.17 | 70 | 120 | |
| Ge | 72 | NoGas | 485339 | 1.41 | 485769 | 99.91 | 70 | 120 | |
| In | 115 | H2 | 2876756 | 1.18 | 2822980 | 101.90 | 70 | 120 | |
| In | 115 | He | 1091109 | 0.24 | 1094773 | 99.67 | 70 | 120 | |
| In | 115 | NoGas | 3218039 | 0.70 | 3222140 | 99.87 | 70 | 120 | |
| Tb | 159 | H2 | 5423029 | 0.85 | 5338807 | 101.58 | 70 | 120 | |
| Tb | 159 | He | 3263922 | 0.60 | 3232159 | 100.98 | 70 | 120 | |
| Tb | 159 | NoGas | 4333812 | 2.16 | 4336564 | 99.94 | 70 | 120 | |
| Ho | 165 | H2 | 5125827 | 0.64 | 5094749 | 100.61 | 70 | 120 | |
| Ho | 165 | He | 3172578 | 0.67 | 3120127 | 101.68 | 70 | 120 | |
| Ho | 165 | NoGas | 4161409 | 0.69 | 4144894 | 100.40 | 70 | 120 | |

# Initial Calibration Verification (ICV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICV |
| Data File Name | 007_ICV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:27:00-08:00 |
| Sample Type | ICV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 98.780 | 0.338 | 326807 | 0.38 | 100 | 98.8 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 109.509 | 0.836 | 231185 | 0.62 | 100 | 109.5 | 89.6 | 110.4 | |
| Na | 23 | 45 | He | 2431.900 | 1.185 | 3065754 | 0.96 | 2500 | 97.3 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2462.072 | 1.473 | 1639246 | 1.00 | 2500 | 98.5 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 2460.110 | 0.734 | 716492 | 0.42 | 2500 | 98.4 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 2556.000 | 0.852 | 1522083 | 1.30 | 2500 | 102.2 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2656.688 | 0.520 | 84234 | 0.92 | 2500 | 106.3 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 99.917 | 4.019 | 19983 | 3.55 | 100 | 99.9 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 98.798 | 0.540 | 618282 | 0.42 | 100 | 98.8 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 97.913 | 0.676 | 740705 | 0.49 | 100 | 97.9 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 97.682 | 0.155 | 453998 | 0.58 | 100 | 97.7 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 2465.244 | 1.123 | 16631614 | 0.67 | 2500 | 98.6 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 98.013 | 0.504 | 1163822 | 0.21 | 100 | 98.0 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 98.420 | 0.144 | 317473 | 0.43 | 100 | 98.4 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 98.278 | 0.737 | 866241 | 0.44 | 100 | 98.3 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 93.088 | 1.045 | 138913 | 1.41 | 100 | 93.1 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 82.975 | 0.705 | 74305 | 0.96 | 100 | 83.0 | 89.6 | 110.4 | >+\- 10% |
| Se | 78 | 115 | H2 | 97.951 | 1.341 | 24402 | 2.04 | 100 | 98.0 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 95.979 | 1.151 | 6257 | 1.55 | 100 | 96.0 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 96.151 | 1.497 | 3264784 | 1.38 | 100 | 96.2 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 98.137 | 0.857 | 637913 | 0.55 | 100 | 98.1 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 49.397 | 0.422 | 816705 | 0.41 | 50 | 98.8 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 97.583 | 0.853 | 188880 | 0.23 | 100 | 97.6 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.827 | 0.604 | 213736 | 0.61 | 100 | 49.8 | 89.6 | 110.4 | >+\- 10% |
| Sn | 118 | 115 | NoGas | 49.264 | 0.589 | 494506 | 0.47 | 100 | 49.3 | 89.6 | 110.4 | >+\- 10% |
| Sb | 121 | 115 | NoGas | 109.245 | 1.915 | 1354564 | 1.61 | 100 | 109.2 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 97.245 | 1.651 | 465789 | 0.55 | 100 | 97.2 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 98.332 | 2.908 | 2952129 | 1.17 | 100 | 98.3 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 97.366 | 1.613 | 3934709 | 0.28 | 100 | 97.4 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 383213 | 0.93 | 349963 | 109.50 | 70 | 120 | |
| Sc | 45 | H2 | 482847 | 0.39 | 475873 | 101.47 | 70 | 120 | |
| Sc | 45 | He | 199640 | 0.49 | 199736 | 99.95 | 70 | 120 | |
| Sc | 45 | NoGas | 2206365 | 0.21 | 2096637 | 105.23 | 70 | 120 | |
| Ge | 72 | H2 | 122827 | 0.17 | 122394 | 100.35 | 70 | 120 | |
| Ge | 72 | He | 120732 | 0.98 | 123228 | 97.97 | 70 | 120 | |
| Ge | 72 | NoGas | 489201 | 0.52 | 485769 | 100.71 | 70 | 120 | |
| In | 115 | H2 | 2830949 | 0.76 | 2822980 | 100.28 | 70 | 120 | |
| In | 115 | He | 1104220 | 0.64 | 1094773 | 100.86 | 70 | 120 | |
| In | 115 | NoGas | 3279275 | 0.31 | 3222140 | 101.77 | 70 | 120 | |
| Tb | 159 | H2 | 5493488 | 0.44 | 5338807 | 102.90 | 70 | 120 | |
| Tb | 159 | He | 3295181 | 0.89 | 3232159 | 101.95 | 70 | 120 | |
| Tb | 159 | NoGas | 4415602 | 0.92 | 4336564 | 101.82 | 70 | 120 | |
| Ho | 165 | H2 | 5108991 | 0.40 | 5094749 | 100.28 | 70 | 120 | |
| Ho | 165 | He | 3212318 | 1.17 | 3120127 | 102.95 | 70 | 120 | |
| Ho | 165 | NoGas | 4231248 | 1.79 | 4144894 | 102.08 | 70 | 120 | |

# Initial Calibration Blank (ICB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICB |
| Data File Name | 010_ICB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:44:58-08:00 |
| Sample Type | ICB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.010 | -71.9 | 77 | 32.8 | 0.1 | |
| B | 11 | 45 | NoGas | 0.231 | 111.0 | 18533 | 2.7 | 8 | |
| Na | 23 | 45 | He | -16.723 | -5.5 | 71045 | 1.0 | 50 | |
| Mg | 24 | 45 | He | -1.259 | -2.6 | 486 | 5.2 | 20 | |
| Al | 27 | 45 | He | -1.200 | -16.7 | 453 | 13.5 | 10 | |
| K | 39 | 45 | He | -1.804 | -344.3 | 68262 | 4.7 | 40 | |
| Ca | 44 | 45 | He | -1.064 | -97.8 | 284 | 12.2 | 150 | |
| Ti | 47 | 45 | He | -0.022 | -230.8 | 10 | 100.0 | 0.5 | |
| V | 51 | 45 | He | -0.061 | -11.5 | 1080 | 3.6 | 0.4 | |
| Cr | 52 | 45 | He | -0.010 | -85.2 | 1124 | 5.9 | 0.2 | |
| Mn | 55 | 45 | He | -0.230 | -15.1 | 2356 | 6.1 | 0.3 | |
| Fe | 56 | 45 | He | -1.386 | -2.5 | 9587 | 1.7 | 30 | |
| Co | 59 | 45 | He | -0.017 | -9.2 | 59 | 31.2 | 0.4 | |
| Ni | 60 | 45 | He | -0.067 | -26.2 | 202 | 28.1 | 0.4 | |
| Cu | 63 | 45 | He | -0.001 | -671.7 | 634 | 12.1 | 0.4 | |
| Zn | 66 | 115 | He | -0.106 | -40.9 | 1010 | 6.5 | 15 | |
| As | 75 | 115 | He | 0.135 | 25.9 | 171 | 18.5 | 0.2 | |
| Se | 78 | 115 | H2 | 0.062 | 42.9 | 23 | 28.6 | 0.4 | |
| Se | 78 | 115 | He | -0.153 | -140.6 | 66 | 20.6 | 0.4 | |
| Sr | 88 | 115 | NoGas | -0.001 | -72.0 | 287 | 10.1 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.072 | -13.7 | 1163 | 5.7 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.003 | 56.4 | 70 | 37.8 | 0.1 | |
| Cd | 111 | 115 | He | 0.000 | -9019.7 | 2 | 173.2 | 0.1 | |
| Sn | 118 | 115 | He | -0.020 | -135.7 | 2545 | 4.6 | 0.1 | |
| Sn | 118 | 115 | NoGas | 0.032 | 46.6 | 6211 | 2.6 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.161 | 10.4 | 4537 | 4.1 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.004 | 145.3 | 137 | 18.4 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.008 | 38.8 | 593 | 15.5 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.029 | -1.6 | 1070 | 0.0 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 395897 | 0.86 | 349963 | 113.13 | 70 | 120 | |
| Sc | 45 | H2 | 481549 | 0.58 | 475873 | 101.19 | 70 | 120 | |
| Sc | 45 | He | 198304 | 0.75 | 199736 | 99.28 | 70 | 120 | |
| Sc | 45 | NoGas | 2250975 | 1.79 | 2096637 | 107.36 | 70 | 120 | |
| Ge | 72 | H2 | 125702 | 1.24 | 122394 | 102.70 | 70 | 120 | |
| Ge | 72 | He | 121309 | 0.06 | 123228 | 98.44 | 70 | 120 | |
| Ge | 72 | NoGas | 497038 | 0.72 | 485769 | 102.32 | 70 | 120 | |
| In | 115 | H2 | 2839870 | 0.95 | 2822980 | 100.60 | 70 | 120 | |
| In | 115 | He | 1110286 | 0.61 | 1094773 | 101.42 | 70 | 120 | |
| In | 115 | NoGas | 3238768 | 0.42 | 3222140 | 100.52 | 70 | 120 | |
| Tb | 159 | H2 | 5366055 | 0.81 | 5338807 | 100.51 | 70 | 120 | |
| Tb | 159 | He | 3295345 | 0.85 | 3232159 | 101.95 | 70 | 120 | |
| Tb | 159 | NoGas | 4359892 | 0.44 | 4336564 | 100.54 | 70 | 120 | |
| Ho | 165 | H2 | 5086123 | 0.91 | 5094749 | 99.83 | 70 | 120 | |
| Ho | 165 | He | 3179107 | 0.98 | 3120127 | 101.89 | 70 | 120 | |
| Ho | 165 | NoGas | 4192437 | 1.74 | 4144894 | 101.15 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 014_CCV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T12:08:56-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 51.609 | 1.223 | 177901 | 1.34 | 50 | 103.2 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 48.726 | 2.919 | 117385 | 2.35 | 50 | 97.5 | 89.6 | 110.4 | |
| Na | 23 | 45 | He | 1268.239 | 1.967 | 1675483 | 1.41 | 1250 | 101.5 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2553.993 | 0.899 | 1734309 | 0.27 | 2500 | 102.2 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 1011.066 | 0.980 | 300825 | 1.10 | 1000 | 101.1 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 997.843 | 0.564 | 649404 | 0.58 | 1000 | 99.8 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2518.069 | 0.817 | 81444 | 0.29 | 2500 | 100.7 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 50.849 | 2.028 | 10380 | 1.00 | 50 | 101.7 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 49.638 | 1.007 | 317570 | 0.86 | 50 | 99.3 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 49.925 | 1.524 | 385791 | 0.81 | 50 | 99.8 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 50.146 | 0.630 | 239417 | 1.05 | 50 | 100.3 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 1015.202 | 0.388 | 6997151 | 0.70 | 1000 | 101.5 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 50.301 | 1.276 | 609286 | 0.35 | 50 | 100.6 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 50.486 | 1.424 | 166305 | 1.38 | 50 | 101.0 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 50.160 | 1.234 | 451246 | 0.62 | 50 | 100.3 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 48.936 | 0.466 | 75233 | 0.25 | 50 | 97.9 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 49.730 | 1.349 | 45561 | 2.01 | 50 | 99.5 | 89.6 | 110.4 | |
| Se | 78 | 115 | H2 | 51.259 | 1.744 | 12935 | 2.62 | 50 | 102.5 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 49.652 | 3.959 | 3347 | 4.26 | 50 | 99.3 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 50.495 | 2.564 | 1742333 | 1.05 | 50 | 101.0 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 49.233 | 0.434 | 326108 | 1.64 | 50 | 98.5 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 24.823 | 1.782 | 417066 | 0.69 | 25 | 99.3 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 49.646 | 0.436 | 98267 | 1.00 | 50 | 99.3 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.152 | 0.852 | 215634 | 0.99 | 50 | 98.3 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 48.940 | 1.572 | 499270 | 0.77 | 50 | 97.9 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 48.630 | 1.873 | 614272 | 1.45 | 50 | 97.3 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 49.488 | 1.523 | 242553 | 0.76 | 50 | 99.0 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.624 | 1.332 | 1493834 | 0.59 | 50 | 97.2 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 48.796 | 1.715 | 2018369 | 0.23 | 50 | 97.6 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 414132 | 0.58 | 349963 | 118.34 | 70 | 120 | |
| Sc | 45 | H2 | 496800 | 0.18 | 475873 | 104.40 | 70 | 120 | |
| Sc | 45 | He | 203625 | 1.08 | 199736 | 101.95 | 70 | 120 | |
| Sc | 45 | NoGas | 2298120 | 0.12 | 2096637 | 109.61 | 70 | 120 | |
| Ge | 72 | H2 | 126263 | 0.34 | 122394 | 103.16 | 70 | 120 | |
| Ge | 72 | He | 122796 | 0.70 | 123228 | 99.65 | 70 | 120 | |
| Ge | 72 | NoGas | 501401 | 0.87 | 485769 | 103.22 | 70 | 120 | |
| In | 115 | H2 | 2866740 | 1.80 | 2822980 | 101.55 | 70 | 120 | |
| In | 115 | He | 1129128 | 0.70 | 1094773 | 103.14 | 70 | 120 | |
| In | 115 | NoGas | 3333081 | 1.79 | 3222140 | 103.44 | 70 | 120 | |
| Tb | 159 | H2 | 5459322 | 1.38 | 5338807 | 102.26 | 70 | 120 | |
| Tb | 159 | He | 3374059 | 1.37 | 3232159 | 104.39 | 70 | 120 | |
| Tb | 159 | NoGas | 4482729 | 1.64 | 4336564 | 103.37 | 70 | 120 | |
| Ho | 165 | H2 | 5164874 | 0.92 | 5094749 | 101.38 | 70 | 120 | |
| Ho | 165 | He | 3263213 | 1.93 | 3120127 | 104.59 | 70 | 120 | |
| Ho | 165 | NoGas | 4328392 | 1.50 | 4144894 | 104.43 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 016_CCB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T12:20:52-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.016 | -36.1 | 60 | 33.3 | 0.1 | |
| B | 11 | 45 | NoGas | -1.613 | -25.0 | 15584 | 5.3 | 8 | |
| Na | 23 | 45 | He | -21.641 | -6.1 | 66821 | 2.4 | 50 | |
| Mg | 24 | 45 | He | -1.329 | -1.8 | 451 | 3.5 | 20 | |
| Al | 27 | 45 | He | -1.237 | -18.2 | 454 | 15.0 | 10 | |
| K | 39 | 45 | He | -6.732 | -33.1 | 67248 | 2.1 | 40 | |
| Ca | 44 | 45 | He | -2.606 | -16.4 | 242 | 5.2 | 150 | |
| Ti | 47 | 45 | He | -0.029 | -215.5 | 9 | 142.0 | 0.5 | |
| V | 51 | 45 | He | 0.011 | 150.8 | 1561 | 6.3 | 0.4 | |
| Cr | 52 | 45 | He | -0.028 | -20.6 | 1019 | 4.2 | 0.2 | |
| Mn | 55 | 45 | He | -0.309 | -4.3 | 2049 | 3.5 | 0.3 | |
| Fe | 56 | 45 | He | -1.417 | -1.8 | 9630 | 1.4 | 30 | |
| Co | 59 | 45 | He | -0.014 | -5.1 | 102 | 8.2 | 0.4 | |
| Ni | 60 | 45 | He | -0.079 | -17.3 | 168 | 26.5 | 0.4 | |
| Cu | 63 | 45 | He | -0.007 | -36.0 | 599 | 4.0 | 0.4 | |
| Zn | 66 | 115 | He | -0.054 | -118.8 | 1102 | 9.3 | 15 | |
| As | 75 | 115 | He | 0.040 | 69.1 | 87 | 29.0 | 0.2 | |
| Se | 78 | 115 | H2 | 0.030 | 177.1 | 16 | 86.6 | 0.4 | |
| Se | 78 | 115 | He | -0.201 | -215.4 | 63 | 45.0 | 0.4 | |
| Sr | 88 | 115 | NoGas | -0.001 | -267.6 | 313 | 20.5 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.096 | -12.0 | 1050 | 6.7 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.000 | -146.9 | 17 | 69.3 | 0.1 | |
| Cd | 111 | 115 | He | 0.000 | -24.5 | 2 | 0.0 | 0.1 | |
| Sn | 118 | 115 | He | 0.004 | 241.0 | 2684 | 0.9 | 0.1 | |
| Sn | 118 | 115 | NoGas | 0.008 | 259.1 | 6205 | 3.3 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.208 | 6.0 | 5318 | 3.6 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.015 | 87.3 | 197 | 33.9 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.002 | 40.2 | 444 | 7.0 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.037 | -2.5 | 763 | 5.3 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 417099 | 1.66 | 349963 | 119.18 | 70 | 120 | |
| Sc | 45 | H2 | 496411 | 0.59 | 475873 | 104.32 | 70 | 120 | |
| Sc | 45 | He | 203623 | 0.45 | 199736 | 101.95 | 70 | 120 | |
| Sc | 45 | NoGas | 2359597 | 0.79 | 2096637 | 112.54 | 70 | 120 | |
| Ge | 72 | H2 | 130074 | 1.48 | 122394 | 106.28 | 70 | 120 | |
| Ge | 72 | He | 124419 | 1.35 | 123228 | 100.97 | 70 | 120 | |
| Ge | 72 | NoGas | 510289 | 0.84 | 485769 | 105.05 | 70 | 120 | |
| In | 115 | H2 | 2894430 | 0.72 | 2822980 | 102.53 | 70 | 120 | |
| In | 115 | He | 1125688 | 0.71 | 1094773 | 102.82 | 70 | 120 | |
| In | 115 | NoGas | 3364488 | 0.65 | 3222140 | 104.42 | 70 | 120 | |
| Tb | 159 | H2 | 5401539 | 1.67 | 5338807 | 101.18 | 70 | 120 | |
| Tb | 159 | He | 3348764 | 1.42 | 3232159 | 103.61 | 70 | 120 | |
| Tb | 159 | NoGas | 4508654 | 0.63 | 4336564 | 103.97 | 70 | 120 | |
| Ho | 165 | H2 | 5118024 | 0.46 | 5094749 | 100.46 | 70 | 120 | |
| Ho | 165 | He | 3236435 | 0.35 | 3120127 | 103.73 | 70 | 120 | |
| Ho | 165 | NoGas | 4323444 | 1.69 | 4144894 | 104.31 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 104_CCV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:06:02-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 48.005 | 0.492 | 174481 | 0.34 | 50 | 96.0 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 455.035 | 2.500 | 993579 | 2.32 | 50 | 910.1 | 89.6 | 110.4 | >+/- 10% |
| Na | 23 | 45 | He | 1393.593 | 2.088 | 1870391 | 1.24 | 1250 | 111.5 | 89.6 | 110.4 | >+/- 10% |
| Mg | 24 | 45 | He | 2468.619 | 3.545 | 1711477 | 2.71 | 2500 | 98.7 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 981.014 | 0.900 | 298057 | 0.59 | 1000 | 98.1 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 987.784 | 1.650 | 657111 | 0.76 | 1000 | 98.8 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2453.506 | 1.735 | 81034 | 0.88 | 2500 | 98.1 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 48.212 | 1.228 | 10051 | 0.83 | 50 | 96.4 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 48.833 | 1.014 | 319025 | 0.48 | 50 | 97.7 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 47.796 | 0.563 | 377217 | 1.06 | 50 | 95.6 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 48.189 | 0.841 | 235061 | 0.88 | 50 | 96.4 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 962.175 | 1.504 | 6772094 | 0.73 | 1000 | 96.2 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 47.855 | 0.748 | 591935 | 0.88 | 50 | 95.7 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 46.809 | 0.998 | 157473 | 0.41 | 50 | 93.6 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 47.193 | 0.481 | 433565 | 0.40 | 50 | 94.4 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 46.236 | 0.836 | 73896 | 0.83 | 50 | 92.5 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 48.575 | 0.725 | 46218 | 0.46 | 50 | 97.1 | 89.6 | 110.4 | |
| Se | 78 | 115 | H2 | 50.799 | 2.557 | 13231 | 1.46 | 50 | 101.6 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 49.311 | 4.468 | 3453 | 4.41 | 50 | 98.6 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 49.703 | 1.123 | 1813364 | 1.31 | 50 | 99.4 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 47.493 | 1.910 | 332553 | 0.48 | 50 | 95.0 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 23.983 | 0.405 | 426030 | 1.03 | 25 | 95.9 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 47.599 | 0.105 | 97849 | 0.22 | 50 | 95.2 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.591 | 0.130 | 225930 | 0.16 | 50 | 99.2 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 48.852 | 2.038 | 526823 | 0.63 | 50 | 97.7 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 47.969 | 2.732 | 640488 | 1.38 | 50 | 95.9 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 49.087 | 0.762 | 252435 | 0.49 | 50 | 98.2 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.587 | 1.275 | 1566403 | 2.37 | 50 | 97.2 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 47.130 | 0.707 | 2045625 | 0.64 | 50 | 94.3 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 431423 | 1.25 | 349963 | 123.28 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 512128 | 0.36 | 475873 | 107.62 | 70 | 120 | |
| Sc | 45 | He | 207916 | 0.85 | 199736 | 104.10 | 70 | 120 | |
| Sc | 45 | NoGas | 2423081 | 0.17 | 2096637 | 115.57 | 70 | 120 | |
| Ge | 72 | H2 | 132313 | 0.85 | 122394 | 108.10 | 70 | 120 | |
| Ge | 72 | He | 127968 | 1.38 | 123228 | 103.85 | 70 | 120 | |
| Ge | 72 | NoGas | 523424 | 0.87 | 485769 | 107.75 | 70 | 120 | |
| In | 115 | H2 | 2959494 | 1.37 | 2822980 | 104.84 | 70 | 120 | |
| In | 115 | He | 1172702 | 0.28 | 1094773 | 107.12 | 70 | 120 | |
| In | 115 | NoGas | 3523345 | 1.43 | 3222140 | 109.35 | 70 | 120 | |
| Tb | 159 | H2 | 5593517 | 0.62 | 5338807 | 104.77 | 70 | 120 | |
| Tb | 159 | He | 3490319 | 0.94 | 3232159 | 107.99 | 70 | 120 | |
| Tb | 159 | NoGas | 4661851 | 0.74 | 4336564 | 107.50 | 70 | 120 | |
| Ho | 165 | H2 | 5340458 | 0.86 | 5094749 | 104.82 | 70 | 120 | |
| Ho | 165 | He | 3397838 | 0.25 | 3120127 | 108.90 | 70 | 120 | |
| Ho | 165 | NoGas | 4541191 | 1.18 | 4144894 | 109.56 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 106_CCB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:17:57-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.031 | -10.2 | 7 | 173.2 | 0.1 | |
| B | 11 | 45 | NoGas | 373.808 | 1.4 | 834951 | 1.2 | 8 | >LOD |
| Na | 23 | 45 | He | 101.669 | 1.1 | 225580 | 0.6 | 50 | >LOD |
| Mg | 24 | 45 | He | -1.103 | -6.7 | 618 | 7.7 | 20 | |
| Al | 27 | 45 | He | -0.813 | -11.8 | 593 | 5.5 | 10 | |
| K | 39 | 45 | He | 5.515 | 88.7 | 76030 | 4.5 | 40 | |
| Ca | 44 | 45 | He | -2.337 | -29.0 | 257 | 9.4 | 150 | |
| Ti | 47 | 45 | He | -0.040 | -69.3 | 7 | 86.6 | 0.5 | |
| V | 51 | 45 | He | 0.057 | 29.4 | 1899 | 5.2 | 0.4 | |
| Cr | 52 | 45 | He | -0.052 | -14.6 | 848 | 6.5 | 0.2 | |
| Mn | 55 | 45 | He | -0.503 | -6.2 | 1165 | 12.3 | 0.3 | |
| Fe | 56 | 45 | He | -1.305 | -1.6 | 10638 | 2.0 | 30 | |
| Co | 59 | 45 | He | -0.016 | -25.5 | 80 | 62.9 | 0.4 | |
| Ni | 60 | 45 | He | -0.094 | -3.7 | 122 | 10.3 | 0.4 | |
| Cu | 63 | 45 | He | 0.146 | 12.2 | 2021 | 8.6 | 0.4 | |
| Zn | 66 | 115 | He | -0.146 | -19.9 | 1020 | 4.4 | 15 | |
| As | 75 | 115 | He | 0.037 | 78.3 | 89 | 31.2 | 0.2 | |
| Se | 78 | 115 | H2 | 0.010 | 141.9 | 11 | 34.6 | 0.4 | |
| Se | 78 | 115 | He | 0.592 | 51.9 | 122 | 17.3 | 0.4 | >LOD |
| Sr | 88 | 115 | NoGas | 0.006 | 17.4 | 577 | 7.2 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.085 | -11.0 | 1190 | 5.1 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.002 | 81.6 | 57 | 44.4 | 0.1 | |
| Cd | 111 | 115 | He | 0.002 | 44.9 | 7 | 31.5 | 0.1 | |
| Sn | 118 | 115 | He | 0.001 | 4427.0 | 2827 | 4.5 | 0.1 | |
| Sn | 118 | 115 | NoGas | -0.002 | -2476.2 | 6478 | 6.0 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.060 | 20.2 | 3647 | 4.4 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.011 | 115.6 | 183 | 33.3 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.003 | 3.0 | 471 | 1.3 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.041 | -3.6 | 620 | 9.8 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 445135 | 0.54 | 349963 | 127.19 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 519347 | 0.76 | 475873 | 109.14 | 70 | 120 | |
| Sc | 45 | He | 208205 | 0.66 | 199736 | 104.24 | 70 | 120 | |
| Sc | 45 | NoGas | 2468292 | 1.21 | 2096637 | 117.73 | 70 | 120 | |
| Ge | 72 | H2 | 135719 | 1.56 | 122394 | 110.89 | 70 | 120 | |
| Ge | 72 | He | 131154 | 1.41 | 123228 | 106.43 | 70 | 120 | |
| Ge | 72 | NoGas | 543881 | 1.30 | 485769 | 111.96 | 70 | 120 | |
| In | 115 | H2 | 3073457 | 1.62 | 2822980 | 108.87 | 70 | 120 | |
| In | 115 | He | 1192588 | 0.20 | 1094773 | 108.93 | 70 | 120 | |
| In | 115 | NoGas | 3568524 | 0.70 | 3222140 | 110.75 | 70 | 120 | |
| Tb | 159 | H2 | 5588457 | 2.18 | 5338807 | 104.68 | 70 | 120 | |
| Tb | 159 | He | 3499888 | 0.46 | 3232159 | 108.28 | 70 | 120 | |
| Tb | 159 | NoGas | 4692811 | 1.83 | 4336564 | 108.21 | 70 | 120 | |
| Ho | 165 | H2 | 5331455 | 1.06 | 5094749 | 104.65 | 70 | 120 | |
| Ho | 165 | He | 3436052 | 2.50 | 3120127 | 110.13 | 70 | 120 | |
| Ho | 165 | NoGas | 4544829 | 1.83 | 4144894 | 109.65 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 117_CCV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T22:23:52-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 49.292 | 1.252 | 182253 | 0.67 | 50 | 98.6 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 323.729 | 1.554 | 724830 | 1.42 | 50 | 647.5 | 89.6 | 110.4 | >+/- 10% |
| Na | 23 | 45 | He | 1287.113 | 0.684 | 1737020 | 0.32 | 1250 | 103.0 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2458.487 | 0.728 | 1706801 | 0.47 | 2500 | 98.3 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 984.368 | 0.914 | 299443 | 1.08 | 1000 | 98.4 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 991.505 | 0.361 | 660145 | 0.35 | 1000 | 99.2 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2463.129 | 0.755 | 81454 | 0.64 | 2500 | 98.5 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 48.592 | 2.977 | 10143 | 3.34 | 50 | 97.2 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 48.482 | 0.282 | 317135 | 0.35 | 50 | 97.0 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 47.448 | 0.446 | 374917 | 0.45 | 50 | 94.9 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 48.232 | 0.546 | 235555 | 0.77 | 50 | 96.5 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 958.437 | 0.225 | 6754485 | 0.60 | 1000 | 95.8 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 47.984 | 0.555 | 594241 | 0.26 | 50 | 96.0 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 46.799 | 0.716 | 157633 | 0.39 | 50 | 93.6 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 46.555 | 0.308 | 428230 | 0.28 | 50 | 93.1 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 46.343 | 1.742 | 74312 | 1.28 | 50 | 92.7 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 47.722 | 0.773 | 45562 | 0.28 | 50 | 95.4 | 89.6 | 110.4 | |
| Se | 78 | 115 | H2 | 49.220 | 1.185 | 13167 | 1.28 | 50 | 98.4 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 47.260 | 4.267 | 3324 | 4.36 | 50 | 94.5 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 49.093 | 1.956 | 1796820 | 1.56 | 50 | 98.2 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 47.595 | 0.678 | 334389 | 0.98 | 50 | 95.2 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 23.894 | 0.466 | 425817 | 0.67 | 25 | 95.6 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 47.370 | 0.460 | 97711 | 0.53 | 50 | 94.7 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.232 | 0.373 | 225082 | 0.53 | 50 | 98.5 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 48.201 | 1.035 | 521655 | 1.29 | 50 | 96.4 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 48.503 | 1.847 | 649824 | 2.05 | 50 | 97.0 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 48.575 | 0.486 | 250474 | 0.12 | 50 | 97.1 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.189 | 1.723 | 1557472 | 1.48 | 50 | 96.4 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 46.878 | 1.183 | 2040097 | 0.63 | 50 | 93.8 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 447026 | 1.31 | 349963 | 127.74 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 526619 | 1.09 | 475873 | 110.66 | 70 | 120 | |
| Sc | 45 | He | 208164 | 0.40 | 199736 | 104.22 | 70 | 120 | |
| Sc | 45 | NoGas | 2465184 | 1.38 | 2096637 | 117.58 | 70 | 120 | |
| Ge | 72 | H2 | 139323 | 0.73 | 122394 | 113.83 | 70 | 120 | |
| Ge | 72 | He | 129089 | 1.42 | 123228 | 104.76 | 70 | 120 | |
| Ge | 72 | NoGas | 530577 | 1.80 | 485769 | 109.22 | 70 | 120 | |
| In | 115 | H2 | 3039242 | 1.15 | 2822980 | 107.66 | 70 | 120 | |
| In | 115 | He | 1176706 | 0.59 | 1094773 | 107.48 | 70 | 120 | |
| In | 115 | NoGas | 3534593 | 0.49 | 3222140 | 109.70 | 70 | 120 | |
| Tb | 159 | H2 | 5493028 | 0.59 | 5338807 | 102.89 | 70 | 120 | |
| Tb | 159 | He | 3446730 | 1.04 | 3232159 | 106.64 | 70 | 120 | |
| Tb | 159 | NoGas | 4725118 | 0.80 | 4336564 | 108.96 | 70 | 120 | |
| Ho | 165 | H2 | 5350218 | 0.90 | 5094749 | 105.01 | 70 | 120 | |
| Ho | 165 | He | 3381774 | 2.11 | 3120127 | 108.39 | 70 | 120 | |
| Ho | 165 | NoGas | 4553169 | 0.61 | 4144894 | 109.85 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 119_CCB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T22:35:48-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.032 | -4.8 | 3 | 173.2 | 0.1 | |
| B | 11 | 45 | NoGas | 257.912 | 1.4 | 586365 | 0.6 | 8 | >LOD |
| Na | 23 | 45 | He | 40.268 | 32.1 | 149237 | 11.3 | 50 | |
| Mg | 24 | 45 | He | -1.189 | -20.6 | 566 | 30.6 | 20 | |
| Al | 27 | 45 | He | -0.917 | -9.0 | 569 | 4.4 | 10 | |
| K | 39 | 45 | He | 4.653 | 116.6 | 76505 | 4.2 | 40 | |
| Ca | 44 | 45 | He | -1.507 | -128.3 | 288 | 22.6 | 150 | |
| Ti | 47 | 45 | He | -0.035 | -92.5 | 8 | 89.2 | 0.5 | |
| V | 51 | 45 | He | 0.037 | 46.3 | 1793 | 6.0 | 0.4 | |
| Cr | 52 | 45 | He | -0.051 | -17.4 | 868 | 8.2 | 0.2 | |
| Mn | 55 | 45 | He | -0.496 | -2.8 | 1212 | 5.5 | 0.3 | |
| Fe | 56 | 45 | He | -1.360 | -0.3 | 10383 | 0.5 | 30 | |
| Co | 59 | 45 | He | -0.016 | -4.0 | 74 | 11.3 | 0.4 | |
| Ni | 60 | 45 | He | -0.098 | -9.6 | 110 | 28.9 | 0.4 | |
| Cu | 63 | 45 | He | 0.025 | 31.7 | 917 | 7.6 | 0.4 | |
| Zn | 66 | 115 | He | -0.133 | -26.7 | 1041 | 5.6 | 15 | |
| As | 75 | 115 | He | 0.051 | 44.9 | 102 | 21.7 | 0.2 | |
| Se | 78 | 115 | H2 | 0.043 | 46.6 | 20 | 28.9 | 0.4 | |
| Se | 78 | 115 | He | 0.098 | 273.5 | 88 | 20.9 | 0.4 | |
| Sr | 88 | 115 | NoGas | 0.002 | 136.4 | 437 | 24.5 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.126 | -27.6 | 897 | 27.8 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.000 | 201.2 | 33 | 45.8 | 0.1 | |
| Cd | 111 | 115 | He | 0.002 | 52.3 | 6 | 33.3 | 0.1 | |
| Sn | 118 | 115 | He | 0.008 | 282.6 | 2856 | 3.2 | 0.1 | |
| Sn | 118 | 115 | NoGas | -0.023 | -91.4 | 6196 | 2.6 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.308 | 9.6 | 6922 | 5.2 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.025 | 25.9 | 253 | 13.9 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.004 | 23.5 | 499 | 6.0 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.040 | -9.3 | 650 | 25.9 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 453243 | 1.29 | 349963 | 129.51 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 524503 | 1.02 | 475873 | 110.22 | 70 | 120 | |
| Sc | 45 | He | 210966 | 0.40 | 199736 | 105.62 | 70 | 120 | |
| Sc | 45 | NoGas | 2485856 | 0.79 | 2096637 | 118.56 | 70 | 120 | |
| Ge | 72 | H2 | 138722 | 1.00 | 122394 | 113.34 | 70 | 120 | |
| Ge | 72 | He | 130833 | 0.93 | 123228 | 106.17 | 70 | 120 | |
| Ge | 72 | NoGas | 543815 | 0.55 | 485769 | 111.95 | 70 | 120 | |
| In | 115 | H2 | 3054890 | 2.01 | 2822980 | 108.22 | 70 | 120 | |
| In | 115 | He | 1191504 | 0.37 | 1094773 | 108.84 | 70 | 120 | |
| In | 115 | NoGas | 3537075 | 1.46 | 3222140 | 109.77 | 70 | 120 | |
| Tb | 159 | H2 | 5578025 | 1.40 | 5338807 | 104.48 | 70 | 120 | |
| Tb | 159 | He | 3485165 | 1.01 | 3232159 | 107.83 | 70 | 120 | |
| Tb | 159 | NoGas | 4692950 | 1.17 | 4336564 | 108.22 | 70 | 120 | |
| Ho | 165 | H2 | 5319296 | 1.83 | 5094749 | 104.41 | 70 | 120 | |
| Ho | 165 | He | 3387625 | 0.48 | 3120127 | 108.57 | 70 | 120 | |
| Ho | 165 | NoGas | 4525203 | 1.00 | 4144894 | 109.18 | 70 | 120 | |

# METALS

## Raw Data

APPL, INC.

# METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| 6020A | LEAD (PB) (DISSOL | 0.40 U | 3.0 | 0.40 | 0.19 | ug/L | 11/05/14 | 11/05/14 | #62A14-141105A-AZ05388 |

*Metals SC-Blank-REG MDLs*
*Printed: 11/12/14 9:53:09 AM*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | 141105A BLK |
| Data File Name | 107SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:23:57-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.031 | -0.034 | -10.12 | 7 | 173.21 | 10000 | |
| B | 11 | 45 | NoGas | 375.005 | 416.672 | 1.09 | 845713 | 0.90 | 10000 | |
| Na | 23 | 45 | He | 108.402 | 120.447 | 1.24 | 234430 | 0.73 | 1000000 | |
| Mg | 24 | 45 | He | -0.323 | -0.359 | -50.04 | 1160 | 9.50 | 1000000 | |
| Al | 27 | 45 | He | 0.177 | 0.196 | 87.01 | 894 | 5.61 | 1000000 | |
| K | 39 | 45 | He | 4.663 | 5.181 | 136.21 | 75589 | 4.69 | 500000 | |
| Ca | 44 | 45 | He | 3.722 | 4.136 | 0.92 | 457 | 0.73 | 500000 | |
| Ti | 47 | 45 | He | 0.050 | 0.056 | 49.42 | 26 | 19.92 | 10000 | |
| V | 51 | 45 | He | -0.150 | -0.167 | -9.65 | 549 | 16.76 | 10000 | |
| Cr | 52 | 45 | He | 0.203 | 0.226 | 10.15 | 2862 | 6.20 | 10000 | |
| Mn | 55 | 45 | He | -0.453 | -0.503 | -5.87 | 1406 | 8.72 | 50000 | |
| Fe | 56 | 45 | He | -0.241 | -0.268 | -379.03 | 18158 | 36.00 | 1000000 | |
| Co | 59 | 45 | He | -0.017 | -0.019 | -3.92 | 61 | 13.73 | 10000 | |
| Ni | 60 | 45 | He | 0.094 | 0.104 | 14.04 | 753 | 6.43 | 10000 | |
| Cu | 63 | 45 | He | 0.141 | 0.157 | 10.14 | 1975 | 6.63 | 10000 | |
| Zn | 66 | 115 | He | -0.012 | -0.013 | -423.51 | 1212 | 6.37 | 50000 | |
| As | 75 | 115 | He | -0.002 | -0.003 | -377.48 | 50 | 17.64 | 2000 | |
| Se | 78 | 115 | H2 | 0.102 | 0.114 | 47.30 | 34 | 36.64 | 10000 | |
| Se | 78 | 115 | He | 0.526 | 0.585 | 34.83 | 116 | 10.92 | 10000 | |
| Sr | 88 | 115 | NoGas | 0.024 | 0.027 | 24.34 | 1224 | 18.30 | 50000 | |
| Mo | 95 | 115 | NoGas | -0.048 | -0.053 | -44.57 | 1403 | 10.51 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.001 | 0.001 | 198.25 | 37 | 62.98 | 5000 | |
| Cd | 111 | 115 | He | 0.000 | 0.000 | -285.07 | 1 | 173.21 | 10000 | |
| Sn | 118 | 115 | He | -0.499 | -0.555 | -0.67 | 530 | 2.74 | 10000 | |
| Sn | 118 | 115 | NoGas | -0.487 | -0.541 | -0.44 | 1207 | 2.72 | 10000 | |
| Sb | 121 | 115 | NoGas | -0.034 | -0.038 | -3.01 | 2297 | 1.26 | 10000 | |
| Ba | 137 | 165 | NoGas | 0.038 | 0.042 | 42.04 | 313 | 24.79 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.050 | 0.055 | 9.23 | 1925 | 7.20 | 5000 | |
| Pb | 208 | 165 | NoGas | -0.041 | -0.045 | -10.24 | 613 | 28.07 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 459666 | 0.57 | 349963 | 131.35 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 513778 | 0.95 | 475873 | 107.97 | 70 | 120 | |
| Sc | 45 | He | 208438 | 0.54 | 199736 | 104.36 | 70 | 120 | |
| Sc | 45 | NoGas | 2492311 | 1.25 | 2096637 | 118.87 | 70 | 120 | |
| Ge | 72 | H2 | 135214 | 0.92 | 122394 | 110.47 | 70 | 120 | |
| Ge | 72 | He | 130814 | 0.47 | 123228 | 106.16 | 70 | 120 | |
| Ge | 72 | NoGas | 531266 | 0.97 | 485769 | 109.37 | 70 | 120 | |
| In | 115 | H2 | 2924241 | 0.56 | 2822980 | 103.59 | 70 | 120 | |
| In | 115 | He | 1170758 | 0.23 | 1094773 | 106.94 | 70 | 120 | |
| In | 115 | NoGas | 3452730 | 0.94 | 3222140 | 107.16 | 70 | 120 | |
| Tb | 159 | H2 | 5318196 | 0.58 | 5338807 | 99.61 | 70 | 120 | |
| Tb | 159 | He | 3399050 | 1.66 | 3232159 | 105.16 | 70 | 120 | |
| Tb | 159 | NoGas | 4546700 | 0.42 | 4336564 | 104.85 | 70 | 120 | |
| Ho | 165 | H2 | 5061784 | 0.19 | 5094749 | 99.35 | 70 | 120 | |
| Ho | 165 | He | 3336740 | 1.13 | 3120127 | 106.94 | 70 | 120 | |
| Ho | 165 | NoGas | 4392630 | 0.82 | 4144894 | 105.98 | 70 | 120 | |

# Laboratory Control Spike Recovery

## METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVED) | 50.0 | 44.4 | 88.8 | 80-120 | 11/05/14 | 11/05/14 | #62A14-141105A-AZ05388 |

Comments: _____

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | 141105A LCS |
| Data File Name | 108SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:29:56-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 8.737 | 9.707 | 0.61 | 32896 | 0.89 | 10000 | |
| B | 11 | 45 | NoGas | 389.158 | 432.398 | 1.42 | 880460 | 0.13 | 10000 | |
| Na | 23 | 45 | He | 4260.955 | 4734.395 | 0.60 | 5561159 | 0.61 | 1000000 | |
| Mg | 24 | 45 | He | 4207.189 | 4674.655 | 0.35 | 2936941 | 0.25 | 1000000 | |
| Al | 27 | 45 | He | 351.015 | 390.017 | 0.13 | 107945 | 0.19 | 1000000 | |
| K | 39 | 45 | He | 869.441 | 966.046 | 0.44 | 591263 | 0.28 | 500000 | |
| Ca | 44 | 45 | He | 4165.902 | 4628.780 | 0.41 | 138338 | 0.47 | 500000 | |
| Ti | 47 | 45 | He | 43.174 | 47.971 | 3.26 | 9066 | 3.27 | 10000 | |
| V | 51 | 45 | He | 43.685 | 48.539 | 0.49 | 287582 | 0.58 | 10000 | |
| Cr | 52 | 45 | He | 41.416 | 46.018 | 0.38 | 329335 | 0.48 | 10000 | |
| Mn | 55 | 45 | He | 41.128 | 45.698 | 0.88 | 202562 | 0.97 | 50000 | |
| Fe | 56 | 45 | He | 161.034 | 178.927 | 0.43 | 1158067 | 0.53 | 1000000 | |
| Co | 59 | 45 | He | 41.301 | 45.890 | 0.24 | 514510 | 0.19 | 10000 | |
| Ni | 60 | 45 | He | 39.729 | 44.143 | 0.91 | 134668 | 1.00 | 10000 | |
| Cu | 63 | 45 | He | 38.901 | 43.223 | 0.43 | 360030 | 0.48 | 10000 | |
| Zn | 66 | 115 | He | 75.305 | 83.672 | 0.80 | 119467 | 0.46 | 50000 | |
| As | 75 | 115 | He | 39.417 | 43.796 | 1.94 | 37480 | 1.97 | 2000 | |
| Se | 78 | 115 | H2 | 40.121 | 44.579 | 2.18 | 10352 | 2.89 | 10000 | |
| Se | 78 | 115 | He | 38.512 | 42.791 | 7.80 | 2711 | 7.52 | 10000 | |
| Sr | 88 | 115 | NoGas | 43.620 | 48.467 | 0.93 | 1552559 | 0.68 | 50000 | |
| Mo | 95 | 115 | NoGas | 43.771 | 48.634 | 0.63 | 299168 | 0.62 | 10000 | |
| Ag | 107 | 115 | NoGas | 17.226 | 19.139 | 0.89 | 298517 | 0.92 | 5000 | |
| Cd | 111 | 115 | He | 7.810 | 8.677 | 1.33 | 16041 | 1.38 | 10000 | |
| Sn | 118 | 115 | He | 43.911 | 48.791 | 0.34 | 200189 | 0.18 | 10000 | |
| Sn | 118 | 115 | NoGas | 43.589 | 48.432 | 0.91 | 459301 | 0.51 | 10000 | |
| Sb | 121 | 115 | NoGas | 45.164 | 50.182 | 1.03 | 588595 | 1.53 | 10000 | |
| Ba | 137 | 165 | NoGas | 43.155 | 47.950 | 3.23 | 216060 | 1.87 | 50000 | |
| Tl | 205 | 165 | NoGas | 38.963 | 43.292 | 0.93 | 1222977 | 0.59 | 5000 | |
| Pb | 208 | 165 | NoGas | 39.984 | 44.427 | 1.07 | 1690131 | 0.58 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 469498 | 0.59 | 349963 | 134.16 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 512702 | 0.60 | 475873 | 107.74 | 70 | 120 | |
| Sc | 45 | He | 209379 | 0.10 | 199736 | 104.83 | 70 | 120 | |
| Sc | 45 | NoGas | 2502677 | 1.45 | 2096637 | 119.37 | 70 | 120 | |
| Ge | 72 | H2 | 136059 | 0.78 | 122394 | 111.17 | 70 | 120 | |
| Ge | 72 | He | 130917 | 0.48 | 123228 | 106.24 | 70 | 120 | |
| Ge | 72 | NoGas | 531783 | 0.96 | 485769 | 109.47 | 70 | 120 | |
| In | 115 | H2 | 2930528 | 0.86 | 2822980 | 103.81 | 70 | 120 | |
| In | 115 | He | 1171624 | 0.34 | 1094773 | 107.02 | 70 | 120 | |
| In | 115 | NoGas | 3437218 | 1.19 | 3222140 | 106.67 | 70 | 120 | |
| Tb | 159 | H2 | 5302100 | 0.84 | 5338807 | 99.31 | 70 | 120 | |
| Tb | 159 | He | 3389941 | 0.98 | 3232159 | 104.88 | 70 | 120 | |
| Tb | 159 | NoGas | 4583283 | 0.70 | 4336564 | 105.69 | 70 | 120 | |
| Ho | 165 | H2 | 5062441 | 1.09 | 5094749 | 99.37 | 70 | 120 | |
| Ho | 165 | He | 3324787 | 1.09 | 3120127 | 106.56 | 70 | 120 | |
| Ho | 165 | NoGas | 4421847 | 1.49 | 4144894 | 106.68 | 70 | 120 | |

# US EPA Tune Check Sample Report

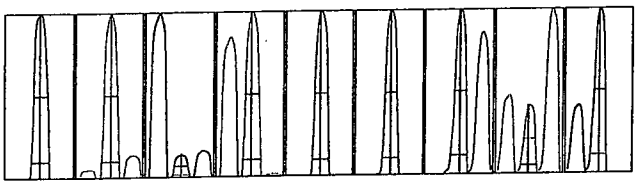
**Batch Folder** D:\DATA\Agilent Test.b
**Report Comment** C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
**Instrument Name** G3281A JP12101628

**[NoGas]**

| Mass | Count (Mean) | RSD% (Actual) | RSD% (Required) | RSD% (Flag) |
|---|---|---|---|---|
| 9 | 5320103 | 0.36 | 5.00 | |
| 24 | 20275605 | 0.50 | 5.00 | |
| 25 | 2773927 | 0.21 | 5.00 | |
| 26 | 3248884 | 0.50 | 5.00 | |
| 59 | 37346214 | 0.22 | 5.00 | |
| 115 | 51997937 | 0.86 | 5.00 | |
| 206 | 11917073 | 0.56 | 5.00 | |
| 207 | 10568943 | 0.38 | 5.00 | |
| 208 | 25044538 | 0.81 | 5.00 | |

| Mass | Replicate 1 Count | Replicate 2 Count | Replicate 3 Count | Replicate 4 Count | Replicate 5 Count |
|---|---|---|---|---|---|
| 9 | 5317560 | 5323673 | 5302166 | 5306036 | 5351077 |
| 24 | 20212444 | 20131546 | 20348679 | 20307342 | 20378013 |
| 25 | 2763696 | 2775360 | 2778239 | 2775842 | 2776499 |
| 26 | 3228315 | 3234695 | 3257767 | 3259145 | 3264497 |
| 59 | 37211212 | 37387118 | 37407556 | 37320587 | 37404598 |
| 115 | 51772596 | 51404189 | 52602684 | 52141066 | 52069152 |
| 206 | 11855366 | 11852906 | 12011898 | 11925427 | 11939770 |
| 207 | 10512196 | 10603973 | 10544261 | 10607516 | 10576770 |
| 208 | 24809791 | 25159675 | 24848403 | 25140665 | 25264154 |

**Integration Time [sec] =** 0.1



| Mass | Peak Height | Axis (Actual) | Axis (Required) | Axis (Flag) | Width-X% (Actual) | Width-X% (Required) | Width-X% (Flag) |
|---|---|---|---|---|---|---|---|
| 9 | 845064 | 9.05 | 8.9 - 9.1 | | 0.771 | 0.900 | |
| 24 | 3307675 | 24.10 | 23.9 - 24.1 | | 0.766 | 0.900 | |
| 25 | 451701 | 25.10 | 24.9 - 25.1 | | 0.752 | 0.900 | |
| 26 | 531326 | 26.05 | 25.9 - 26.1 | | 0.765 | 0.900 | |
| 59 | 6214844 | 59.05 | 58.9 - 59.1 | | 0.729 | 0.900 | |
| 115 | 9407439 | 115.10 | 114.9 - 115.1 | | 0.713 | 0.900 | |
| 206 | 2248474 | 206.05 | 205.9 - 206.1 | | 0.727 | 0.900 | |
| 207 | 1946016 | 207.00 | 206.9 - 207.1 | | 0.724 | 0.900 | |
| 208 | 4696037 | 208.05 | 207.9 - 208.1 | | 0.739 | 0.900 | |

**X% =** 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

**Tune Parameters**

**## Plasma Paramters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min | | | |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % | | | |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps | | | |
| S/C Temp | 2 | °C | | | | | | |

**## Lenses Parameters ##**

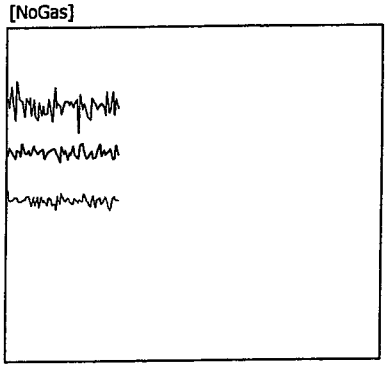
| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V | | | |
| Extract 2 | -145.0 | V | Cell Entrance | -30 | V | | | |
| Omega Bias | -70 | V | Cell Exit | -30 | V | | | |
| Deflect | 11.8 | V | | | | | | |

**## Cell Parameters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| Use Gas | false | | 3rd Gas Flow | 0 | % | | | |
| He Flow | 0.0 | mL/min | OctP Bias | -8.0 | V | | | |
| H2 Flow | 0.0 | mL/min | OctP RF | 170 | V | | | |
| Energy Discrimination | 5.1 | V | | | | | | |

# Current Signal

[NoGas]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 7 | 2000 | 1516 | 1528.1 | 3.78 |
| 59 | 5000 | 3025 | 3149.9 | 3.48 |
| 89 | 10000 | 4753 | 4768.1 | 2.69 |
| 140 | 10000 | 4648 | 4647.4 | 2.48 |
| 205 | 10000 | 6159 | 6220.1 | 2.11 |
| 156/140 | 1 | 0.452 % | 0.417 % | 34.04 |
| 70/140 | 5 | 2.775 % | 2.737 % | 10.99 |
| **Integration Time [sec]** | | 0.10 | | |

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V |
| Extract 2 | -145.0 | V | Cell Entrance | -30 | V |
| Omega Bias | -70 | V | Cell Exit | -30 | V |
| Deflect | 11.8 | V | | | |

**## Cell Parameters ##**

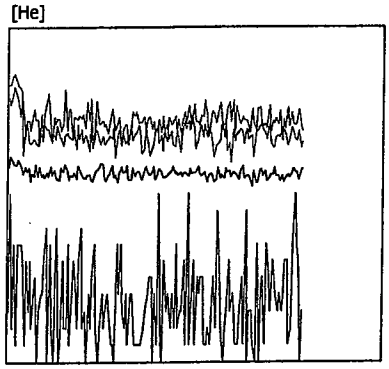
| | | | | | |
|---|---|---|---|---|---|
| Use Gas | false | | 3rd Gas Flow | 0 | % |
| He Flow | 0.0 | mL/min | OctP Bias | -8.0 | V |
| H2 Flow | 0.0 | mL/min | OctP RF | 170 | V |
| Energy Discrimination | 5.1 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.62E+2 | Pa | S/C Temp (L) | 2.0 | °C |
| Analyzer Press | 2.57E-4 | Pa | Reflected Power | 7 | W |
| Forward Power | 1601 | W | | | |

# Current Signal

[He]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 59 | 2000 | 1378 | 1448.2 | 4.74 |
| 89 | 2000 | 1311 | 1362.0 | 6.48 |
| 140 | 5000 | 3158 | 3134.1 | 3.75 |
| 205 | 10000 | 5766 | 5627.8 | 2.72 |
| 156/140 | 1 | 0.253 % | 0.225 % | 53.29 |
| 75 | 20 | 3 | 3.6 | 69.82 |
| 78 | 50 | 10 | 9.6 | 46.66 |

**Integration Time [sec]** 0.10

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V |
| Extract 2 | -145.0 | V | Cell Entrance | -40 | V |
| Omega Bias | -70 | V | Cell Exit | -60 | V |
| Deflect | 0.8 | V | | | |

**## Cell Parameters ##**

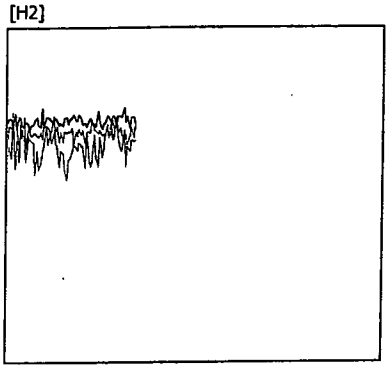
| | | | | | |
|---|---|---|---|---|---|
| Use Gas | true | | 3rd Gas Flow | 0 | % |
| He Flow | 3.7 | mL/min | OctP Bias | -19.0 | V |
| H2 Flow | 0.0 | mL/min | OctP RF | 170 | V |
| Energy Discrimination | 5.0 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.62E+2 | Pa | S/C Temp (L) | 1.9 | °C |
| Analyzer Press | 3.59E-4 | Pa | Reflected Power | 7 | W |
| Forward Power | 1599 | W | | | |

# Current Signal

[H2]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 59 | 500 | 331 | 321.0 | 6.91 |
| 89 | 5000 | 3534 | 3427.3 | 2.79 |
| 140 | 2000 | 1287 | 1270.5 | 5.25 |
| 205 | 10000 | 7145 | 7213.0 | 1.95 |
| 56 | 10000 | 5637 | 5967.9 | 8.99 |
| 78 | 20 | 2 | 1.1 | 107.65 |
| 80 | 50 | 15 | 14.5 | 32.91 |

**Integration Time [sec]** 0.10

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V |
| Extract 2 | -145.0 | V | Cell Entrance | -30 | V |
| Omega Bias | -70 | V | Cell Exit | -60 | V |
| Deflect | -2.4 | V | | | |

**## Cell Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Use Gas | true | | 3rd Gas Flow | 0 | % |
| He Flow | 0.0 | mL/min | OctP Bias | -18.0 | V |
| H2 Flow | 6.0 | mL/min | OctP RF | 170 | V |
| Energy Discrimination | 3.0 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.67E+2 | Pa | S/C Temp (L) | 2.0 | °C |
| Analyzer Press | 1.45E-3 | Pa | Reflected Power | 7 | W |
| Forward Power | 1599 | W | | | |

# Metals Digestion Worksheet

**Method Name** 3015 Digestion **Prep Method** M3015 **Set** 141105A **Units** mL

| Spikes | |
|---|---|
| Spiked ID 1 | LCSW LOT#1066596-34172 |
| Spiked ID 2 | LCSW LOT#1066556-34173 |
| Spiked ID 3 | |
| Spiked ID 4 | |
| **Spiked By** | NM Date: 11/05/14 11:00:00 AM |
| **Witnessed By** | SJH Date: 11/05/14 11:00:00 AM |

| | |
|---|---|
| Starting Temp: | 19 c |
| Ending Temp: | 170 c |
| Temperature Type: | Microwave |
| Sufficient Vol for Matrix QC: | Yes |
| **End Date/Time** | 11/05/14 12:30 |

| | Sample | Sample Container | Spike Amount | Spike ID | Digested Amount | Final Volume | Start Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 141105A Blk | | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 2 | 141105A LCS | | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 3 | AZ05388 | AZ05388W12 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 4 | AZ05389 | AZ05389W12 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 5 | AZ05513 | AZ05513W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 6 | AZ05514 | AZ05514W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 7 | AZ05515 | AZ05515W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 8 | AZ05516 | AZ05516W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 9 | AZ05516 DUP | AZ05516W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 10 | AZ05516 MS | AZ05516W10 | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 11 | AZ05593 | AZ05593W35 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 12 | AZ05593 MS | AZ05593W35 | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 13 | AZ05593 MSD | AZ05593W35 | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |

| Solvent and Lot# |
|---|
| HNO3 J.T.B #74185 1839 |
| |
| |
| |
| |

| Sample COC Transfer | |
|---|---|
| **Sample prep employee Initials** | nm |
| **Analyst's initials** | SJH |
| **Date** | 11/05/14 |
| **Time** | 15:01 |
| **Moved to** | metals |

| Technician's Initials | |
|---|---|
| **Scanned By** | nm |
| **Sample Preparation** | nm |
| **Digestion** | nm |
| **Bring up to volume** | nm |
| **Modified** | 11/05/14 10:41:45 AM |

**Reviewed By:** SJH **Date:** 11/05/14

# 6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 1 | 05 Nov 2014 | 10:57 | Calibration Blank | | 141105A | 1. |
| 2 | 05 Nov 2014 | 11:03 | Standard 1 | | 141105A | 1. |
| 3 | 05 Nov 2014 | 11:09 | Standard 2 | | 141105A | 1. |
| 4 | 05 Nov 2014 | 11:14 | Standard 3 | | 141105A | 1. |
| 5 | 05 Nov 2014 | 11:20 | Standard 4 | | 141105A | 1. |
| 6 | 05 Nov 2014 | 11:27 | ICV | | 141105A | 1. |
| 8 | 05 Nov 2014 | 11:44 | ICB | | 141105A | 1. |
| 12 | 05 Nov 2014 | 12:08 | CCV | | 141105A | 1. |
| 13 | 05 Nov 2014 | 12:20 | CCB | | 141105A | 1. |
| 14 | 05 Nov 2014 | 12:26 | ICSA | | 141105A | 1. |
| 15 | 05 Nov 2014 | 13:08 | ICSAB | | 141105A | 1. |
| 82 | 05 Nov 2014 | 21:06 | CCV | | 141105A | 1. |
| 83 | 05 Nov 2014 | 21:17 | CCB | | 141105A | 1. |
| 84 | 05 Nov 2014 | 21:23 | 141105A BLK | | 141105A | 1. |
| 85 | 05 Nov 2014 | 21:29 | 141105A LCS | | 141105A | 1. |
| 86 | 05 Nov 2014 | 21:41 | AZ05388W12 1/5 | | 141105A | 5. |
| 87 | 05 Nov 2014 | 21:47 | AZ05389W12 1/5 | | 141105A | 5. |
| 93 | 05 Nov 2014 | 22:23 | CCV | | 141105A | 1. |
| 94 | 05 Nov 2014 | 22:35 | CCB | | 141105A | 1. |

# INORGANIC ANALYSIS

APPL, INC.

# INORGANIC ANALYSIS
## QC Summary

APPL, INC.

# WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| SM 2320B | TOTAL ALKALINITY | 1.70 U | 2.0 | 1.70 | 0.85 | mg/L | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |
| EPA 353.2 | NITRATE-NITRITE- | 0.100 U | 0.10 | 0.100 | 0.028 | mg/L | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| EPA 9056 | SULFATE | 0.198 U | 1.00 | 0.198 | 0.090 | mg/L | 10/22/14 | 10/22/14 | #9056D-141022A-AZ05388 |
| EPA 9056 | CHLORIDE | 0.200 U | 1.00 | 0.200 | 0.080 | mg/L | 10/22/14 | 10/22/14 | #9056D-141022B-AZ05388 |

*Wetlab SC-Blank-REG MDLs*
*Printed: 11/19/14 10:44:16 AM*

**AMENDED PAGE**

# Laboratory Control Spike Recovery

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level mg/L | SPK Result mg/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 9056 | CHLORIDE | 20.0 | 19.0 | 95.0 | 80-120 | 10/22/14 | 10/22/14 | #9056D-141022B-AZ05388 |
| EPA 9056 | SULFATE | 20.0 | 18.3 | 91.5 | 80-120 | 10/22/14 | 10/22/14 | #9056D-141022A-AZ05388 |

Comments: _____

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 4.83 | 4.76 | 96.6 | 95.2 | 1.5 | 20 | 90-110 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| SM 2320B | TOTAL ALKALINITY AS CA | 250 | 253 | 254 | 101 | 102 | 0.39 | 20 | 90-110 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |

Comments:

# INORGANIC ANALYSIS
## Sample Data

APPL, INC.

# Wet Lab Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright

Project: 749435 Red Hill TO 0068

**Sample ID: RHMW07-GW-01**
Sample Collection Date: 10/20/14

**APPL ID: AZ05388**
ARF: 74672

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 0.063 J | 0.10 | 0.100 | 0.028 | mg/L | 1 | 11/05/14 | 11/05/14 |
| EPA 9056 | CHLORIDE | 362 | 10.00 | 2.000 | 0.800 | mg/L | 10 | 10/22/14 | 10/22/14 |
| EPA 9056 | SULFATE | 63.5 | 2.00 | 0.396 | 0.180 | mg/L | 2 | 10/22/14 | 10/22/14 |
| SM 2320B | TOTAL ALKALINITY AS CACO | 177 | 2.0 | 1.70 | 0.85 | mg/L | 1 | 11/03/14 | 11/03/14 |

J = Estimated value.

*Printed: 11/19/14 10:44:14 AM*

**AMENDED PAGE**

*APPL-F1-SC-NoMC-REG MDLs*

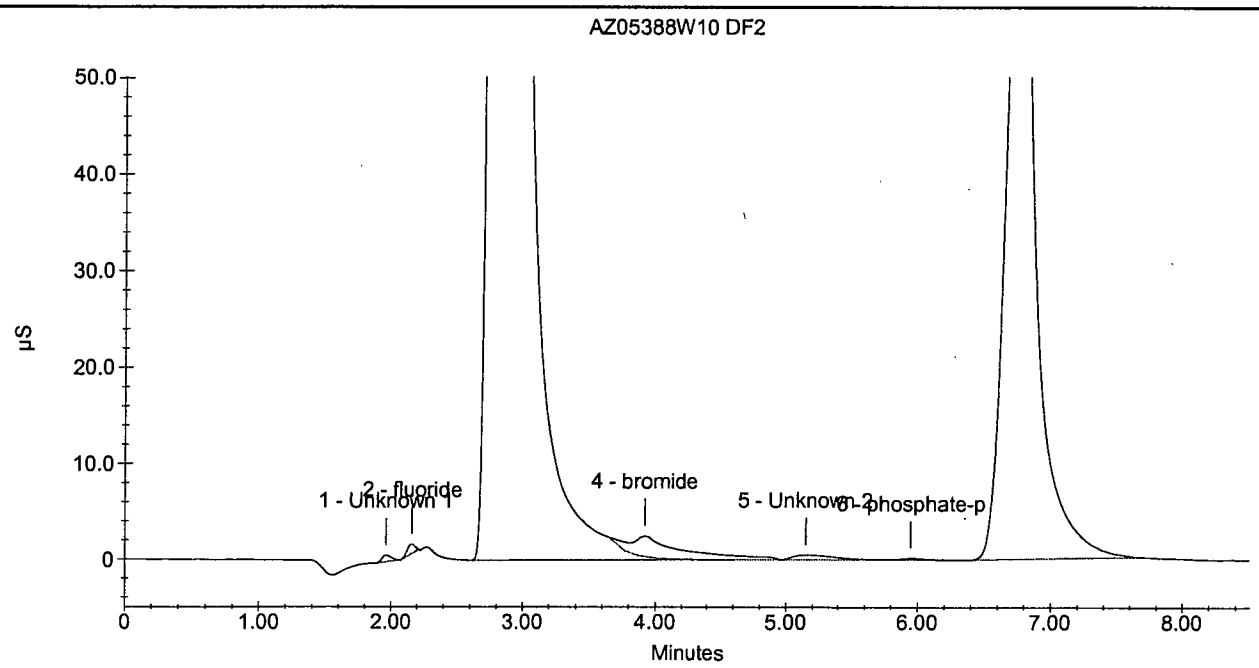
# Sample Analysis Report

Sample Name : AZ05388W10 DF2
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_007.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 11:32:03
System Operator : mm
Injection Number : 7
Multiplier : 2.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.96 | Unknown 1 | 0.0000 | 32031 | 6817 |
| 2 | 2.16 | fluoride | 0.2467 | 41970 | 9840 |
| 3 | 2.85 | chloride | 401.6458 | 115963139 | 15130783 |
| 4 | 3.92 | bromide | 5.3991 | 566363 | 21679 |
| 5 | 5.15 | Unknown 2 | 0.0000 | 101097 | 4923 |
| 6 | 5.95 | phosphate-p | 0.2571 | 19375 | 1509 |
| 7 | 6.75 | sulfate | 63.5253 | 11953448 | 827526 |



# Sample Analysis Report

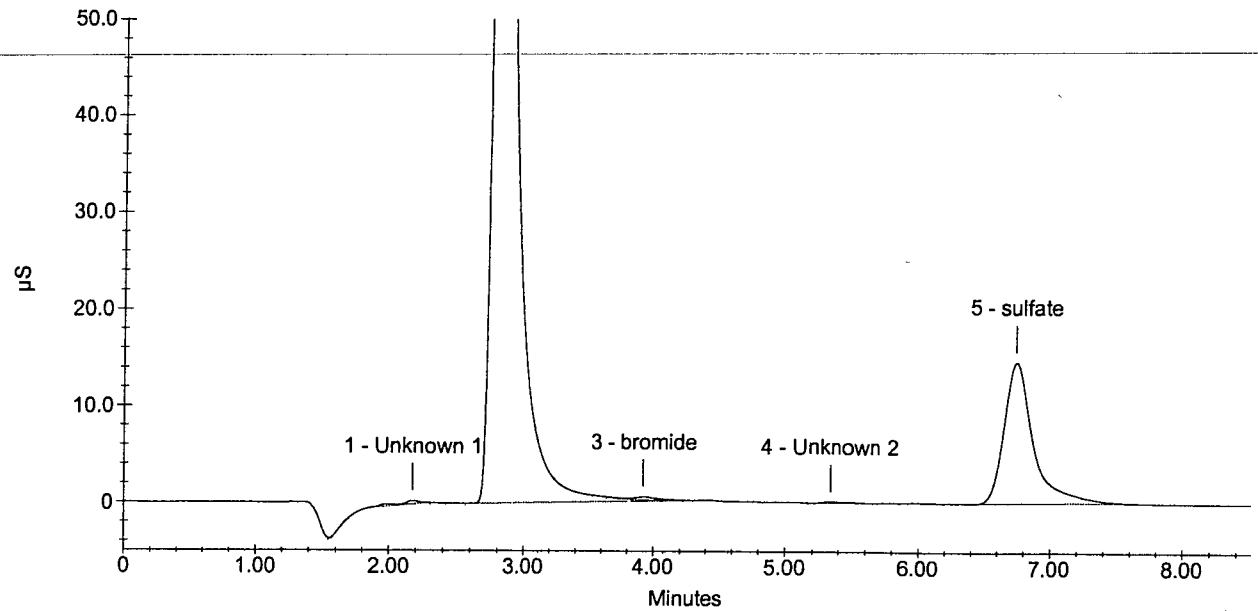
Sample Name : AZ05388W10 DF10
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_031.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 16:34:38
System Operator : mm
Injection Number : 31
Multiplier : 10.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 2.17 | Unknown 1 | 0.0000 | 36915 | 3521 |
| 2 | 2.80 | chloride | 362.2814 | 20387430 | 2789484 |
| 3 | 3.92 | bromide | 4.0379 | 40021 | 3304 |
| 4 | 5.33 | Unknown 2 | 0.0000 | 13131 | 978 |
| 5 | 6.73 | sulfate | 67.0570 | 2248932 | 146087 |

AZ05388W10 DF10




*APPL, Inc.*



Current Date : 10/22/14
Current Time : 16:45:45

# Wet Lab Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright

Project: 749435 Red Hill TO 0068

***Sample ID: RHMW07-GW-01FD***

Sample Collection Date: 10/20/14

**APPL ID: AZ05389**

ARF: 74672

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 0.055 J | 0.10 | 0.100 | 0.028 | mg/L | 1 | 11/05/14 | 11/05/14 |
| EPA 9056 | SULFATE | 64.2 | 2.00 | 0.396 | 0.180 | mg/L | 2 | 10/22/14 | 10/22/14 |
| SM 2320B | TOTAL ALKALINITY AS CACO3 | 184 | 2.0 | 1.70 | 0.85 | mg/L | 1 | 11/03/14 | 11/03/14 |

J = Estimated value.

*Printed: 11/07/14 9:38:21 AM*

*APPL-F1-SC-NoMC-REG MDLs*

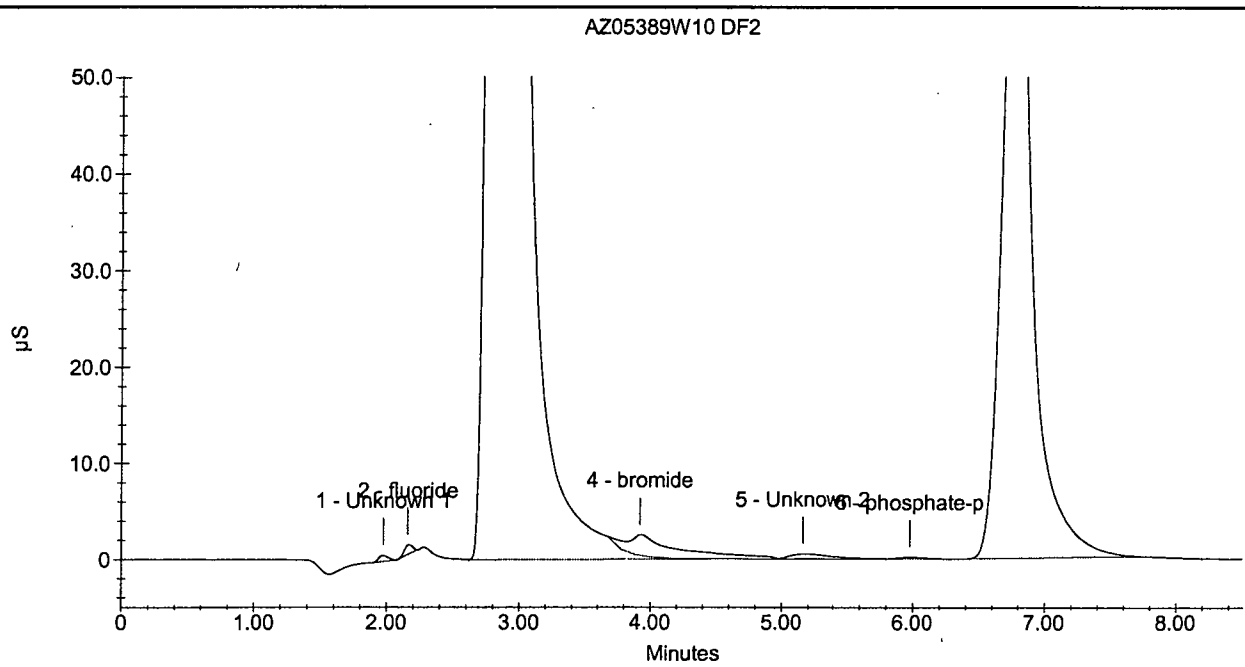
# Sample Analysis Report

Sample Name : AZ05389W10 DF2
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_008.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 11:43:20
System Operator : mm
Injection Number : 8
Multiplier : 2.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | Unknown 1 | 0.0000 | 30425 | 6364 |
| 2 | 2.16 | fluoride | 0.2419 | 40248 | 9699 |
| 3 | 2.85 | chloride | 407.8198 | 117755685 | 14561144 |
| 4 | 3.92 | bromide | 5.5172 | 579901 | 21552 |
| 5 | 5.16 | Unknown 2 | 0.0000 | 114967 | 5167 |
| 6 | 5.97 | phosphate-p | 0.2869 | 25677 | 1809 |
| 7 | 6.76 | sulfate | 64.2232 | 12088592 | 836691 |



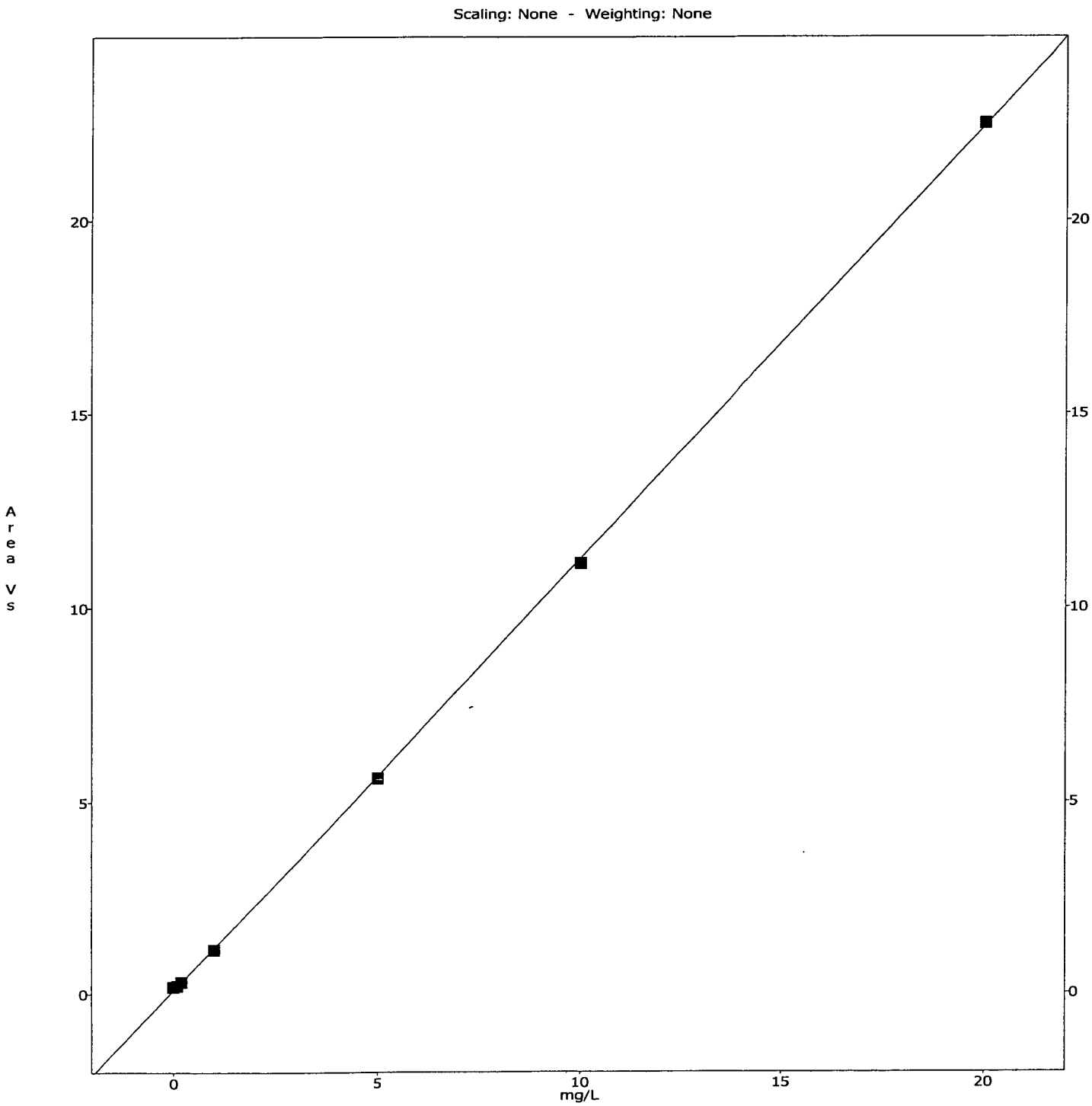
# INORGANIC ANALYSIS
## Calibration Data

APPL, INC.

# TOTOXN

| Lvl | Area | mg/L | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Replic STD | Replic % RSD | Residual 1st Poly |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22500902 | 20.0 | 22500902 | | | | | 0.0 | 0.0 | -0.3 |
| 2 | 11133735 | 10.0 | 11133735 | | | | | 0.0 | 0.0 | 1.1 |
| 3 | 5613850 | 5.0 | 5613850 | | | | | 0.0 | 0.0 | 0.9 |
| 4 | 1163898 | 1.0 | 1163898 | | | | | 0.0 | 0.0 | 2.9 |
| 5 | 313312 | 0.2 | 313312 | | | | | 0.0 | 0.0 | -4.9 |
| 6 | 207821 | 0.1 | 207821 | | | | | 0.0 | 0.0 | -15.4 |
| 7 | 182182 | 0.0 | 182182 | | | | | 0.0 | 0.0 | |

1st Order Poly
Conc = 8.949e-007 Area - 7.054e-002
r = 1.0000




Printed: Wednesday, November 05, 2014 - 03:07 PM

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74672 SDG: 74672
Initial Calibration Source: CPI
Continuing Calibration Source: O2SI
Analysis Date: 11/05/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 14:41 | %R(1) | True ICV | Found 14:44 | %R(1) | True CCV1 | Found 15:00 | %R(1) | |
| TOXN | 5 | 4.92496 | 98.5 | 5 | 4.89567 | 97.9 | 5 | 4.91904 | 98.4 | |

(1) Control Limits: 90-110 ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74672 SDG: 74672

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CCB 11/05/14 14:42 | C | ICB 11/05/14 14:45 | C | CCB 11/05/14 15:02 | C | | C | | C | |
| TOXN | .100 | U | .100 | U | .100 | U | | | | | |

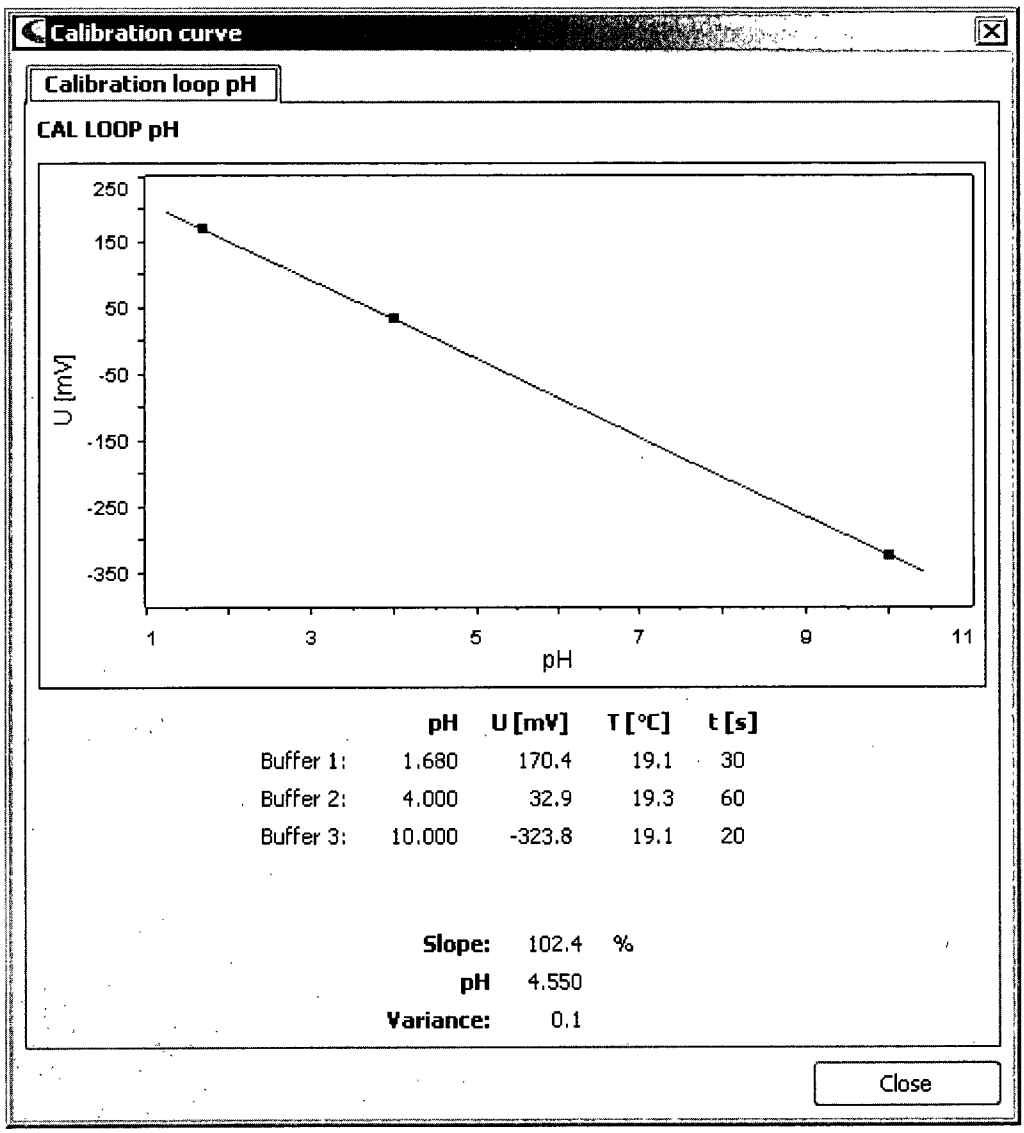
OPERATOR: Aileen
ACQ. TIME: Nov 5, 2014 14:29:17
DATA FILENAME: I:\LACHAT\OMNION\141105NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\141105NA.TRA

TRAY DESCRIPTION:
Created: Nov 5, 2014 13:05:03
Modified: Nov 5, 2014 14:29:48
NO3/TOTOXN 141105NA
DATA DESCRIPTION:
Created: Nov 5, 2014 14:29:17
Modified: Nov 5, 2014 14:29:17

Multi-Channel Table
Type: DQM
Channel Range: 1 to 8 -- Cup Range: 1 to 50

| Cup | Sample ID | Sample Type | Sampling Time | # of Reps | TOTOXN (mg/L) |
|---|---|---|---|---|---|
| 6 | CCB | Blank | 14:42:55 | 1 | -0.0080 |
| 6 | ICB | Blank | 14:45:56 | 1 | -0.0061 |
| 6 | CCB | Blank | 15:02:28 | 1 | -0.0082 |
| 7 | ICV | RelChkStd | 14:44:26 | 1 | 4.8957 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -2.0864 |
| 15 | CCV | RelChkStd | 14:41:24 | 1 | 4.9250 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -1.5006 |
| 15 | CCV | RelChkStd | 15:00:57 | 1 | 4.9190 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -1.6191 |

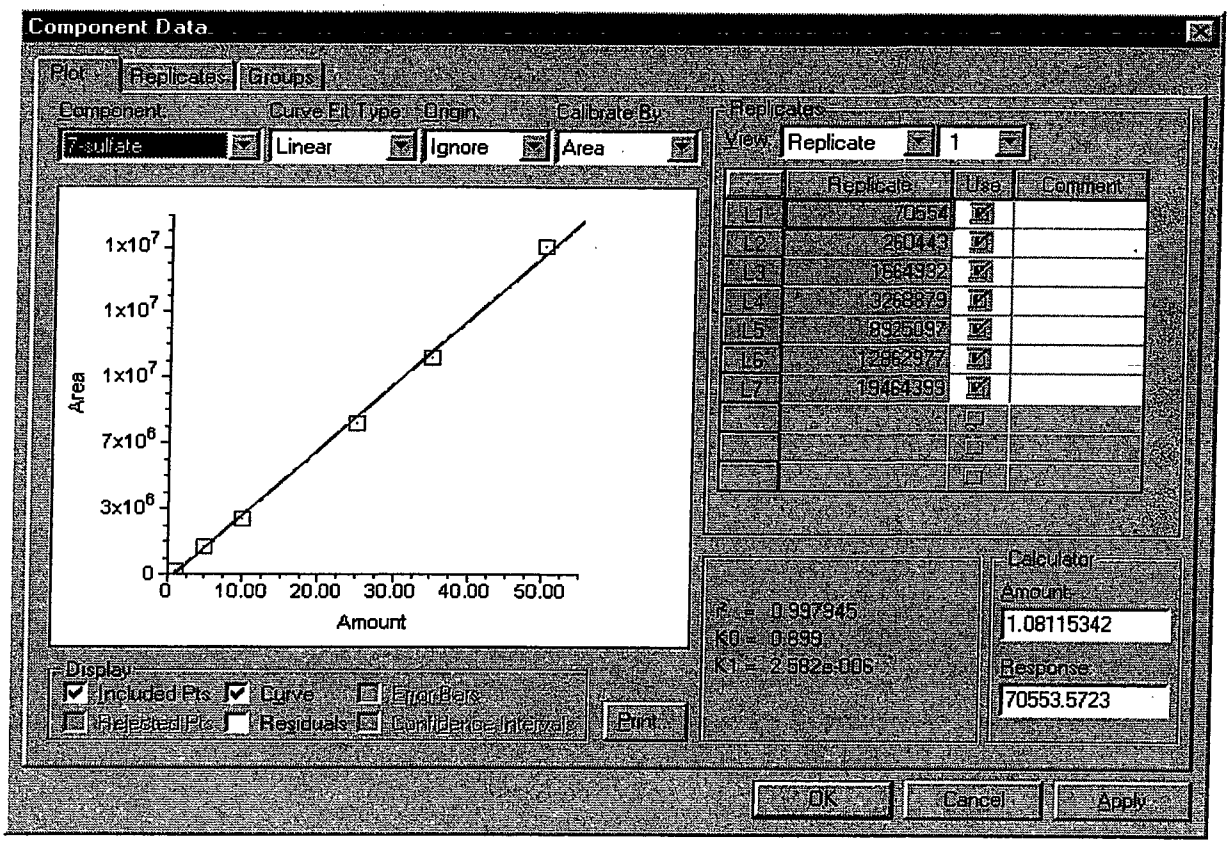
11/3/14 Tiamo Calibration Curve




| | pH | U [mV] | T [°C] | t [s] |
|---|---|---|---|---|
| Buffer 1: | 1.680 | 170.4 | 19.1 | 30 |
| Buffer 2: | 4.000 | 32.9 | 19.3 | 60 |
| Buffer 3: | 10.000 | -323.8 | 19.1 | 20 |

| | | |
|---|---|---|
| **Slope:** | 102.4 | % |
| **pH** | 4.550 | |
| **Variance:** | 0.1 | |

Close


Component Data
Plot
Replicates
Groups
Component
7-sulfate
Curve Fit Type
Linear
Origin
Ignore
Calibrate By
Area
Area
1x10^7
1x10^7
1x10^7
7x10^6
3x10^6
0
0
10.00
20.00
30.00
40.00
50.00
Amount
Replicates
View
Replicate
1
Replicate
Use
Comment
L1
70654
L2
260443
L3
1584932
L4
3268879
L5
8925097
L6
12562977
L7
19464399
r² = 0.997945
K0 = 0.899
K1 = 2.582e-006
Calculator
Amount
1.08115342
Response
70553.5723
Display
Included Pts
Curve
Error Bars
Rejected Pts
Residuals
Confidence Intervals
Print
OK
Cancel
Apply

INORGANIC ANALYSES
AUTO CALIBRATION

Analytical Method: 300/9056A

Lab Name: APPL, Inc.

Instrument ID: Dionex

Autocal ID: 140916a

Concentration Units (mg/L or mg/kg): mg/L

| Analyte | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| | Autocal 13:01 | Autocal 13:12 | Autocal 13:23 | Autocal 13:35 | Autocal 13:46 | Autocal 13:57 | Autocal 14:08 |
| Bromide | 16482 | 110811 | 530269 | 1040423 | 2811782 | 3853149 | 5758749 |
| Chloride | 105181 | 469930 | 2266776 | 4619999 | 13083991 | 19156002 | 29150289 |
| Fluoride | ND | 65241 | 295885 | 665047 | 1822387 | 2347304 | 3619418 |
| Nitrate-N | 42537 | 207636 | 1096945 | 2181530 | 5982651 | 8679959 | 13214287 |
| Nitrite-N | 9360 | 82285 | 427556 | 866240 | 2398640 | 3309962 | 4979067 |
| Phosphate-P | 37335 | 77961 | 423664 | 767089 | 2009102 | 2861951 | 4282289 |
| Sulfate | 70553 | 260443 | 1664932 | 3268878 | 8925096 | 12862977 | 19464398 |

Comments:

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Calibration
ARF No: SDG:
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 09/16/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True ICV | Found 14:20 | %R(1) | True | Found | %R(1) | True | Found | %R(1) | |
| bromide | 12.5 | 12.1534 | 97.2 | | | | | | | |
| chloride | 20 | 18.9785 | 94.9 | | | | | | | |
| fluoride | 2.5 | 2.39410 | 95.8 | | | | | | | |
| Nitrate(NO3)-N | 5 | 4.85672 | 97.1 | | | | | | | |
| Nitrite(NO2)-N | 3.04 | 2.92650 | 96.3 | | | | | | | |
| phosphate-p | 5 | 4.91730 | 98.3 | | | | | | | |
| sulfate | 20 | 19.3370 | 96.7 | | | | | | | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Calibration

ARF No.: SDG:

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ICB 09/16/14 14:31 | C | | C | | C | | C | | C | |
| bromide | .500 | U | | | | | | | | | |
| chloride | 1.000 | U | | | | | | | | | |
| fluoride | 1.000 | U | | | | | | | | | |
| Nitrate(NO3)-N | .200 | U | | | | | | | | | |
| Nitrite(NO2)-N | .200 | U | | | | | | | | | |
| phosphate-p | 1.000 | U | | | | | | | | | |
| sulfate | 1.000 | U | | | | | | | | | |

# Calibration Update Report

**Sample Name : CAL STD #1 9/16/14**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_012.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:01:17

Calibration Date : 9/16/14 13:12:12
System Operator : mm
Injection Number : 12

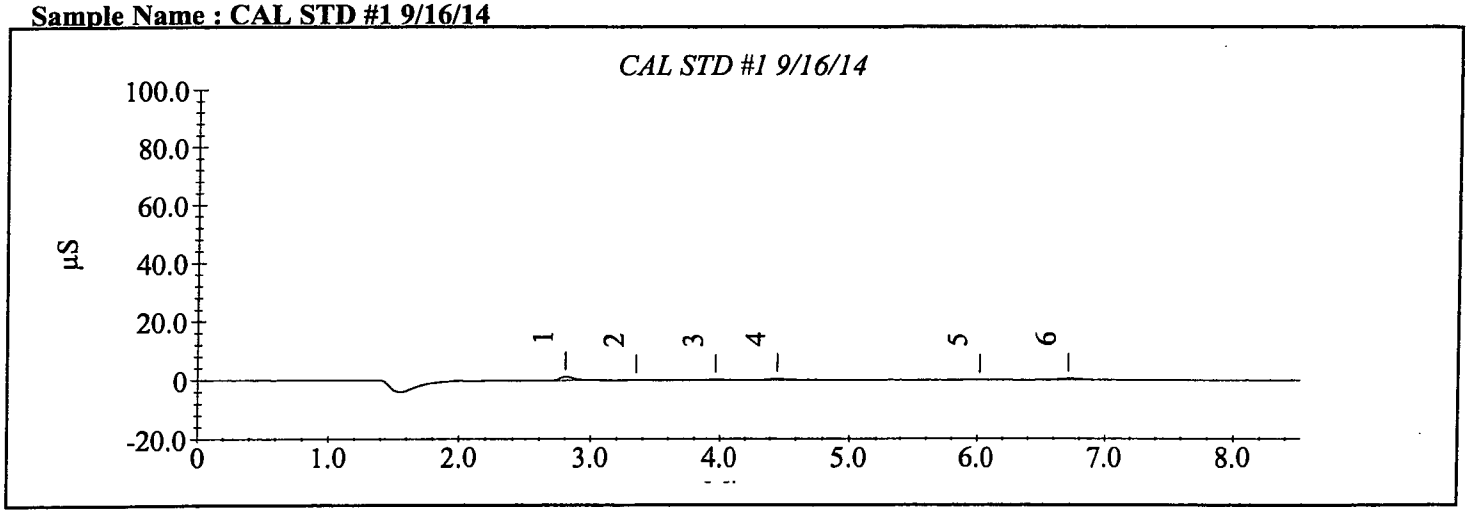
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 2.80 | chloride | 80668 | 105182 | 105182 |
| 2 | 3.35 | nitrite-n | 14520 | 9360 | 9360 |
| 3 | 3.96 | bromide | 17978 | 16482 | 16482 |
| 4 | 4.45 | nitrate-n | 38967 | 42537 | 42537 |
| 5 | 6.01 | phosphate-p | 17719 | 37336 | 37336 |
| 6 | 6.71 | sulfate | 39183 | 70554 | 70554 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 2.80 | chloride | 0.40 | 105182 | 12275 | - |
| 2 | 3.35 | nitrite-n | 0.04 | 9360 | 1262 | - |
| 3 | 3.96 | bromide | 0.20 | 16482 | 1928 | - |
| 4 | 4.45 | nitrate-n | 0.08 | 42537 | 4453 | - |
| 5 | 6.01 | phosphate-p | 0.08 | 37336 | 1580 | - |
| 6 | 6.71 | sulfate | 0.40 | 70554 | 4720 | - |

**Sample Name : CAL STD #1 9/16/14**



# Calibration Update Report

**Sample Name : CAL STD #2**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_013.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:12:31

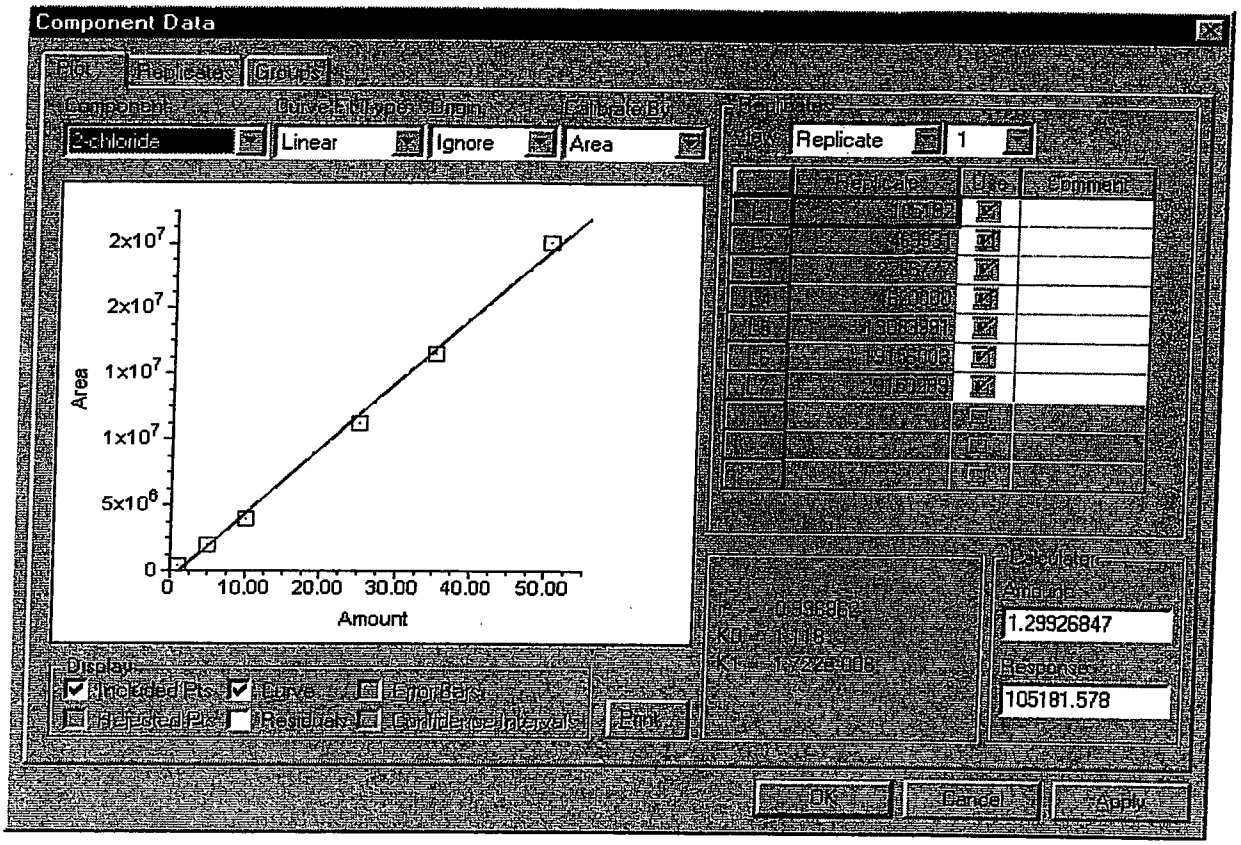
Calibration Date : 9/16/14 13:23:26
System Operator : mm
Injection Number : 13

Peak Information : All Components

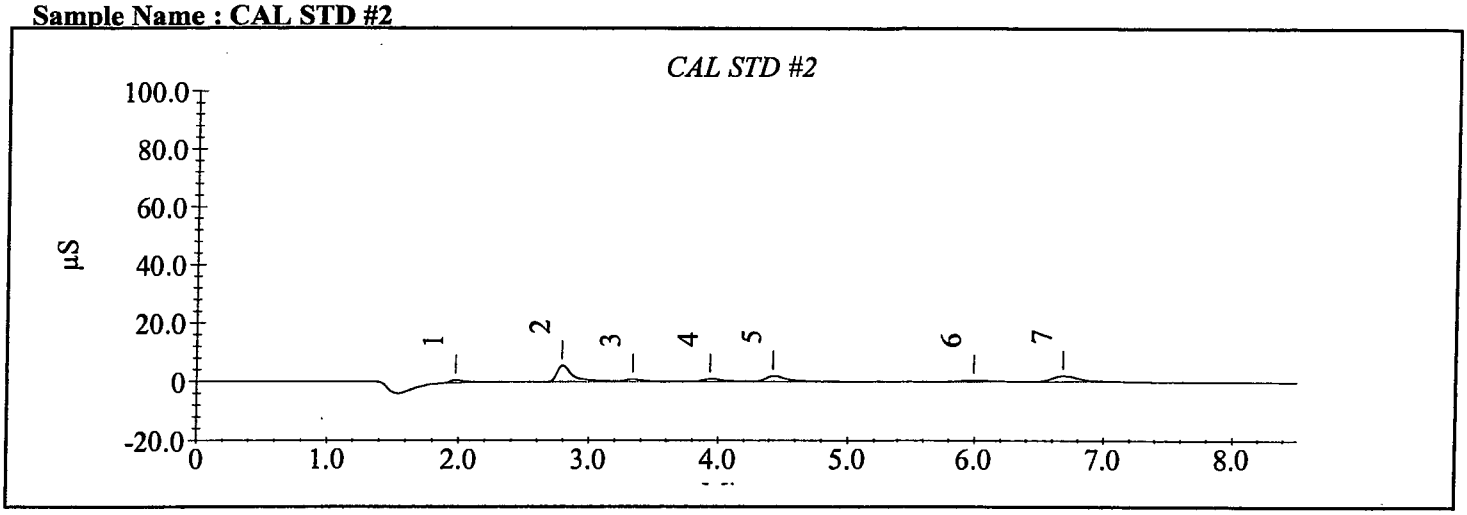
| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 59909 | 65241 | 65241 |
| 2 | 2.79 | chloride | 419030 | 469931 | 469931 |
| 3 | 3.33 | nitrite-n | 59671 | 82285 | 82285 |
| 4 | 3.93 | bromide | 89803 | 110811 | 110811 |
| 5 | 4.43 | nitrate-n | 201320 | 207637 | 207637 |
| 6 | 5.99 | phosphate-p | 67899 | 77961 | 77961 |
| 7 | 6.68 | sulfate | 264624 | 260443 | 260443 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.10 | 65241 | 8911 | |
| 2 | 2.79 | chloride | 1.00 | 469931 | 54508 | |
| 3 | 3.33 | nitrite-n | 0.10 | 82285 | 7802 | |
| 4 | 3.93 | bromide | 0.50 | 110811 | 9252 | |
| 5 | 4.43 | nitrate-n | 0.20 | 207637 | 18419 | |
| 6 | 5.99 | phosphate-p | 0.20 | 77961 | 5299 | |
| 7 | 6.68 | sulfate | 1.00 | 260443 | 19470 | |


Component Data
Plot
Replicates
Groups
Linear
Ignore
Area
Replicate
1
Comment
2x10^7
2x10^7
1x10^7
1x10^7
5x10^6
0
Area
0
10.00
20.00
30.00
40.00
50.00
Amount
Display
Included Pts.
Curve
Error Bars
Rejected Pts.
Residuals
Confidence Intervals
Calculated
Amount
1.29926847
Response
105181.578
OK
Cancel
Apply

**Sample Name : CAL STD #2**



# Calibration Update Report

**Sample Name : CAL STD #3**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_014.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:23:49

Calibration Date : 9/16/14 13:34:44
System Operator : mm
Injection Number : 14

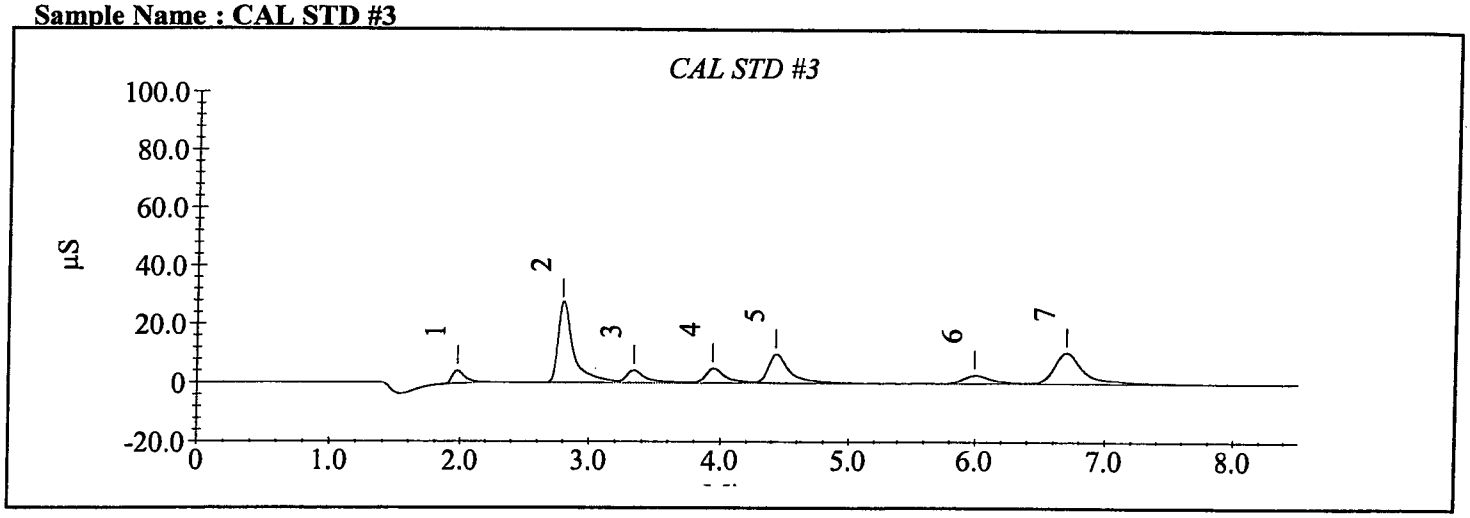
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 309108 | 295885 | 295885 |
| 2 | 2.79 | chloride | 2276954 | 2266777 | 2266777 |
| 3 | 3.33 | nitrite-n | 436460 | 427557 | 427557 |
| 4 | 3.93 | bromide | 523251 | 530269 | 530269 |
| 5 | 4.43 | nitrate-n | 1108037 | 1096946 | 1096946 |
| 6 | 5.99 | phosphate-p | 384060 | 423665 | 423665 |
| 7 | 6.69 | sulfate | 1603379 | 1664932 | 1664932 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.50 | 295885 | 42704 | |
| 2 | 2.79 | chloride | 5.00 | 2266777 | 269443 | |
| 3 | 3.33 | nitrite-n | 0.50 | 427557 | 41736 | |
| 4 | 3.93 | bromide | 2.50 | 530269 | 48100 | |
| 5 | 4.43 | nitrate-n | 1.00 | 1096946 | 96641 | |
| 6 | 5.99 | phosphate-p | 1.00 | 423665 | 27488 | |
| 7 | 6.69 | sulfate | 5.00 | 1664932 | 104763 | |

**Sample Name : CAL STD #3**



# Calibration Update Report

**Sample Name : CAL STD #4**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_015.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:35:06

Calibration Date : 9/16/14 13:46:01
System Operator : mm
Injection Number : 15

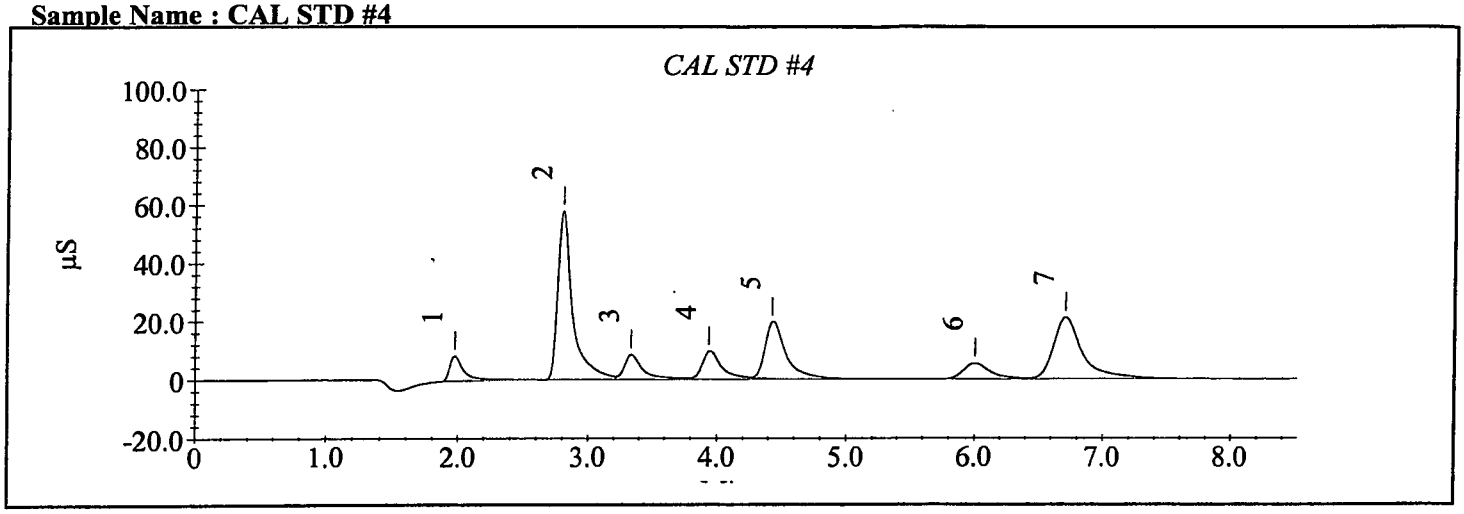
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 607569 | 665048 | 665048 |
| 2 | 2.80 | chloride | 4779793 | 4620000 | 4620000 |
| 3 | 3.33 | nitrite-n | 906480 | 866241 | 866241 |
| 4 | 3.93 | bromide | 1053126 | 1040424 | 1040424 |
| 5 | 4.43 | nitrate-n | 2237044 | 2181530 | 2181530 |
| 6 | 6.00 | phosphate-p | 769425 | 767090 | 767090 |
| 7 | 6.71 | sulfate | 3360946 | 3268879 | 3268879 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 1.00 | 665048 | 85001 | |
| 2 | 2.80 | chloride | 10.00 | 4620000 | 578025 | |
| 3 | 3.33 | nitrite-n | 1.00 | 866241 | 85227 | |
| 4 | 3.93 | bromide | 5.00 | 1040424 | 94837 | |
| 5 | 4.43 | nitrate-n | 2.00 | 2181530 | 194223 | |
| 6 | 6.00 | phosphate-p | 2.00 | 767090 | 53648 | |
| 7 | 6.71 | sulfate | 10.00 | 3268879 | 210711 | |

**Sample Name : CAL STD #4**



# Calibration Update Report

**Sample Name : CAL STD #5**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_016.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:46:24

Calibration Date : 9/16/14 13:57:19
System Operator : mm
Injection Number : 16

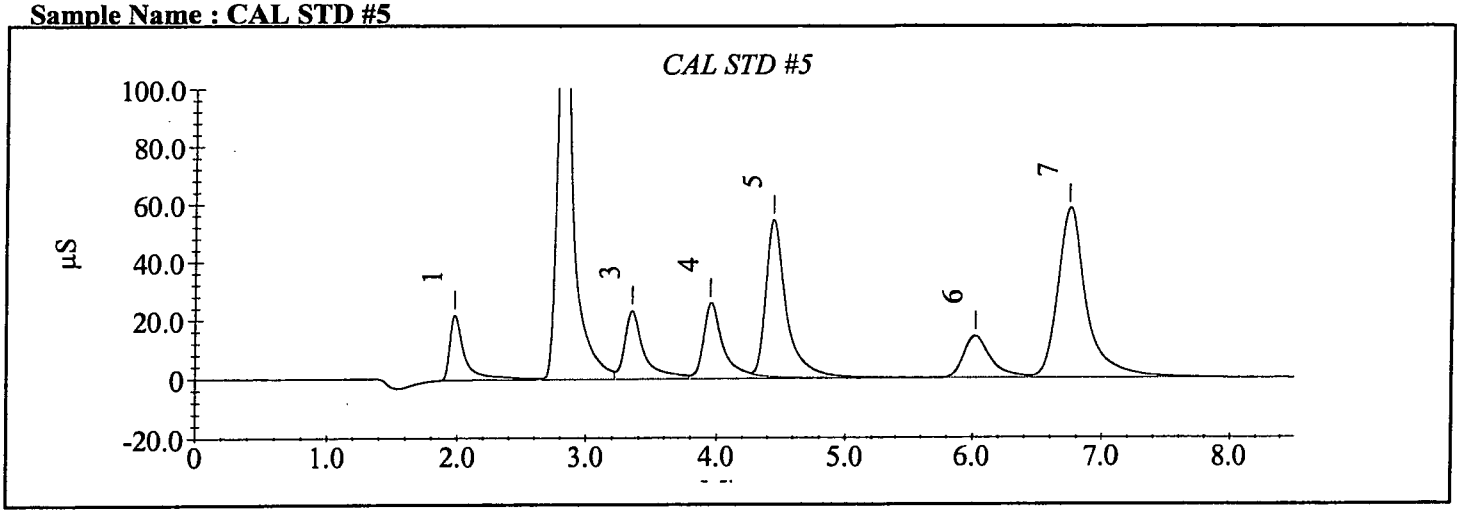
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 1882150 | 1822387 | 1822387 |
| 2 | 2.80 | chloride | 13726063 | 13083991 | 13083991 |
| 3 | 3.35 | nitrite-n | 2428096 | 2398640 | 2398640 |
| 4 | 3.95 | bromide | 2795303 | 2811783 | 2811783 |
| 5 | 4.44 | nitrate-n | 6075372 | 5982651 | 5982651 |
| 6 | 6.01 | phosphate-p | 2015049 | 2009102 | 2009102 |
| 7 | 6.73 | sulfate | 9158418 | 8925097 | 8925097 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.50 | 1822387 | 220513 | |
| 2 | 2.80 | chloride | 25.00 | 13083991 | 1634673 | |
| 3 | 3.35 | nitrite-n | 2.50 | 2398640 | 232992 | |
| 4 | 3.95 | bromide | 12.50 | 2811783 | 257207 | |
| 5 | 4.44 | nitrate-n | 5.00 | 5982651 | 539495 | |
| 6 | 6.01 | phosphate-p | 5.00 | 2009102 | 141469 | |
| 7 | 6.73 | sulfate | 25.00 | 8925097 | 579552 | |

**Sample Name : CAL STD #5**



# Calibration Update Report

**Sample Name : CAL STD #6**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_017.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:57:42

Calibration Date : 9/16/14 14:08:37
System Operator : mm
Injection Number : 17

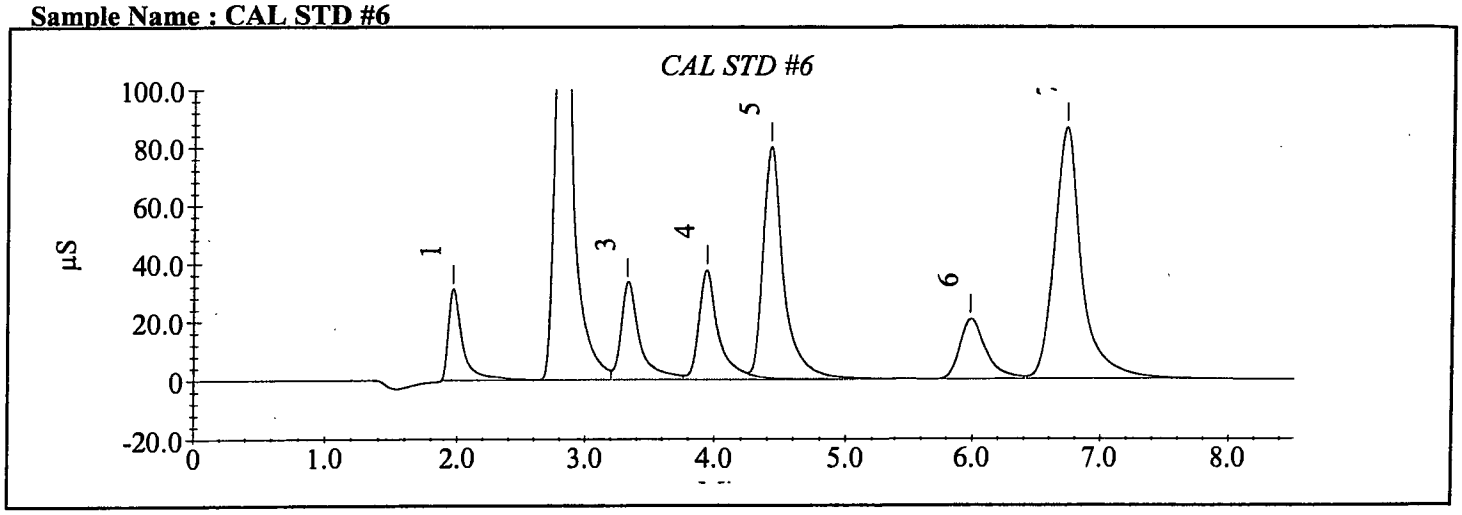
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2634975 | 2347305 | 2347305 |
| 2 | 2.80 | chloride | 20199844 | 19156003 | 19156003 |
| 3 | 3.32 | nitrite-n | 3487460 | 3309962 | 3309962 |
| 4 | 3.93 | bromide | 3964452 | 3853149 | 3853149 |
| 5 | 4.41 | nitrate-n | 8962096 | 8679959 | 8679959 |
| 6 | 5.97 | phosphate-p | 2892007 | 2861951 | 2861951 |
| 7 | 6.72 | sulfate | 13323218 | 12862977 | 12862977 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 3.50 | 2347305 | 307863 | |
| 2 | 2.80 | chloride | 35.00 | 19156003 | 2543383 | |
| 3 | 3.32 | nitrite-n | 3.50 | 3309962 | 329466 | |
| 4 | 3.93 | bromide | 17.50 | 3853149 | 373363 | |
| 5 | 4.41 | nitrate-n | 7.00 | 8679959 | 793777 | |
| 6 | 5.97 | phosphate-p | 7.00 | 2861951 | 202999 | |
| 7 | 6.72 | sulfate | 35.00 | 12862977 | 864005 | |

**Sample Name : CAL STD #6**



# Calibration Update Report

**Sample Name : CAL STD #7**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_018.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 14:08:59

Calibration Date : 9/16/14 14:19:53
System Operator : mm
Injection Number : 18

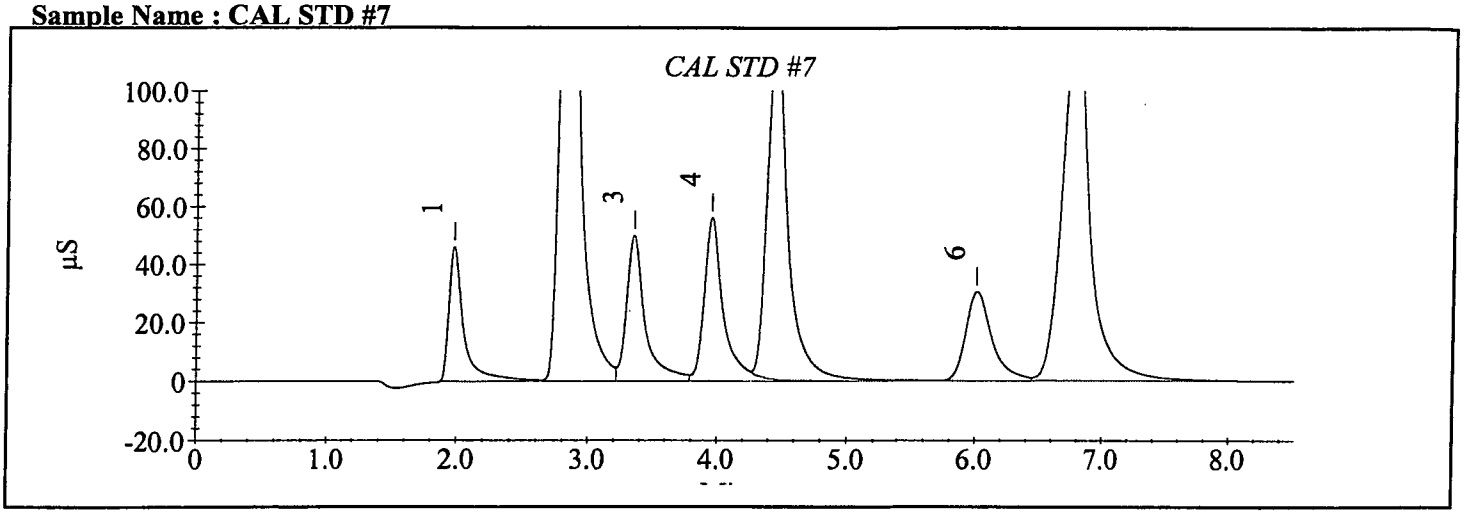
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 3720726 | 3619418 | 3619418 |
| 2 | 2.81 | chloride | 29858639 | 29150289 | 29150289 |
| 3 | 3.35 | nitrite-n | 4999120 | 4979068 | 4979068 |
| 4 | 3.95 | bromide | 5710221 | 5758749 | 5758749 |
| 5 | 4.43 | nitrate-n | 13261972 | 13214288 | 13214288 |
| 6 | 6.00 | phosphate-p | 4245709 | 4282289 | 4282289 |
| 7 | 6.76 | sulfate | 19824829 | 19464399 | 19464399 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 5.00 | 3619418 | 459676 | |
| 2 | 2.81 | chloride | 50.00 | 29150289 | 3850058 | |
| 3 | 3.35 | nitrite-n | 5.00 | 4979068 | 498763 | |
| 4 | 3.95 | bromide | 25.00 | 5758749 | 558971 | |
| 5 | 4.43 | nitrate-n | 10.00 | 13214288 | 1198703 | |
| 6 | 6.00 | phosphate-p | 10.00 | 4282289 | 303155 | |
| 7 | 6.76 | sulfate | 50.00 | 19464399 | 1318317 | |

**Sample Name : CAL STD #7**



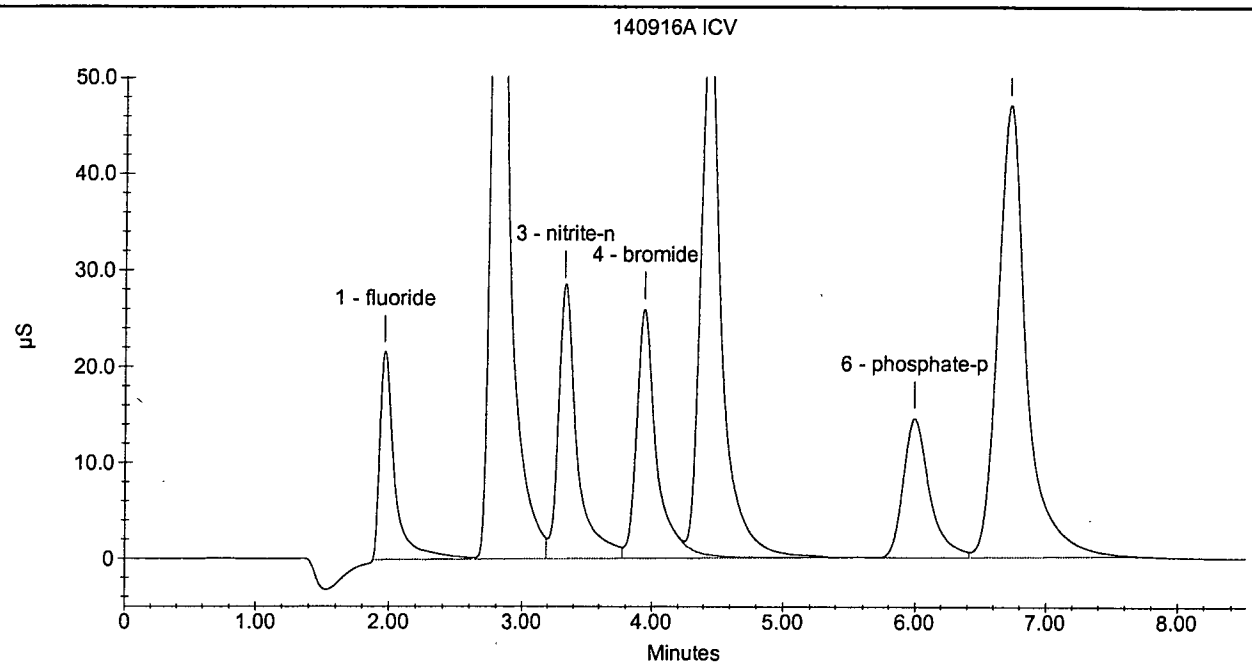
# Sample Analysis Report

Sample Name : 140916A ICV
Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_019.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 9/16/14 14:20:16
System Operator : mm
Injection Number : 19
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height | Limit Exceed |
|---|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2.3941 | 1681572 | 214873 | 2. |
| 2 | 2.79 | chloride | 18.9786 | 10371065 | 1320844 | 1 |
| 3 | 3.32 | nitrite-n | 2.9265 | 2837943 | 280321 | 2. |
| 4 | 3.93 | bromide | 12.1534 | 2733797 | 258190 | 1 |
| 5 | 4.41 | nitrate-n | 4.8567 | 6121479 | 548928 | 4. |
| 6 | 5.99 | phosphate-p | 4.9173 | 2047176 | 144494 | 4. |
| 7 | 6.71 | sulfate | 19.3371 | 7141046 | 468012 | 1 |



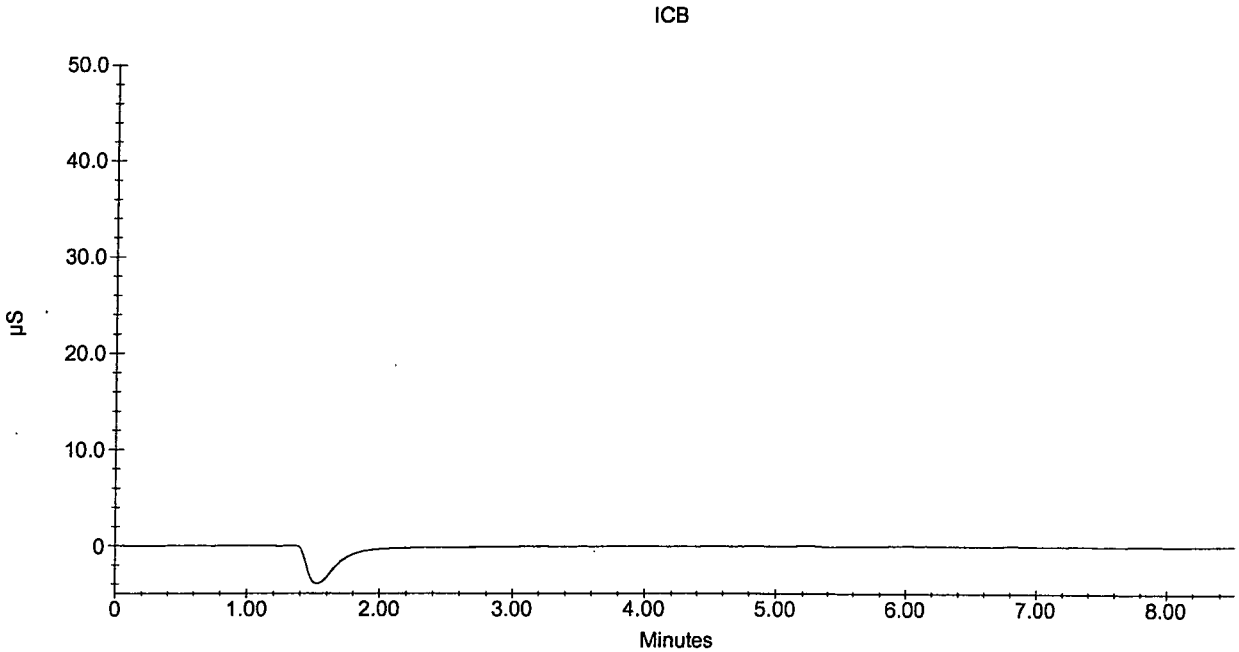
# Sample Analysis Report

Sample Name : ICB
Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916A_020.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 9/16/14 14:31:36
System Operator : mm
Injection Number : 20
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height | Limit Exceed |
|---|---|---|---|---|---|---|




*APPL, Inc.*



Current Date : 9/16/14
Current Time : 14:43:32

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74672 SDG: 74672
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 10/22/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 8:18 | %R(1) | True CCV1 | Found 12:05 | %R(1) | True CCV1 | Found 13:57 | %R(1) | |
| chloride | 25 | 22.7571 | 91.0 | 25 | 24.0120 | 96.0 | 25 | 23.9258 | 95.7 | |
| sulfate | 25 | 22.8521 | 91.4 | 25 | 23.9119 | 95.6 | 25 | 23.8536 | 95.4 | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74672 SDG: 74672
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 10/22/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 16:01 | %R(1) | True CCV1 | Found 18:03 | %R(1) | True | Found | %R(1) | |
| chloride | 25 | 24.0234 | 96.1 | 25 | 24.1287 | 96.5 | | | | |
| sulfate | 25 | 24.0701 | 96.3 | 25 | 24.1029 | 96.4 | | | | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74672 SDG: 74672

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CCB 10/22/14 08:29 | C | CCB 10/22/14 12:17 | C | CCB 10/22/14 14:08 | C | CCB 10/22/14 16:12 | C | CCB 10/22/14 18:15 | C | |
| chloride | 1.000 | U | 1.000 | U | 1.000 | U | 1.000 | U | 1.0000 | U | |
| sulfate | 1.000 | U | 1.000 | U | 1.000 | U | 1.000 | U | 1.0000 | U | |

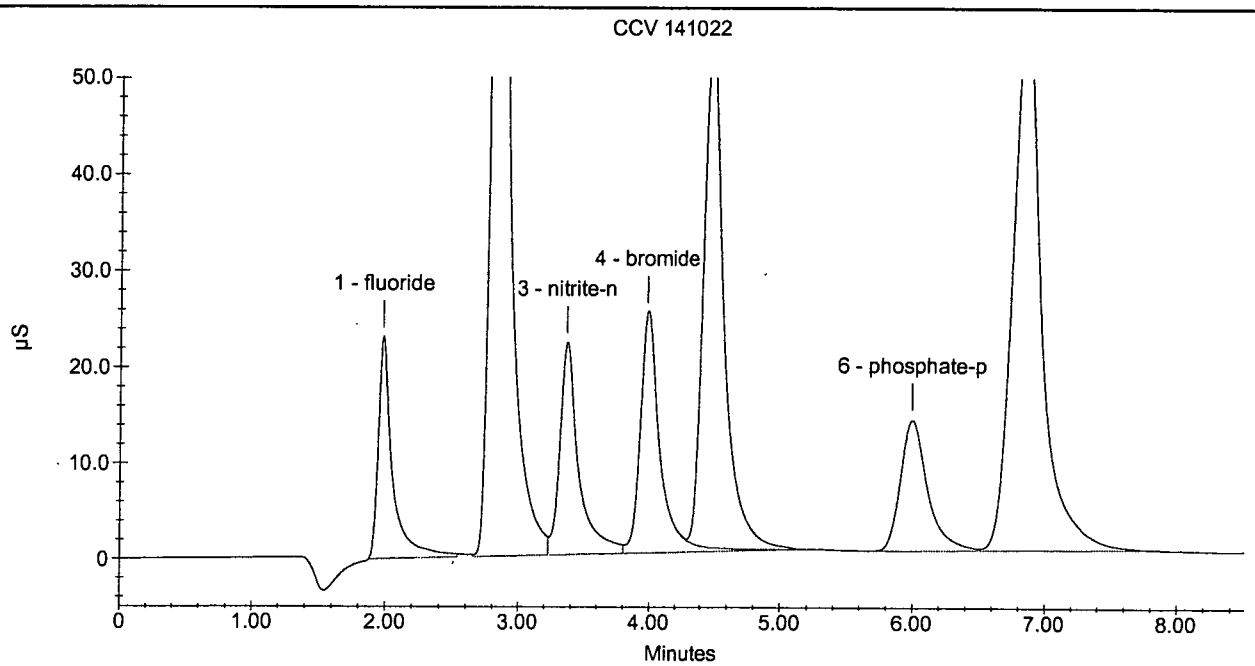
# Sample Analysis Report

Sample Name : CCV 141022
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_001.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 08:18:21
System Operator : mm
Injection Number : 1
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.4568 | 1726817 | 229816 |
| 2 | 2.81 | chloride | 22.7572 | 12565194 | 1657795 |
| 3 | 3.36 | nitrite-n | 2.2872 | 2202996 | 219771 |
| 4 | 3.97 | bromide | 11.7058 | 2631184 | 249071 |
| 5 | 4.47 | nitrate-n | 4.5501 | 5718893 | 534016 |
| 6 | 5.99 | phosphate-p | 4.6721 | 1943323 | 136066 |
| 7 | 6.83 | sulfate | 22.8522 | 8502427 | 563989 |




*APPL, Inc.*



Current Date : 10/22/14
Current Time : 08:29:39

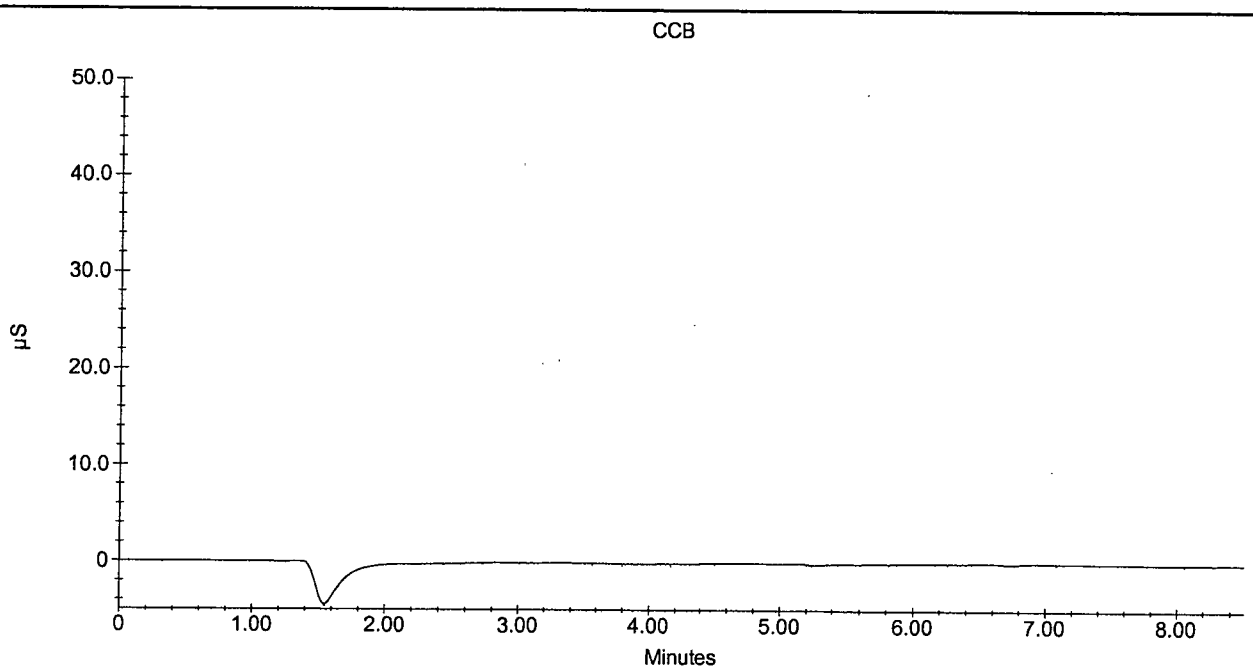
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022A_002.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 08:29:44
System Operator : mm
Injection Number : 2
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|




*APPL, Inc.*



Current Date : 10/23/14
Current Time : 11:35:31

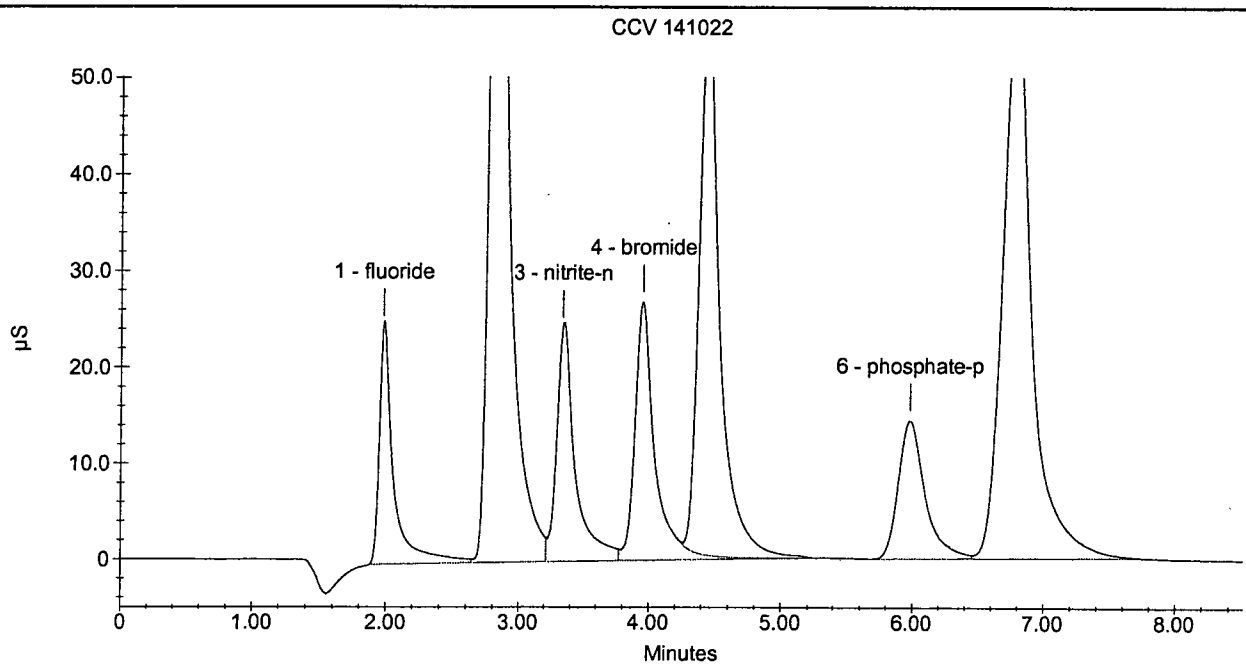
# Sample Analysis Report

Sample Name : CCV 141022
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_010.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 12:05:45
System Operator : mm
Injection Number : 10
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.6527 | 1868316 | 247208 |
| 2 | 2.80 | chloride | 24.0121 | 13293891 | 1751132 |
| 3 | 3.33 | nitrite-n | 2.5172 | 2431380 | 243005 |
| 4 | 3.95 | bromide | 12.4812 | 2808945 | 268313 |
| 5 | 4.43 | nitrate-n | 4.8532 | 6116809 | 570369 |
| 6 | 5.97 | phosphate-p | 4.9031 | 2041167 | 144044 |
| 7 | 6.76 | sulfate | 23.9120 | 8912883 | 587664 |




*APPL, Inc.*



Current Date : 10/22/14
Current Time : 12:16:58

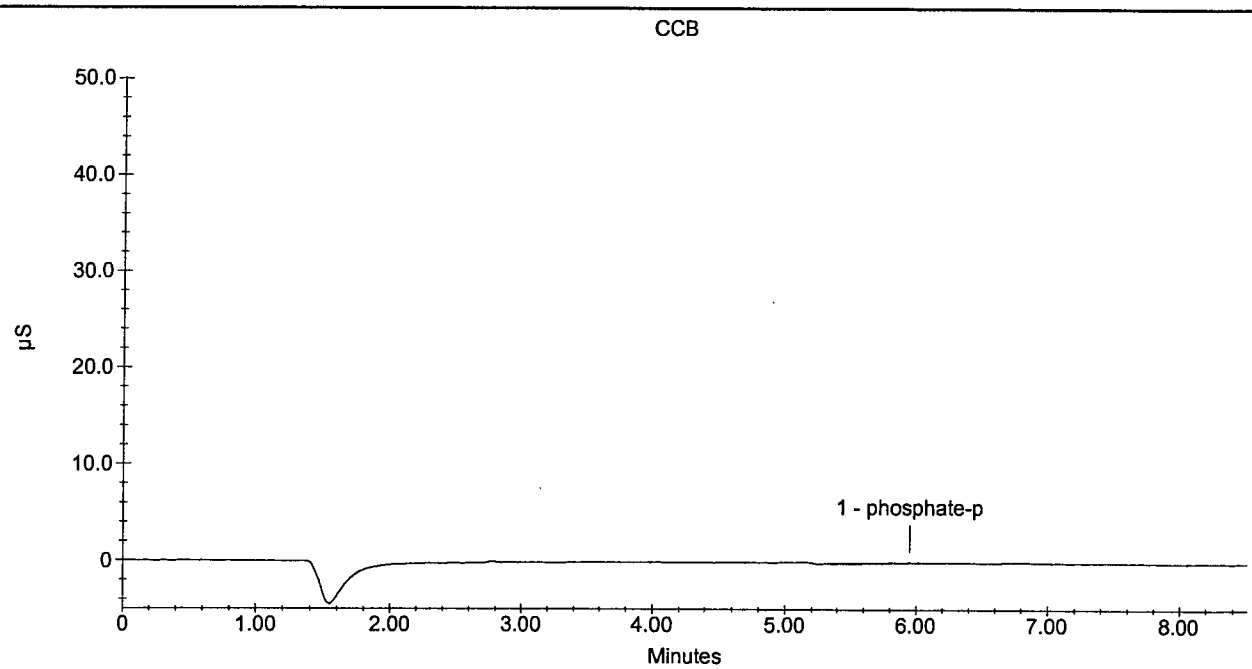
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_011.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 12:17:02
System Operator : mm
Injection Number : 11
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 5.95 | phosphate-p | 0.1509 | 28831 | 669 |




*APPL, Inc.*



Current Date : 10/22/14
Current Time : 12:28:02

# Sample Analysis Report

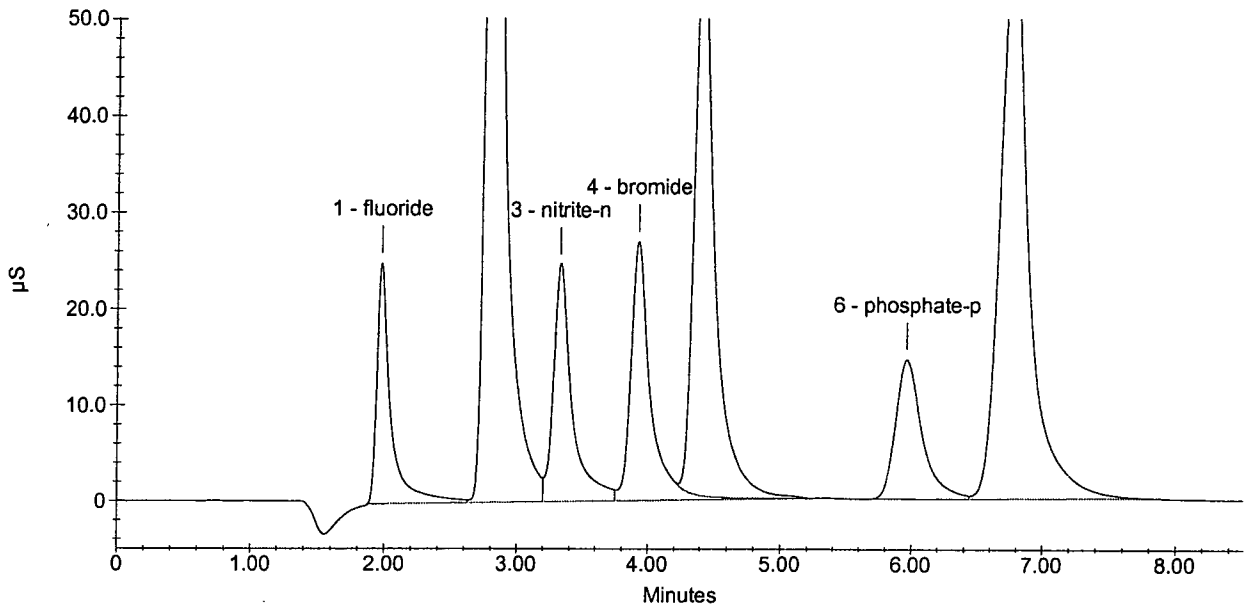
Sample Name : CCV 141022
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_028.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 16:01:01
System Operator : mm
Injection Number : 28
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.5952 | 1826754 | 250007 |
| 2 | 2.79 | chloride | 24.0234 | 13300485 | 1745270 |
| 3 | 3.32 | nitrite-n | 2.4844 | 2398797 | 245814 |
| 4 | 3.92 | bromide | 12.4062 | 2791748 | 268920 |
| 5 | 4.40 | nitrate-n | 4.8588 | 6124160 | 572763 |
| 6 | 5.96 | phosphate-p | 4.9198 | 2048235 | 144675 |
| 7 | 6.75 | sulfate | 24.0702 | 8974159 | 591796 |

CCV-141022



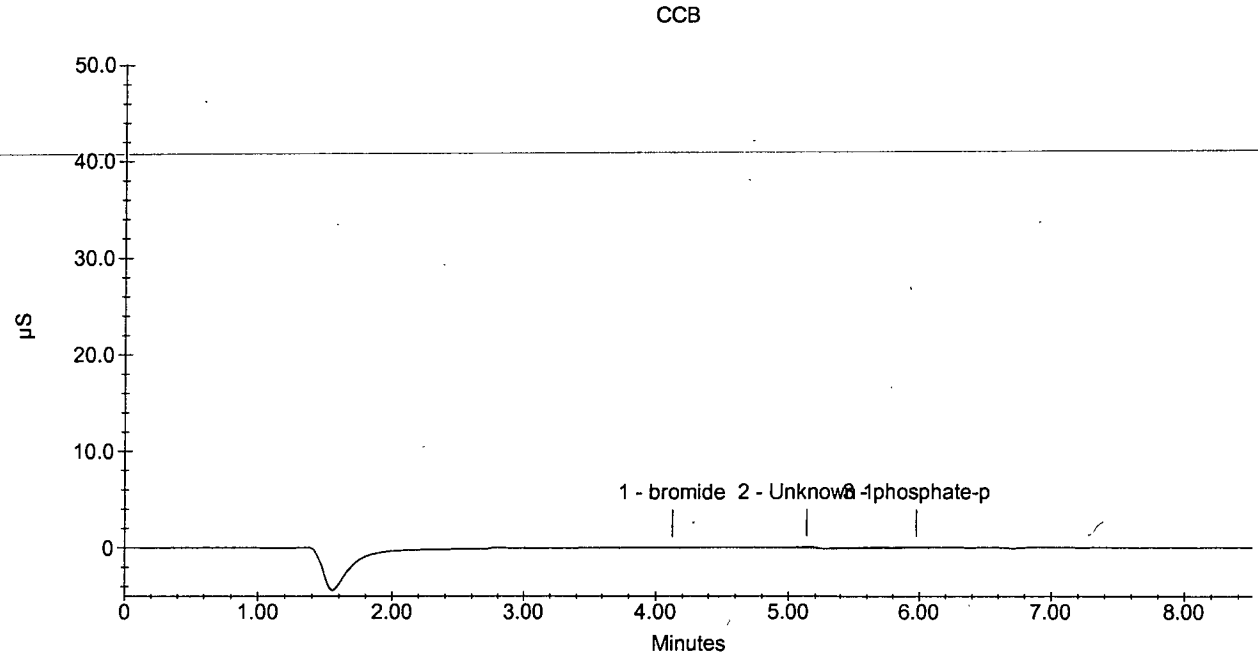
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_029.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 16:12:19
System Operator : mm
Injection Number : 29
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 4.12 | bromide | 0.3093 | 18359 | 364 |
| 2 | 5.13 | Unknown 1 | 0.0000 | 11810 | 1274 |
| 3 | 5.97 | phosphate-p | 0.1661 | 35287 | 709 |



# Sample Analysis Report

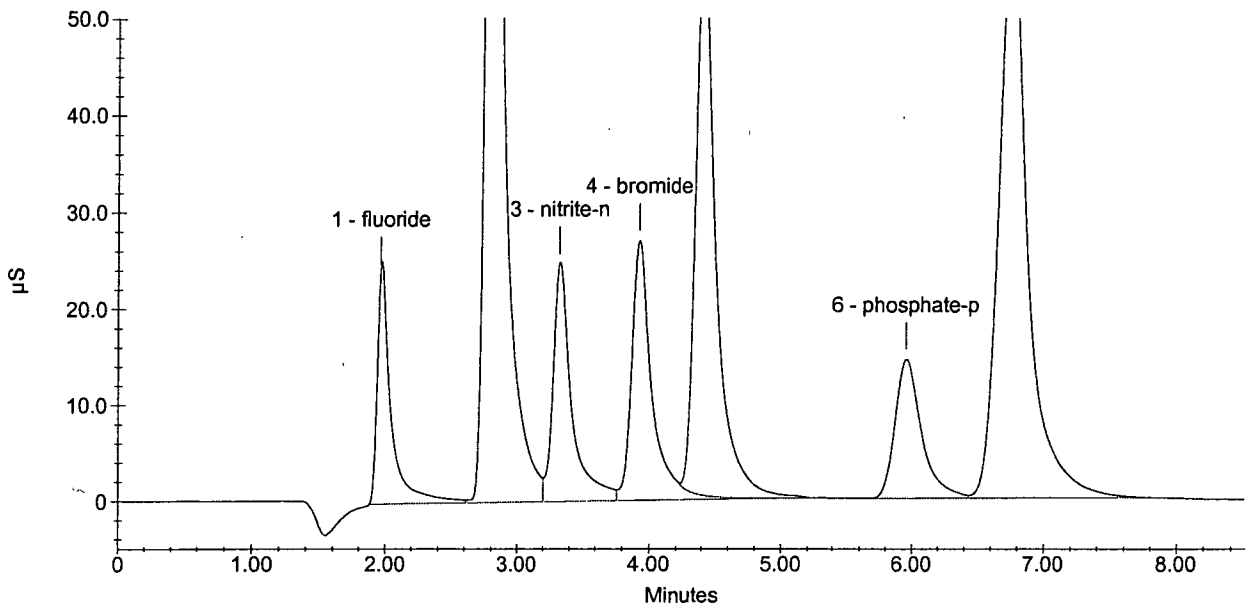
Sample Name : CCV 141022
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_039.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 18:03:54
System Operator : mm
Injection Number : 39
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2.5934 | 1825493 | 238685 |
| 2 | 2.79 | chloride | 24.1288 | 13361650 | 1769878 |
| 3 | 3.32 | nitrite-n | 2.4981 | 2412408 | 246753 |
| 4 | 3.92 | bromide | 12.4054 | 2791569 | 269362 |
| 5 | 4.40 | nitrate-n | 4.8765 | 6147448 | 574893 |
| 6 | 5.95 | phosphate-p | 4.9038 | 2041467 | 144158 |
| 7 | 6.73 | sulfate | 24.1029 | 8986838 | 592408 |

CCV 141022



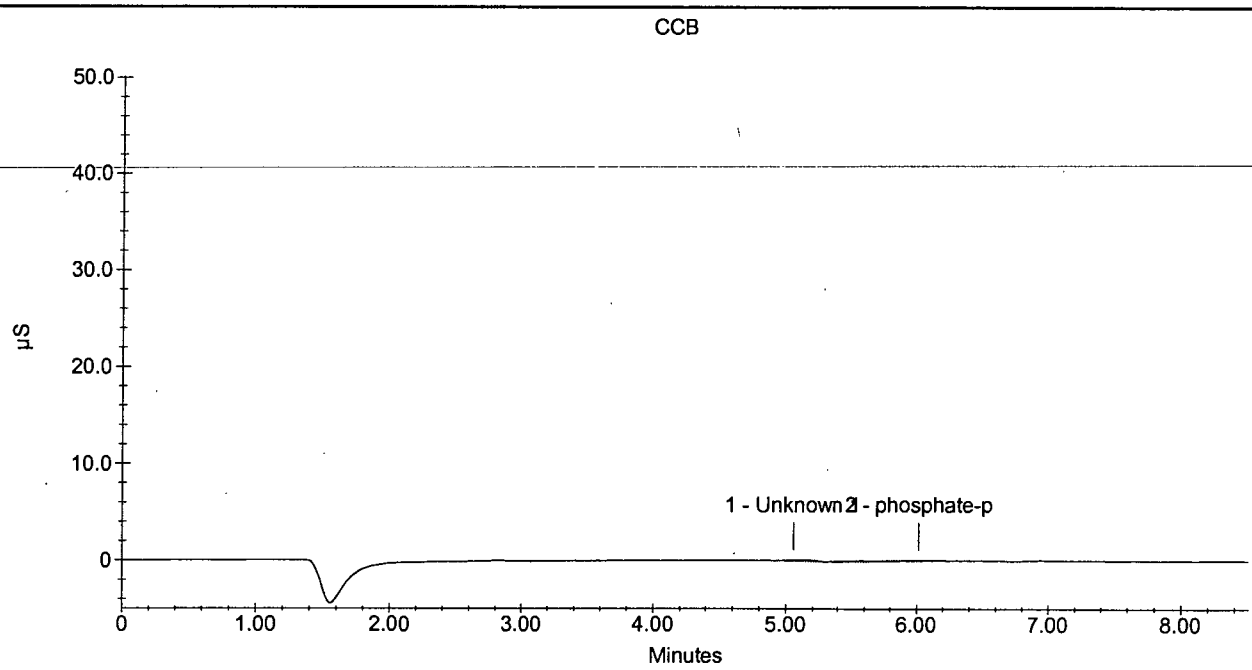
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_040.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 18:15:10
System Operator : mm
Injection Number : 40
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 5.05 | Unknown 1 | 0.0000 | 18389 | 1011 |
| 2 | 6.01 | phosphate-p | 0.1941 | 47125 | 922 |



# INORGANICS

## Raw Data

APPL, INC.

# WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| SM 2320B | TOTAL ALKALINITY | 1.70 U | 2.0 | 1.70 | 0.85 | mg/L | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |
| EPA 353.2 | NITRATE-NITRITE- | 0.100 U | 0.10 | 0.100 | 0.028 | mg/L | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| EPA 9056 | SULFATE | 0.198 U | 1.00 | 0.198 | 0.090 | mg/L | 10/22/14 | 10/22/14 | #9056D-141022A-AZ05388 |
| EPA 9056 | CHLORIDE | 0.200 U | 1.00 | 0.200 | 0.080 | mg/L | 10/22/14 | 10/22/14 | #9056D-141022B-AZ05388 |

*Wetlab SC-Blank-REG MDLs*
*Printed: 11/19/14 10:44:17 AM*

# Laboratory Control Spike Recovery

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level mg/L | SPK Result mg/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 9056 | CHLORIDE | 20.0 | 19.0 | 95.0 | 80-120 | 10/22/14 | 10/22/14 | #9056D-141022B-AZ05388 |
| EPA 9056 | SULFATE | 20.0 | 18.3 | 91.5 | 80-120 | 10/22/14 | 10/22/14 | #9056D-141022A-AZ05388 |

Comments: _____

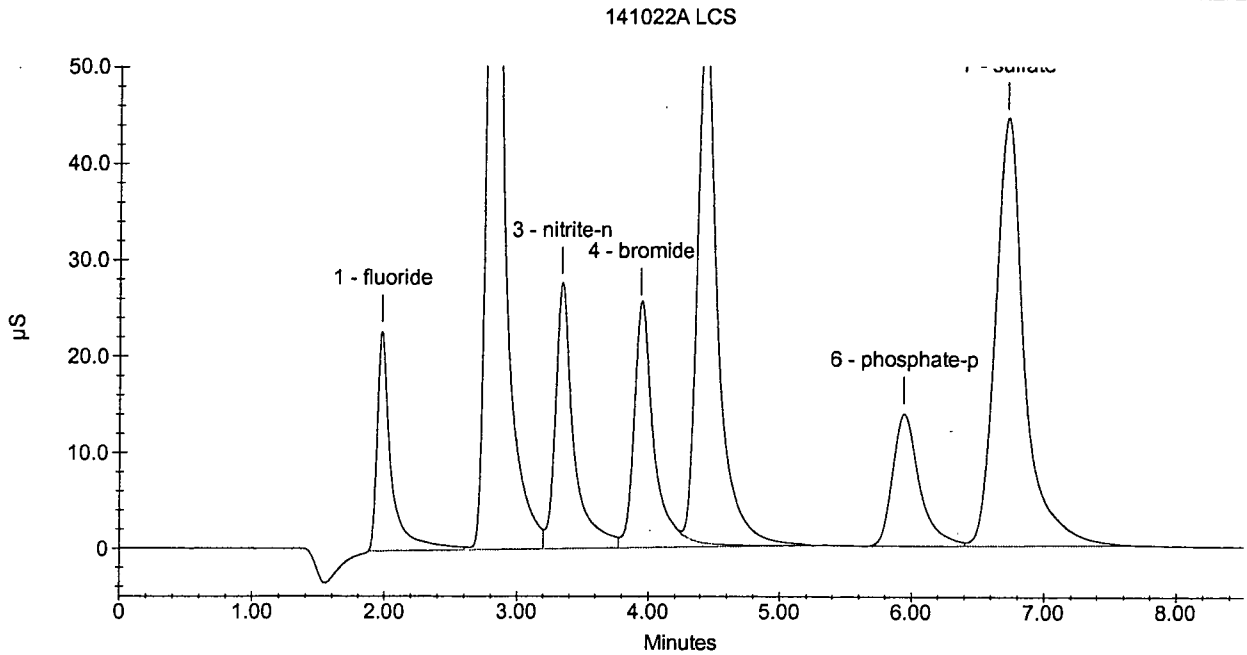
# Sample Analysis Report

Sample Name : 141022A LCS
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_003.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 08:40:49
System Operator : mm
Injection Number : 3
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.4045 | 1689047 | 227238 |
| 2 | 2.80 | chloride | 18.2007 | 9919396 | 1332175 |
| 3 | 3.33 | nitrite-n | 2.7588 | 2671395 | 274014 |
| 4 | 3.93 | bromide | 11.8453 | 2663169 | 251338 |
| 5 | 4.41 | nitrate-n | 4.6599 | 5863029 | 539429 |
| 6 | 5.93 | phosphate-p | 4.6849 | 1948756 | 137086 |
| 7 | 6.71 | sulfate | 18.3083 | 6742612 | 442222 |




Algorithm Check
(6742612) $2.582 \times 10^{-6}$ + 0.899 = 18.31 ✓
MM 10/28/14

*APPL, Inc.*



Current Date : 10/22/14
Current Time : 08:52:01

# Sample Analysis Report

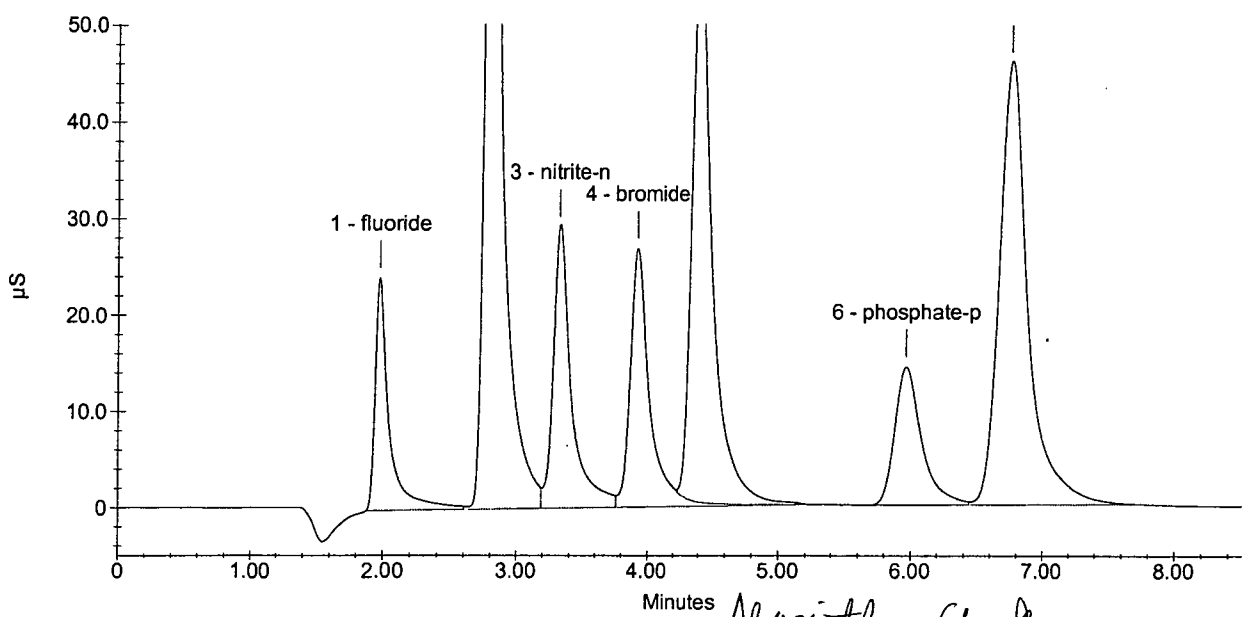
Sample Name : 141022B LCS
Data File Name : I:\DIONEX\D1ANIONS\DATA\141022A\141022a_019.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 10/22/14 14:20:04
System Operator : mm
Injection Number : 19
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.4993 | 1757509 | 241081 |
| 2 | 2.79 | chloride | 19.0405 | 10407017 | 1380361 |
| 3 | 3.32 | nitrite-n | 2.8987 | 2810300 | 291469 |
| 4 | 3.92 | bromide | 12.3354 | 2775519 | 267877 |
| 5 | 4.40 | nitrate-n | 4.8682 | 6136490 | 575392 |
| 6 | 5.96 | phosphate-p | 4.8627 | 2024055 | 143389 |
| 7 | 6.75 | sulfate | 18.9071 | 6974524 | 457402 |

141022B LCS




Algorithm Check
10407017 (1.722x10^-6) + 1.118 = 19.04 ✓
MM 11/17/14

APPL, Inc.



Current Date : 10/22/14
Current Time : 14:31:16

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 4.83 | 4.76 | 96.6 | 95.2 | 1.5 | 20 | 90-110 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| SM 2320B | TOTAL ALKALINITY AS CA | 250 | 253 | 254 | 101 | 102 | 0.39 | 20 | 90-110 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |

Comments: _____

# Metrohm 814/809 Titrando Data

| Sample ID | Analysis Date/Time | Method | Titration Volume (to 8.3) | Titration Volume (total) | OH | CO3 | HCO3 | Total Alk | Unit | Sample Vol | N | Batch | Initials |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AZ05389W10 | 2014-11-03 13:06:51 UTC-8 | Alkalinity | 0.000 | 4.330 | 0.00 | 0.00 | 183.59 | 183.59 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| AZ05388W10 | 2014-11-03 12:57:47 UTC-8 | Alkalinity | 0.000 | 4.182 | 0.00 | 0.00 | 177.32 | 177.32 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| 141103a lcsd | 2014-11-03 12:42:19 UTC-8 | Alkalinity | 0.248 | 5.998 | 0.00 | 21.03 | 233.28 | 254.32 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| 141103a lcs | 2014-11-03 12:31:00 UTC-8 | Alkalinity | 0.246 | 5.960 | 0.00 | 20.86 | 231.84 | 252.70 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| 141103a blk | 2014-11-03 12:13:54 UTC-8 | Alkalinity | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | mg/L | 25 mL | 0.0212 | a141103 | bb |

OPERATOR: Aileen
ACQ. TIME: Nov 5, 2014 14:29:17
DATA FILENAME: I:\LACHAT\OMNION\141105NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\141105NA.TRA

TRAY DESCRIPTION:
Created: Nov 5, 2014 13:05:03
Modified: Nov 5, 2014 14:29:48
NO3/TOTOXN 141105NA
DATA DESCRIPTION:
Created: Nov 5, 2014 14:29:17
Modified: Nov 5, 2014 14:29:17

Multi-Channel Table
Type: Unknowns
Channel Range: 1 to 8 -- Cup Range: 1 to 40

| Cup | Sample ID | Sampling Time | # of Reps | TOTOXN (mg/L) | Man Dil Factor |
|---|---|---|---|---|---|
| 1 | 141105A BLK | 14:47:32 | 1 | 0.0006 | 1.0 |
| 4 | 141105A LCS | 14:49:00 | 1 | 4.8320 | 1.0 |
| 5 | 141105A LCSD | 14:50:29 | 1 | 4.7626 | 1.0 |
| 6 | AZ05388W11 | 14:51:57 | 1 | 0.0627 | 1.0 |
| 7 | AZ05389W11 | 14:53:26 | 1 | 0.0554 | 1.0 |
| 8 | AZ05593W28 | 14:54:54 | 1 | 0.5341 | 1.0 |
| 9 | AZ05593W28MS | 14:56:21 | 1 | 5.6537 | 1.0 |
| 10 | AZ05593W28MSD | 14:57:49 | 1 | 5.5746 | 1.0 |

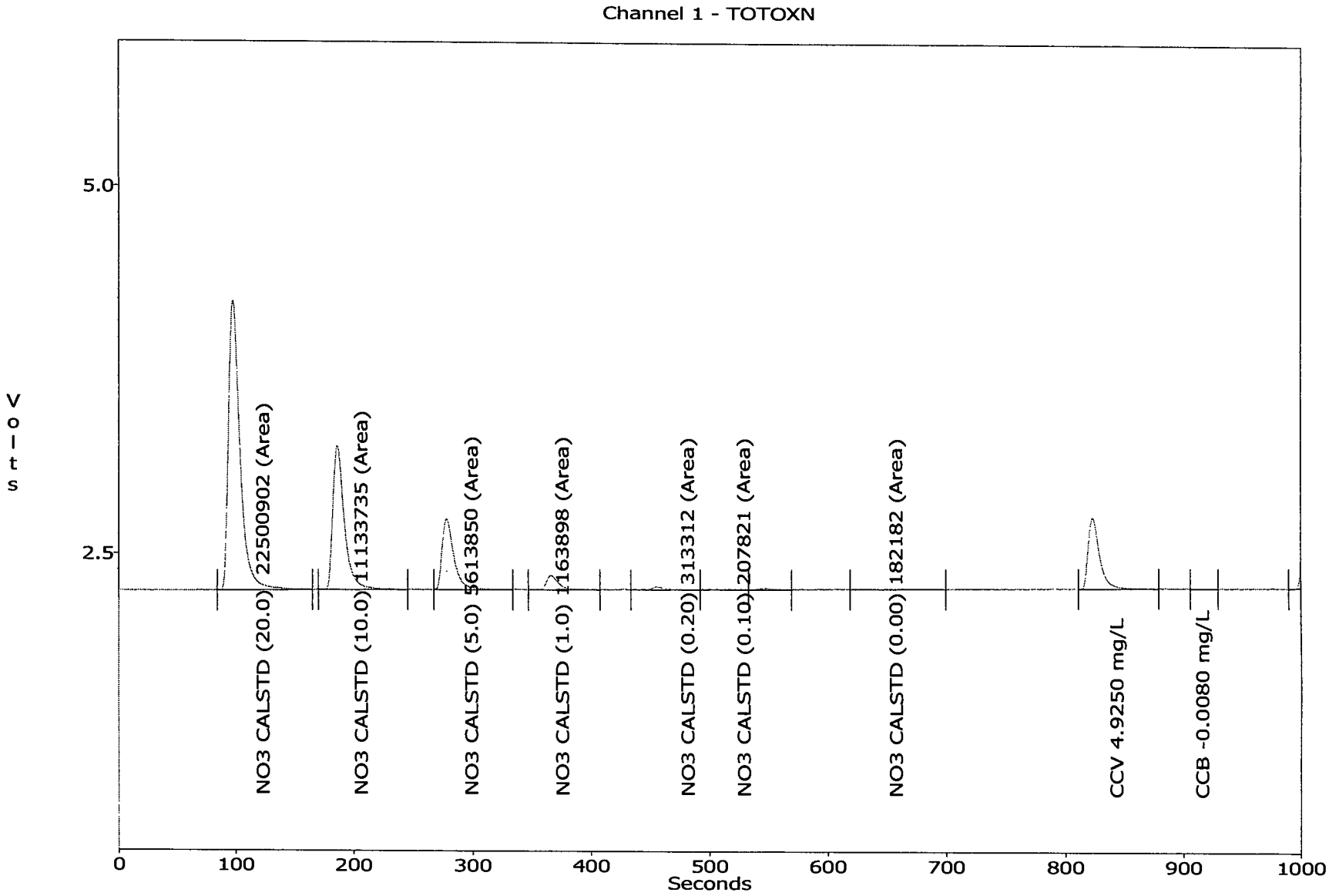
INSTRUMENT: Flow Injection Analysis
TRAY: 141105NA.TRA METHOD: TOTOXN1.MET DATAFILE: 141105NB.FDT
DATE/TIME: Wed Nov 05 14:29:18 2014 OPERATOR: Aileen

*** Begin Calibration ***
Cup# 1 Sample: NO3 CALSTD (20.0) Type: CalStd Level: 1 Rep# 1/1
Ch 1: TOTOXN Peak Area = 22500902.0 µv-s
Cup# 2 Sample: NO3 CALSTD (10.0) Type: CalStd Level: 2 Rep# 1/1
Ch 1: TOTOXN Peak Area = 11133735.0 µv-s
Cup# 15 Sample: NO3 CALSTD (5.0) Type: CalStd Level: 3 Rep# 1/1
Ch 1: TOTOXN Peak Area = 5613850.0 µv-s
Cup# 3 Sample: NO3 CALSTD (1.0) Type: CalStd Level: 4 Rep# 1/1
Ch 1: TOTOXN Peak Area = 1163898.0 µv-s
Cup# 4 Sample: NO3 CALSTD (0.20) Type: CalStd Level: 5 Rep# 1/1
Ch 1: TOTOXN Peak Area = 313312.0 µv-s
Cup# 5 Sample: NO3 CALSTD (0.10) Type: CalStd Level: 6 Rep# 1/1
Ch 1: TOTOXN Peak Area = 207821.0 µv-s
Cup# 6 Sample: NO3 CALSTD (0.00) Type: CalStd Level: 7 Rep# 1/1
Ch 1: TOTOXN Peak Area = 182182.0 µv-s
*** Updated Calibration ***
Ch 1: TOTOXN
** 1st Order Poly Calibration **
C[0] = 8.94884e-007
C[1] = -0.0705413
r = 1.0000
*** End Calibration Block ***
*** Calibration Passed ***
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1
Ch 1: TOTOXN = 4.9250 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.9250 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -1.5006%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1
Ch 1: TOTOXN = -0.0080 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0080 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
*** Starting DQM Set INITIAL ***
Cup# 7 Sample: ICV Type: RelChkStd Rep# 1/1
Ch 1: TOTOXN = 4.8957 mg/L
DQM Sample Results: ICV
Ch 1: TOTOXN = 4.8957 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -2.0864%
Test 1: Passed
Cup# 6 Sample: ICB Type: Blank Rep# 1/1
Ch 1: TOTOXN = -0.0061 mg/L
DQM Sample Results: ICB
Ch 1: TOTOXN
Determined Conc = -0.0061 mg/L
Test 1: Passed
*** End of DQM Set INITIAL - Set Passed ***
Cup# 1 Sample: 141105A BLK Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0006 mg/L
Cup# 4 Sample: 141105A LCS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.8320 mg/L
Cup# 5 Sample: 141105A LCSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.7626 mg/L
Cup# 6 Sample: AZ05388W11 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0627 mg/L
Cup# 7 Sample: AZ05389W11 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0554 mg/L
Cup# 8 Sample: AZ05593W28 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.5341 mg/L

AP 11/5/14
Algorithm check on ICV ✓
$(8.94884)(5549568)(10^{-7}) - 0.0705 = 4.8957$

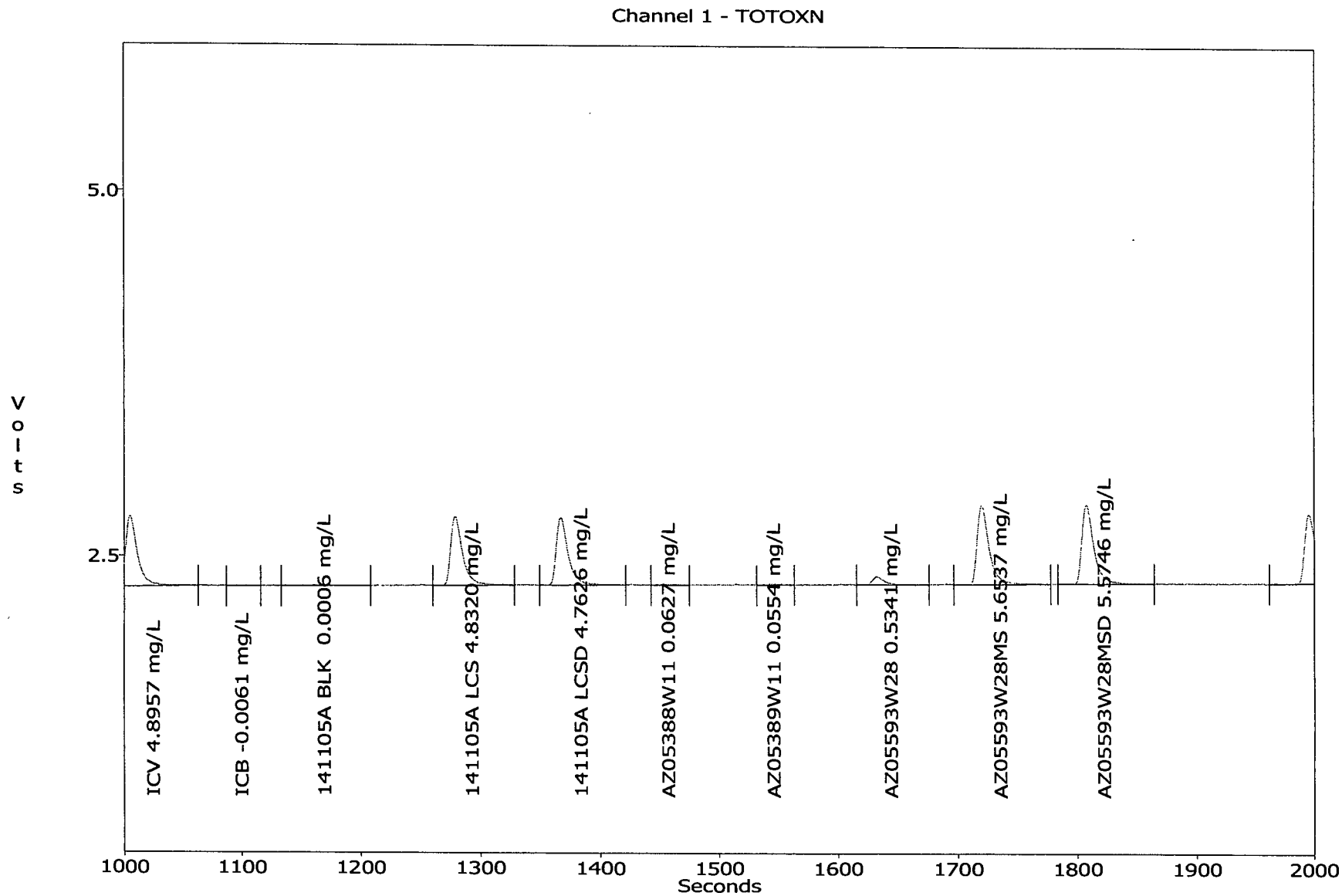
Cup# 9 Sample: AZ05593W28MS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.6537 mg/L
Cup# 10 Sample: AZ05593W28MSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.5746 mg/L
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = 4.9190 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.9190 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -1.6191%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = -0.0082 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0082 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
******* Tray Run Complete *******

**OPERATOR:** Aileen
**ACQ. TIME:** Nov 5, 2014 14:29:17
**DATA FILENAME:** I:\LACHAT\OMNION\141105NB.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141105NA.TRA

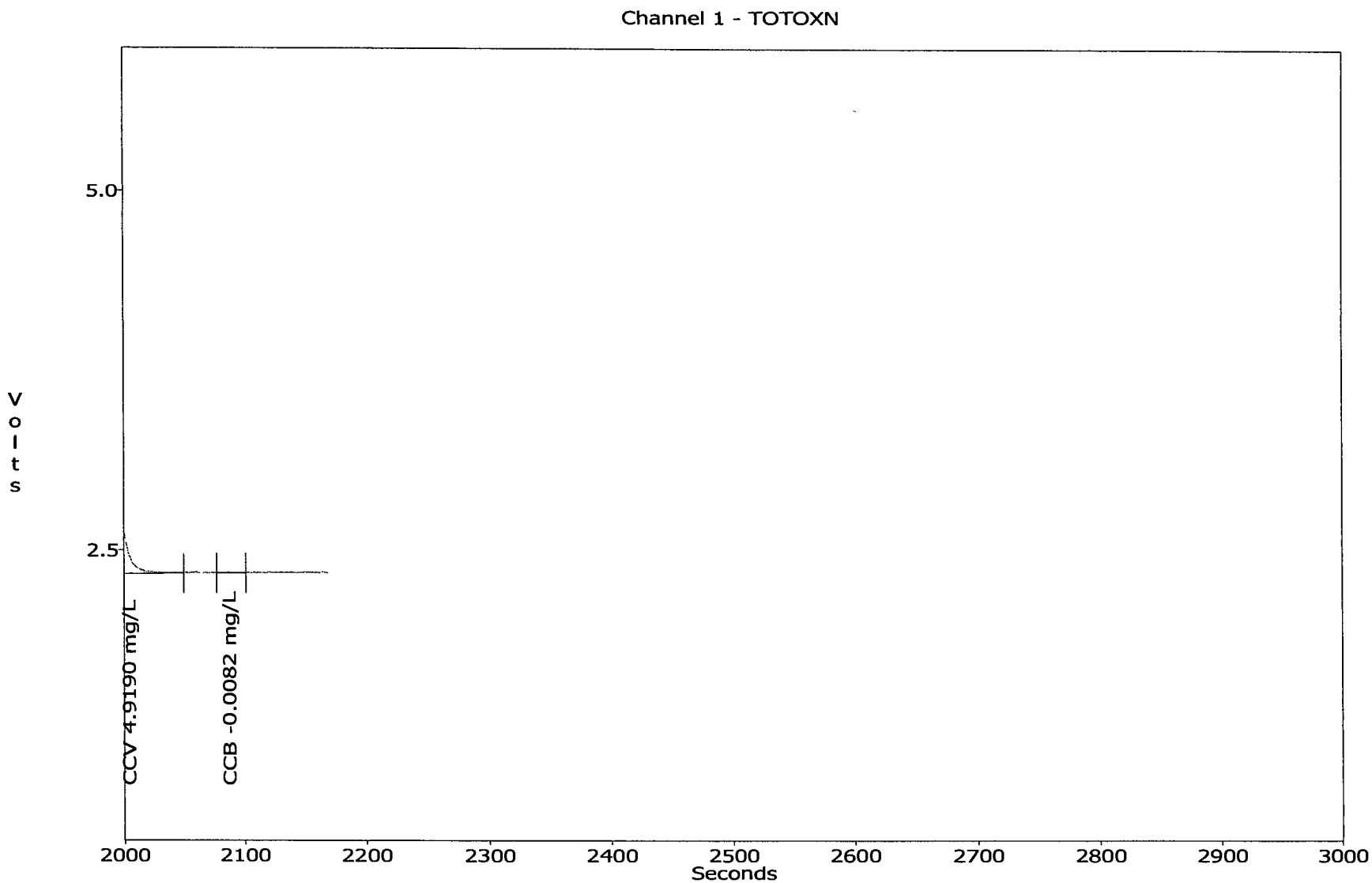



321

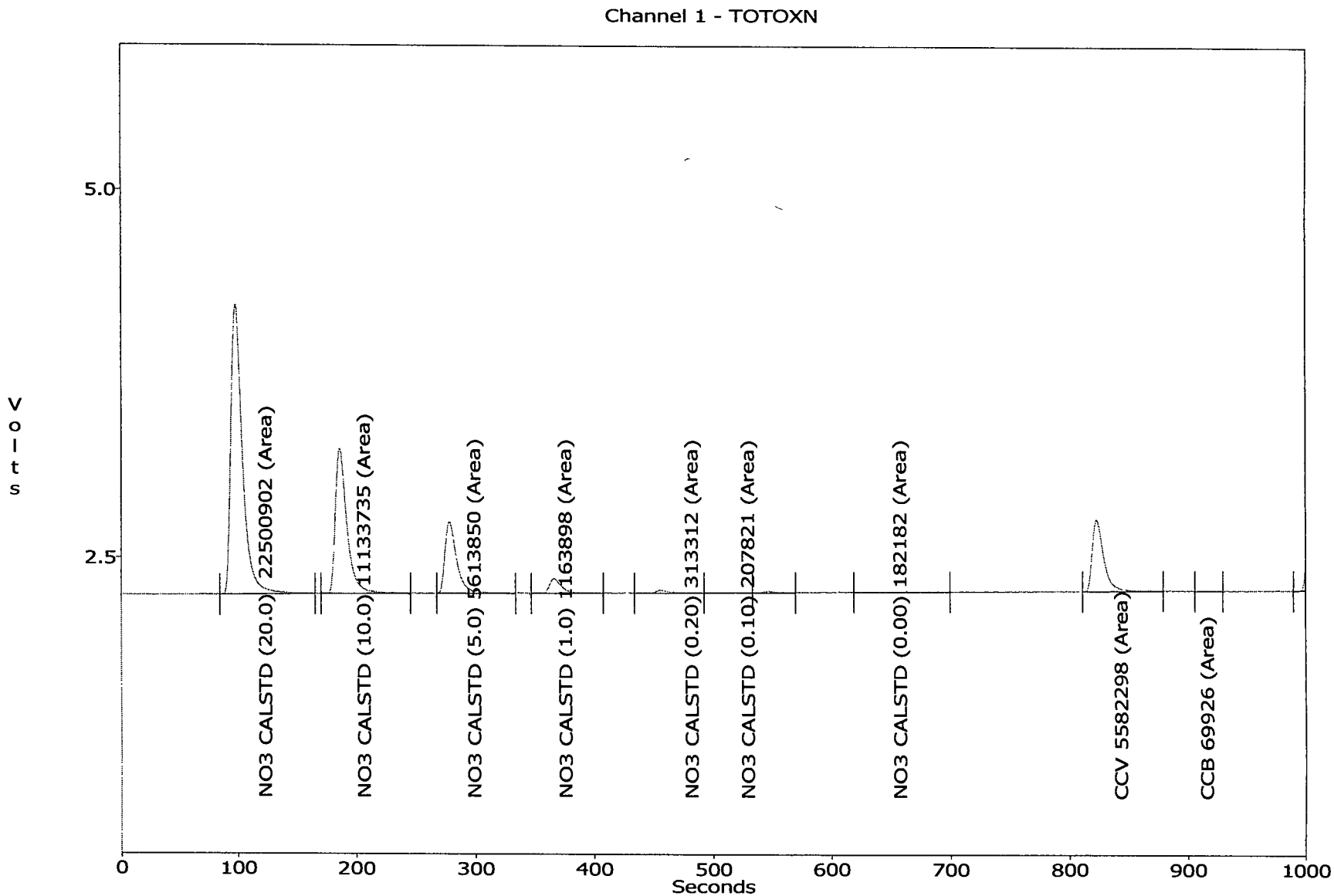
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 5, 2014 14:29:17
**DATA FILENAME:** I:\LACHAT\OMNION\141105NB.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141105NA.TRA



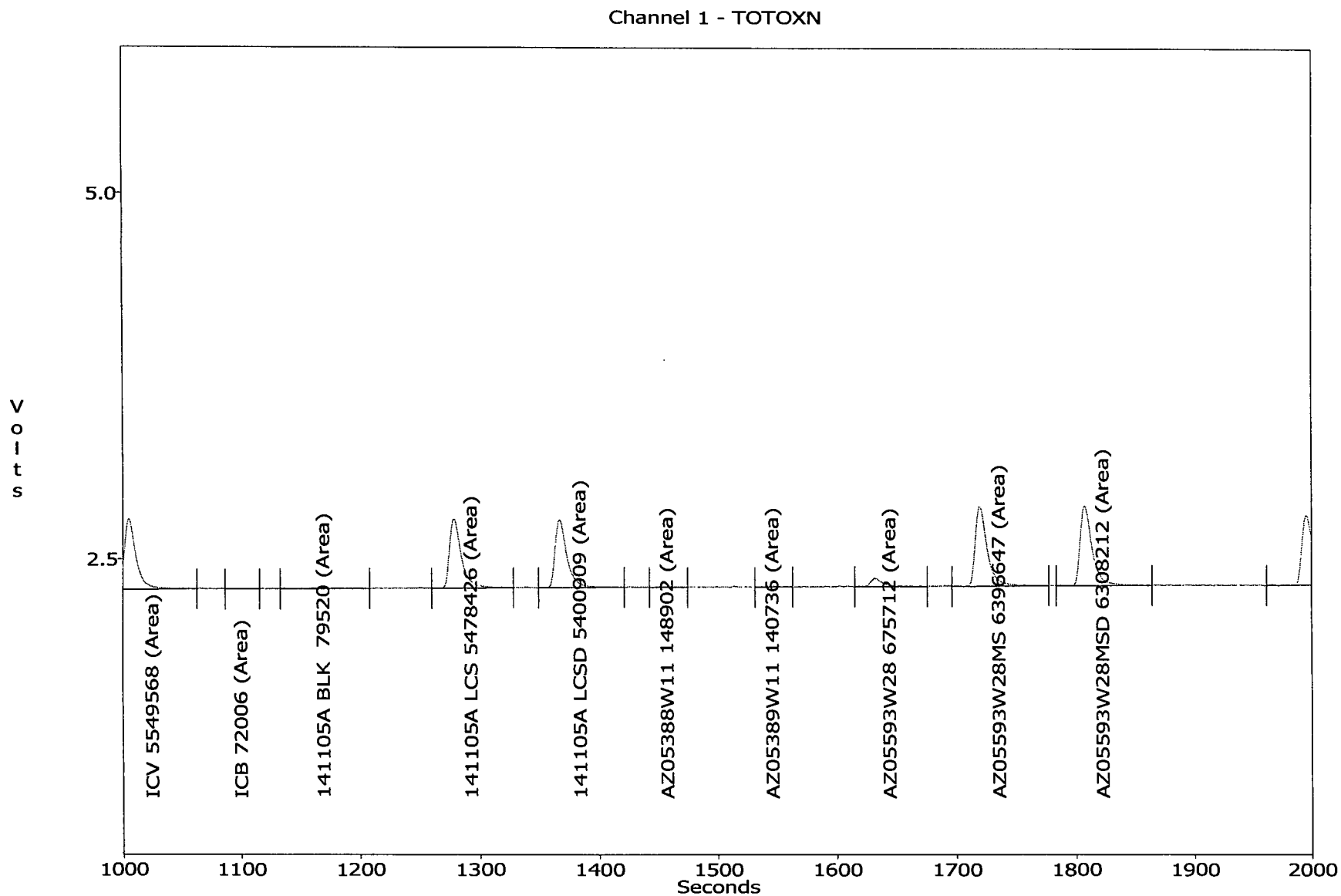
| | |
|---|---|
| OPERATOR: | Aileen |
| ACQ. TIME: | Nov 5, 2014 14:29:17 |
| DATA FILENAME: | I:\LACHAT\OMNION\141105NB.FDT |
| METHOD FILENAME: | I:\LACHAT\METHODS\TOTOXN1.MET |
| TRAY FILENAME: | I:\LACHAT\TRAYS\141105NA.TRA |



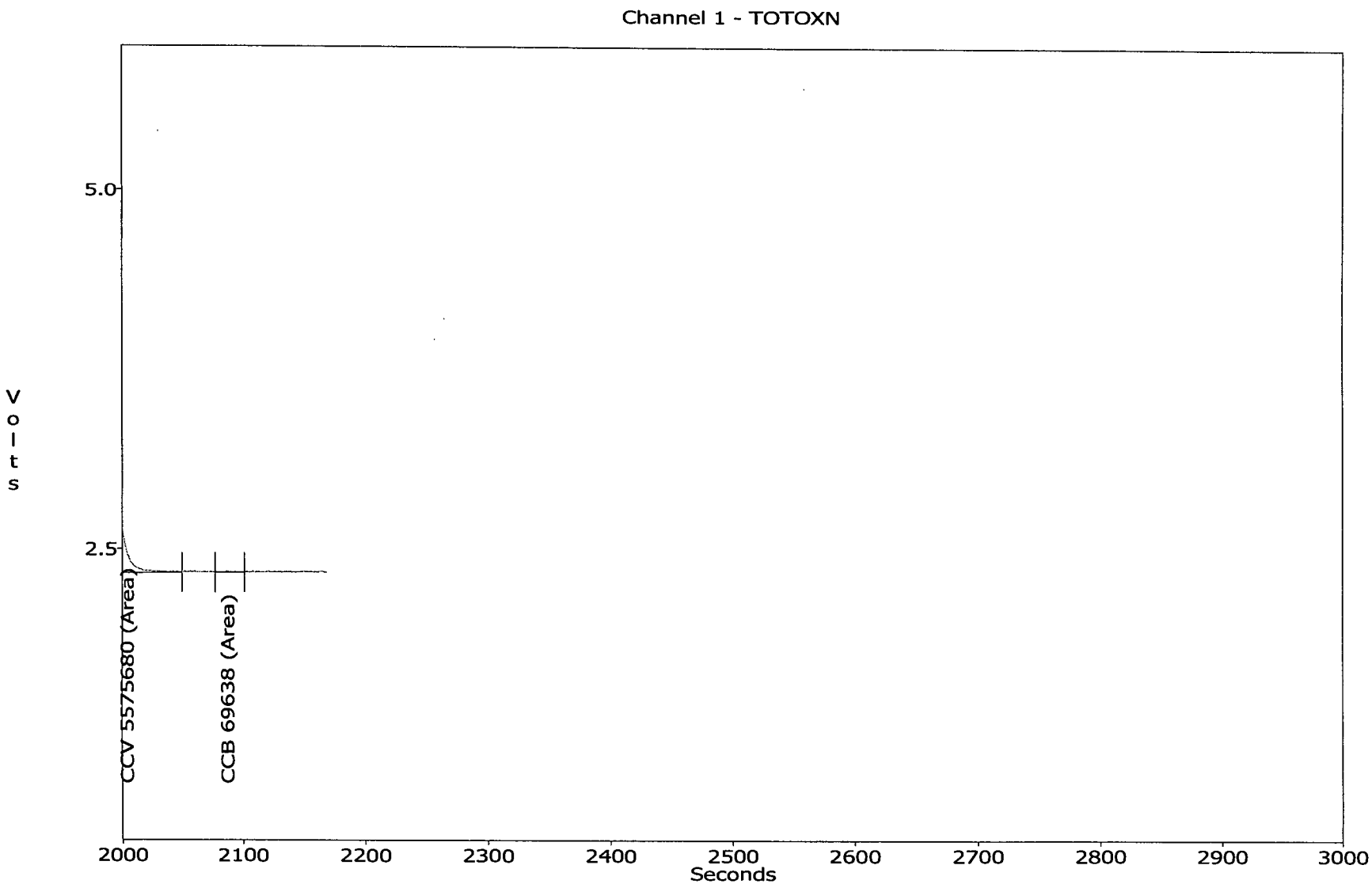
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 5, 2014 14:29:17
**DATA FILENAME:** I:\LACHAT\OMNION\141105NB.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141105NA.TRA



**OPERATOR:** Aileen
**ACQ. TIME:** Nov 5, 2014 14:29:17
**DATA FILENAME:** I:\LACHAT\OMNION\141105NB.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141105NA.TRA



| | |
|---|---|
| OPERATOR: | Aileen |
| ACQ. TIME: | Nov 5, 2014 14:29:17 |
| DATA FILENAME: | I:\LACHAT\OMNION\141105NB.FDT |
| METHOD FILENAME: | I:\LACHAT\METHODS\TOTOXN1.MET |
| TRAY FILENAME: | I:\LACHAT\TRAYS\141105NA.TRA |



| FINAL CONC. (mg/L) |
|---|
| |
| 100 |
| |
| 0.0 |
| |
| 0.5 |
| 1.0 |
| 5.0 |
| 10.0 |
| 20.0 |
| |
| 5.00 |

11-4-14 CK — I2 0.025N Thiosulfate (for S=) — CKD 11-4-14
exp 5-4-15 — 3.20 g I2 EMD LOT20111201240-03046 + 1 l
+25.00 KI BDH LOT0273C515-03219 DI

11-4-14 CK — 0.025N Thiosulfate
exp 5-4-15 — 6.205 g Na2S2O3 5H2O Macron LOT0000024050-03097
+9 ml NaOH 1N (7-29-14)
bring to vol 1 l with DI

11/5/14 AP
Exp 11/12/14

AP 11/5/14

| NO3-N STDS | STD / STOCK | PREP DATE / LOT# | EXP. | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. W/DI H2O (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 100mg/L STOCK | O2S1 | 2/28/14 | 8/30/15 | 1000 | 5 | 50 | 100 |
| | | 1057207 | | | | | |
| 0.1 | 100mg/L NO3-N STOCK | 11/5/14 | 11/12/14 | | 0.1 | 100 | 0.1 |
| 0.2 | | | | | 0.2 | 100 | 0.2 |
| 0.5 | | | | | | | |
| 1 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 10 | | | | | 10.0 | 100 | 10.0 |
| 20 | | | | | 20.0 | 100 | 20.0 |
| | | | | | | | |
| NO3-N ICV | CPI | 13L102 | 11/22/15 | 1000 | 0.25 | 50 | 5.00 |
| | | 5/27/14 | | | | | |
| **LCS /MS /MSD** | **STOCK** | **LOT# 13L102** | **EXP.** | **CONC STOCK [mg/L]** | **STD (mL)** | **FINAL VOL.** | **FINAL CONC. (mg/L)** |
| LCS | CPI | 11/22/15 | 11/12/14 | 1000 | 0.25 | 50 mL | 5 |
| MS / MSD | CPI | 11/22/15 | 11/12/14 | 1000 | 0.25 | 50 mL | 5 |

7/8/20 DE
31-14
LAS
E
ole

Standards Prep Log Book# 62 page #

10/31/14 AP
Exp 11/7/14

AP 10/31/14

| NH4 STDS | STD / STOCK | PREP DATE / LOT | OPEN / EXP DATE | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. DI (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| NH3-N CCV | O2SI | 6/18/13 | 12/8/14 | 1000 | 5 | 50 | 100 |
| | | Lot 1047250 | | | | | |
| 1 | 100mg/L NH4 STOCK | 10/31/14 | 11/7/14 | 100 | 0.0 | 100 | 0.0 |
| 2 | | | | | | | |
| 3 | | | | | 0.5 | 100 | 0.5 |
| 4 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 6 | | | | | 10.0 | 100 | 10.0 |
| 7 | | | | | 20.0 | 100 | 20.0 |
| | | Lot 011714 | | | | | |
| NH3-N ICV | Absolute | 2/21/14 | 1/17/16 | 1000 | 0.25 | 50 | 5.00 |

MBAS

10-31-14 ek
exp 11-1-14

2 ml x 1000 ppm LAS Absolute Stds LOT 071913-33718 | DI 200 ml
= 10 ppm LAS

EKD 10-31-14

10 ml x 10 ppm LAS (10-31-14) | 100 ml DI = 1 ppm LAS

CH 10-31-14

CCV (0.8): 8 ml x 1 ppm LAS (10-31-14) | 100 ml DI

CCV 2 / LCS: 5 ml x 10 ppm LAS (10-31-14) | 100 ml DI

MS: 5 ml x 10 ppm LAS (10-31-14) | 400 ml sample

11-3-14 ek
exp
11-4-14

**$OPO_4$-P For Method SM4500PE exp 11-4-14**

1mL X 1000ppm $PO_4$. P CPI LOT 12G005-32026 / 100mL DI→10ppm $PO_4$-P
10ppm $PO_4$-P (11-3-14) X 10mL / 100mL DI → 1ppm $PO_4$-P
1ppm $PO_4$-P (11-3-14) X 2.5mL / 50mL → 0.05ppm $PO_4$-P
↓ X5mL / ↓ → 0.10ppm $PO_4$-P
↓ X 10mL / ↓ → 0.20ppm $PO_4$-P
↓ X 25mL / ↓ → 0.50ppm $PO_4$-P

**ICV $PO_4$-P**
1000 PO4-P O2SI Lot 1049001-32799X 1mL / 100mL DI → 10ppm $PO_4$-P
10ppm $PO_4$-P (11-3-14)X 0.75mL / 50mL DI → 0.15ppm $PO_4$-P
LCS: 0.75mL X 10ppm $PO_4$-P (11-3-14 / 50mL DI → 0.15ppm $PO_4$-P
MS: 0.75mL X 10ppm $PO_4$-P (11-3-14) / 50mL sample → 0.15ppm $PO_4$-

11/3/14 BB
Book edit 10/23/14
exp. 8/26/15

0.02N $H_2SO_4$ Titrant for Alkalinity
200 mL 0.1 N $H_2SO_4$ (exp 8/26/14)
Final vol 1L w/DI water

BB 10/28/14

BB 10/28/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.83

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02113

BB 10/30/14

BB10/30/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.77

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02124

9/10/14 AP
Exp 9/17/14

AP 9/10/14

| NH4 STDS | STD / STOCK | PREP DATE / LOT | OPEN / EXP DATE | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. DI (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| NH3-N CCV | O2SI | 6/18/13 | 12/8/14 | 1000 | 5 | 50 | 100 |
| | | Lot 1047250 | | | | | |
| 1 | 100mg/L NH4 STOCK | 9/10/14 | 9/17/14 | 100 | 0.0 | 100 | 0.0 |
| 2 | | | | | | | |
| 3 | | | | | 0.5 | 100 | 0.5 |
| 4 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 6 | | | | | 10.0 | 100 | 10.0 |
| 7 | | | | | 20.0 | 100 | 20.0 |
| | | Lot 011714 | | | | | |
| NH3-N ICV | Absolute | 2/21/14 | 1/17/16 | 1000 | 0.25 | 50 | 5.00 |

7/10/14 BB
DI
exp 3/10/15

$NaHCO_3$ Inorganic Spiking Solution
7.0007g $NaHCO_3$ BDH Lot # 183064
Final Vol 1L w/ DI water

7/12/14 BB
exp 8/24/15

0.02N $H_2SO_4$ Titrant for Alkalinity
200 mL 0.1N $H_2SO_4$ (exp 8/26/14)
Final vol 1L w/DI water

9-12-14 CK
exp 9-13-14

7199
1ml x 100 ppm $Cr^{+6}$ (9-9-14) / 100 ml DI = 1000 ppb $Cr^{+6}$
1ml x 1000 ppb $Cr^{+6}$ (9-12-14) / 100 ml DI = 10 ppb $Cr^{+6}$ (CCV)
LCS, MS: 0.25 ml x 1000 ppb $Cr^{+6}$ (9-12-14) / 25 ml DI or sample

9/13/14 MM
exp 9/14/14

1mL x 100ppm $Cr^{6+}$ (9-9-14) / 100mL DI = 1000ppb $Cr^{6+}$ Std
1mL x 1000 ppb $Cr^{6+}$ (9/13/14) / 100mL DI = 10ppb $Cr^{6+}$ (CCV)
1mL x 100ppm $Cr^{6+}$ (9/10/14) / 100mL DI = 1000ppb $Cr^{6+}$ ICV
1mL x 1000 ppb $Cr^{6+}$ (9/13/14) / 100mL DI = 10ppb $Cr^{6+}$ (LCS)
MS: 0.25 mL x 1000ppb $Cr^{6+}$ ICV (9/13/14) / 25mL sample = 10ppb

9-16-14 CK
exp 9-17-14

3060A Digestion
1ml x 100ppm $Cr^{+6}$ 3060 (9-9-14) / 100ml DI = 1 ppm $Cr^{+6}$

| | |
|---|---|
| 09/13/14 MM<br>exp 09/14/14 | Anion LCS, MS/MSD made as per page 48. |
| 09/15/14 MM | Anion eluent made as per page 22 |
| 09/15/14 MM<br>exp 09/16/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 09/16/14 MM<br>exp | Anion ICAL stock, curve, and ICV made as per page 47. |
| 09/16/14 MM<br>exp 09/17/14 | Anion LCS, MS/MSD made as per page 48. |

made as per p. 29 DD 11.11.13 OSP 11.12.13

per p. 29

as per p. 29

| METHOD 300 / 9056 | | ANION STOCK | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| O2SI | F- | 1,000 | 1037642-31166 | 01/04/14 | 0.25 | 5 |
| O2SI | Cl- | 5,000 | 1045796-32404 | 11/08/14 | 0.5 | 50 |
| O2SI | NO2-N | 1,000 | 1040585-31592 | 04/26/14 | 0.25 | 5 |
| Ultra Scientific | Br- | 1,000 | L00953-31570 | 09/30/14 | 1.25 | 25 |
| O2SI | NO3-N | 1,000 | 1040587-31591 | 04/26/14 | 0.5 | 10 |
| O2SI | PO4-P | 1,000 | 1040570-31590 | 04/26/14 | 0.5 | 10 |
| Ultra Scientific | SO4 | 5,000 | P00075-30305 | 02/28/14 | 0.5 | 50 |
| Brought up with milipore water to Final Volume of: | | | | | | 50 |

DD 11.11.13 OSP 11.12.13

| METHOD 300 / 9056 | | | | ANION CAL CURVE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ICAL #1 | ICAL#2 | ICAL#3 | ICAL #4 | ICAL #5 | ICAL #6 | ICAL #7 |
| ID# | mg/L | Prep Date | EXP. DATE | mL | mL | mL | mL | mL | mL | mL |
| ANION STOCK | 100 | | | 0.4 | 2 | 10 | 2 | 5 | 7 | 10 |
| Brought up w/ Milipore Water to final volume of (mL): | | | | 100 | 100 | 100 | 10 | 10 | 10 | na |
| Final Conc F (mg/L): | | | | 0.04 | 0.1 | 0.5 | 1 | 2.5 | 3.5 | 5 |
| Final Conc Cl (mg/L): | | | | 0.4 | 1 | 5 | 10 | 25 | 35 | 50 |
| Final Conc NO2-N (mg/L): | | | | 0.04 | 0.1 | 0.5 | 1 | 2.5 | 3.5 | 5 |
| Final Conc Br (mg/L): | | | | 0.2 | 0.5 | 2.5 | 5 | 12.5 | 17.5 | 25 |
| Final Conc NO3-N (mg/L): | | | | 0.08 | 0.2 | 1 | 2 | 5 | 7 | 10 |
| Final Conc PO4-P (mg/L): | | | | 0.08 | 0.2 | 1 | 2 | 5 | 7 | 10 |
| Final Conc SO4 (mg/L): | | | | 0.4 | 1 | 5 | 10 | 25 | 35 | 50 |

DD 11.11.13 OSP 11.12.13

| METHOD 300 / 9056 | | ANION ICV / LCS | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.625 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | |

DD 11.11.13 OSP 11.12.13

DD 11.11.13 OSP 11.12.13

| | |
|---|---|
| 10/16/14 mm<br>exp 10/17/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 10/17/14 MM<br>exp 10/18/14 | Anion CCV, MS/MSD made as per page 48. |
| 10/20/14 mm | Anion Eluent made as per page 22. |
| 10/20/14 mm<br>exp 10/21/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 10/22/14 mm<br>exp 10/23/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 10/23/14 mm<br>exp 10/24/14 | Anion CCV, MS/MSD made as per page 48 |
| 10/24/14 mm<br>exp 10/25/14 | Anion CCV, LCS, MS/MSD made as per page 48. |

11-11-13
exp 11-12-13

| | | ANION CCV | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| O2SI | F- | 1,000 | 1037642-31166 | 01/04/14 | 0.125 | 2.50 |
| O2SI | Cl- | 5,000 | 1045796-32404 | 11/08/14 | 0.25 | 25.0 |
| O2SI | NO2-N | 1,000 | 1040585-31592 | 04/26/14 | 0.125 | 2.5 |
| Ultra Scientific | Br- | 1,000 | L00953-31570 | 09/30/14 | 0.625 | 12.50 |
| O2SI | NO3-N | 1,000 | 1040587-31591 | 04/26/14 | 0.25 | 5.0 |
| O2SI | PO4-P | 1,000 | 1040570-31590 | 04/26/14 | 0.25 | 5.0 |
| Ultra Scientific | SO4 | 5,000 | P00075-30305 | 02/28/14 | 0.25 | 25.0 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | |

11-11-13

11-11-13
exp 11-12-13

| METHOD 300 / 9056 | | ANION LCS | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.63 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | |

11-11-13

11-11-13
exp 11-12-13

| METHOD 300 / 9056 | | ANION MS/MSD | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.63 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Final Volume of Sample: (mL) | | | | | 50 | |

11-11-13

# 353.2 Injection Log

Directory: I:\Lachat\UPLOAD\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 1 | 05 Nov 2014 | 14:29 | NO3 CALSTD (20.0) | | 141105NB | 1. |
| 2 | 05 Nov 2014 | 14:30 | NO3 CALSTD (10.0) | | 141105NB | 1. |
| 3 | 05 Nov 2014 | 14:32 | NO3 CALSTD (5.0) | | 141105NB | 1. |
| 4 | 05 Nov 2014 | 14:33 | NO3 CALSTD (1.0) | | 141105NB | 1. |
| 5 | 05 Nov 2014 | 14:35 | NO3 CALSTD (0.20) | | 141105NB | 1. |
| 6 | 05 Nov 2014 | 14:36 | NO3 CALSTD (0.10) | | 141105NB | 1. |
| 7 | 05 Nov 2014 | 14:38 | NO3 CALSTD (0.00) | | 141105NB | 1. |
| 8 | 05 Nov 2014 | 14:41 | CCV | | 141105NB | 1. |
| 9 | 05 Nov 2014 | 14:42 | CCB | | 141105NB | 1. |
| 10 | 05 Nov 2014 | 14:44 | ICV | | 141105NB | 1. |
| 11 | 05 Nov 2014 | 14:45 | ICB | | 141105NB | 1. |
| 12 | 05 Nov 2014 | 14:47 | 141105A BLK | | 141105NB | 1. |
| 13 | 05 Nov 2014 | 14:49 | 141105A LCS | | 141105NB | 1. |
| 14 | 05 Nov 2014 | 14:50 | 141105A LCSD | | 141105NB | 1. |
| 15 | 05 Nov 2014 | 14:51 | AZ05388W11 | | 141105NB | 1. |
| 16 | 05 Nov 2014 | 14:53 | AZ05389W11 | | 141105NB | 1. |
| 20 | 05 Nov 2014 | 15:00 | CCV | | 141105NB | 1. |
| 21 | 05 Nov 2014 | 15:02 | CCB | | 141105NB | 1. |

# 300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 32 | 16 Sep 2014 | 13:01 | CAL STD #1 9/16/14 | | 140916a | 1. |
| 33 | 16 Sep 2014 | 13:12 | CAL STD #2 | | 140916a | 1. |
| 34 | 16 Sep 2014 | 13:23 | CAL STD #3 | | 140916a | 1. |
| 35 | 16 Sep 2014 | 13:35 | CAL STD #4 | | 140916a | 1. |
| 36 | 16 Sep 2014 | 13:46 | CAL STD #5 | | 140916a | 1. |
| 37 | 16 Sep 2014 | 13:57 | CAL STD #6 | | 140916a | 1. |
| 38 | 16 Sep 2014 | 14:08 | CAL STD #7 | | 140916a | 1. |
| 39 | 16 Sep 2014 | 14:20 | 140916A ICV | | 140916a | 1. |
| 40 | 16 Sep 2014 | 14:31 | ICB | | 140916a | 1. |

# 300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 1 | 22 Oct 2014 | 08:18 | CCV 141022 | | 141022a | 1. |
| 2 | 22 Oct 2014 | 08:29 | CCB | | 141022a | 1. |
| 3 | 22 Oct 2014 | 08:40 | 141022A LCS | | 141022a | 1. |
| 7 | 22 Oct 2014 | 11:32 | AZ05388W10 DF2 | | 141022a | 2. |
| 8 | 22 Oct 2014 | 11:43 | AZ05389W10 DF2 | | 141022a | 2. |
| 10 | 22 Oct 2014 | 12:05 | CCV 141022 | | 141022a | 1. |
| 11 | 22 Oct 2014 | 12:17 | CCB | | 141022a | 1. |
| 17 | 22 Oct 2014 | 13:57 | CCV 141022 | | 141022a | 1. |
| 18 | 22 Oct 2014 | 14:08 | CCB | | 141022a | 1. |
| 19 | 22 Oct 2014 | 14:20 | 141022B LCS | | 141022a | 1. |
| 28 | 22 Oct 2014 | 16:01 | CCV 141022 | | 141022a | 1. |
| 29 | 22 Oct 2014 | 16:12 | CCB | | 141022a | 1. |
| 31 | 22 Oct 2014 | 16:34 | AZ05388W10 DF10 | | 141022a | 10. |
| 39 | 22 Oct 2014 | 18:03 | CCV 141022 | | 141022a | 1. |
| 40 | 22 Oct 2014 | 18:15 | CCB | | 141022a | 1. |

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

# Data Validatable Report

December 2, 2014

Parsons
10235 South Jordan Gateway, Suite 300
South Jordan, Utah 84095

Attn: Gene Wright

Title: Report of Data: Case 74701

Project: 749435 Red Hill TO 0068, Hawaii

Contract #: Prime contract for DoD: ESAT Contract N62583-11-D-0515 TO 0068
Battelle Purchase Order # US001-0000434917

Dear Mr Wright:

Two water samples were received October 22, 2014, in good condition. Written results for the requested analyses are provided on this December 3, 2014.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Diane Anderson, danderson@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM v4.2. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/cm
Enclosure
cc: File

Number of pages in this report: _____

# Data Validation Package
# for

# 749435 Red Hill TO 0068

# ARF 74701

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# SAMPLE RECEIPT INFORMATION

# Sample Receipt Information

ARF: 74701

Project: 749435 Red Hill TO 0068

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: CA00046 (HW)

DoD-ELAP Certificate number: 74807

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

**Sample Receipt Information:**

The water samples were received October 22, 2014 at 2.5°C. The samples were assigned Analytical Request Form (ARF) number 74701. The sample numbers and requested analyses were compared to the chain of custody. No exception was noted.

**Sample Table**

| CLIENT ID | APPL ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| RHMW06-GW-01 | AZ05593 | WATER | 10/21/14 | 10/22/14 |
| TB102114 | AZ05594 | WATER | 10/21/14 | 10/22/14 |

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

APPL's laboratory control limits generated in house statistically do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control spike recoveries for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

# CASE NARRATIVE

# EPA Method 8011

**Sample Preparation:**

The water samples were extracted according to EPA method 8011. All holding times were met.

**Sample Analysis Information:**

The samples were analyzed according to the method using an Agilent Gas Chromatograph with a flame ionization detector.

**Quality Control/Assurance**

**Calibrations:**

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

**Blanks:**

No target analyte was detected above one-half the limit of quantitation (LOQ) in the method blank.

**Spikes:**

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

Sample RHMW06-GW-01 was designated by the client for MS/MSD analysis. All spike recoveries were acceptable.

**Surrogates**

The surrogate recoveries are summarized in the Form 2 & 8. All surrogate recoveries were within the control limits.

**Summary:**

No problem was encountered.

# EPA Method 8260C

# Volatile Organic Compounds

**Sample Preparation:**

The water samples were purged according to EPA method 5030B. All holding times were met.

**Sample Analysis Information:**

The samples were analyzed according to EPA method 8260C using an Agilent Gas Chromatograph with a mass spectrometer detector. The samples were received in unpreserved vials and were analyzed within seven days of collection. All holding times were met.

**Quality Control/Assurance:**

**Spike Recovery:**

A Laboratory Control Spike (LCS) was used for quality assurance. A second-source standard was used for the LCS. All LCS recoveries were acceptable.

Sample RHMW06-GW-01 was designated by the client for MS/MSD analysis. In the MS, 12 analytes recovered above their upper control limit; in the MSD, nine analytes recovered above their upper control limit. All other spike recoveries were acceptable.

**Surrogates:**

The surrogate recoveries are summarized in the Form 2 & 8. All surrogate recoveries were within the control limits.

**Method blanks:**

No target analyte was detected above one-half the limit of quantitation (LOQ) in the method blank.

**Calibration:**

Initial and continuing calibrations were analyzed according to the method. All calibration criteria were met.

**Tuning:**

The instrument was tuned using BFB. All method criteria were met.

**Internal Standards:**

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8260C. All method criteria were met.

**Summary:**

No other analytical exception is noted. All data generated are acceptable.

# Dissolved Methane
# RSK-175

## Sample Preparation and Analysis

The water samples were analyzed with guidance from RSK-175. The samples were allowed to equilibrate for 10 minutes at 40°C and a portion of the headspace was analyzed using a Hewlett Packard Gas Chromatograph with a flame ionization detector. The samples were received in unpreserved vials and were analyzed within seven days of collection. All holding times were met.

## Quality Control/Assurance

### Spike Recovery

Laboratory Control Spikes (LCS/LCSD) were used for quality assurance. All acceptance criteria were met.

Sample RHMW06-GW-01 was designated by the client for MS/MSD analysis; however, the MS/MSD was not analyzed within holding time. The client was notified. No further action was required.

### Method blanks

The blank contained no target analyte above one-half the limit of quantitation (LOQ).

### Calibration

The initial and continuing calibrations were performed with guidance from RSK-175. All acceptance criteria were met.

## Summary:

No analytical exception is noted.

# EPA Methods 6020A
# Metals

**Sample Preparation Information**

The water samples were digested according to EPA methods 3015. No exception was encountered. All holding times were met.

**Analysis Information:**

**Samples:**

The samples were analyzed for dissolved lead according to EPA method 6020 using an Agilent 7700X ICP-MS. Due to the high sodium content in the samples, they were analyzed at a DF5. The reporting limit was raised (DF2) to the level supported by the calibration.

**Calibrations:**

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration acceptance criteria were met.

**Blanks:**

No target compound was detected at or above one-half the LOQ in the method blank.

**Spikes:**

Laboratory Control Spike (LCS), matrix spikes (MS/MSD), serial dilution test (DT), and post digestion spike (PDS) were used for quality assurance. All acceptance criteria were met in the LCS.

Sample RHMW06-GW-01 was designated by the client for MS/MSD analysis. All MS, MSD, and PDS recoveries were acceptable. The DT was not applicable.

**Internal Standards:**

All method criteria were met for the internal standards.

**Summary:**

No analytical exception is noted. All data are acceptable.

**Amended Page**

# EPA Methods 353.2, 9056 and SM 2320B

# Nitrate-Nitrite-N, Anions, and Alkalinity

**Sample Preparation Information:**

The water samples were prepared according to the methods.

**Analysis Information:**

**Samples:**

The samples were analyzed according to the methods. A Dionex DX500 ion chromatograph was used for the EPA 9056 analysis. A Lachat was used for the EPA 353.2 analysis. All holding times were met.

**Calibrations:**

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration criteria were met.

**Blanks:**

No target analyte was detected above one-half the LOQ in the method blanks.

**Spikes:**

Laboratory Control Spikes (LCS and/or LCS/LCSD) and matrix spikes (MS/MSD) were used for quality assurance. All recoveries were within acceptance limits in the LCS and/or LCS/LCSD.

Sample RHMW06-GW-01 was designated by the client for MS/MSD analysis. All spike recoveries were acceptable.

**Summary:**

No analytical exception is noted. All data are acceptable.

# APPL Inc.
# Abbreviations and Flags

| FLAG | DESCRIPTION |
|---|---|
| # | Recovery or RPD outside control limits |
| * | Recovery or RPD outside control limits |
| B | Analyte detected in associated method blank |
| C1 | Reason for correction: wrote incorrect response |
| C2 | Reason for correction: calculated incorrectly |
| C3 | Reason for correction: needs to be rechecked |
| C4 | Reason for correction: data not usable |
| DO | Diluted out |
| E | Exceeds linear range |
| F | Estimated value |
| G1 | Includes a wide range of hydrocarbons which does not match our gasoline standard |
| G10 | Includes a match to hydrocarbon profiles within the range of mineral spirits |
| G11 | Includes a match to hydrocarbon profiles within the range of JP-4 |
| G12 | Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8 |
| G13 | Closely resembles the hydrocarbon profile of aviation gasoline |
| G14 | Analyte concentration may be biased due to carry over |
| G2 | Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline |
| G3 | Includes higher boiling hydrocarbons |
| G4 | Includes dominant peak(s) not indicative of petroleum hydrocarbons |
| G5 | Is mainly dominant peak(s) not indicative of petroleum hydrocarbons |
| G6 | Contains recognizable contaminant peak(s) which has been removed from quantitation |
| G7 | Is mainly a match to hydrocarbons within the range of gasoline |
| G8 | Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline |
| G9 | Includes hydrocarbons within the range of kerosene |
| J | Estimated value |
| M | Matrix effect |
| MI1 | Manual integration: integration does not follow baseline |
| MI2 | Manual integration: non-target peak interference |
| MI3 | Manual integration: to split a peak that was integrated as one peak by the computer. |
| MI4 | Manual integration: to integrate a split peak |
| MI5 | Manual integration: the whole peak or part of the peak was not integrated |
| MI6 | Manual integration: computer integrated wrong peak |
| MI7 | Manual integration: other – (See case narrative) |
| MDL | Method detection limit |
| ND | Not detected |
| NT | Non-target |
| Q | Acceptance criteria not met |
| T1 I | Includes wide range of hydrocarbons not indicative of diesel |
| T1 M | Is mainly wide range of hydrocarbons not necessarily indicative of diesel |
| T2 I | Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas |
| T2 M | Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas |
| T3 I | Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel |
| T3 M | Is mainly higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel |
| T4 I | Includes dominant peak(s) not indicative of hydrocarbons |
| T4 M | Is mainly dominant peak(s) not indicative of hydrocarbons |
| T5 | Contains recognizable contaminant peak(s) which has been removed from quantitation |
| T6 | Is mainly a match to hydrocarbons within range of diesel fuel |
| T7 | Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel |
| T8 | Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel |
| T9 I | Includes non-diesel hydrocarbons within boiling point range of diesel fuel |
| T9 M | Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel |
| U | Not detected |
| Y | Percent difference between primary and confirmation column > 40% |

# CHAIN OF CUSTODY,
# ARF, CRF, AND
# CLIENT COMMUNICATION

# APPL - Analysis Request Form

**74701**

Client: **Parsons**
Address: **10235 S. Jordan Gateway Ste 300**
**South Jordan, UT 84095**
Attn: **Gene Wright**
Phone: **801-553-3317** Fax:
Job: **749435 Red Hill TO 0068**
PO #: **PO#434917**
Chain of Custody (Y/N): **Y** # **44313**
RAD Screen (Y/N): **Y** pH (Y/N): **Y**
Turn Around Type: **2 WEEKS**

Received by: **CM**
Date Received: **10/22/14** Time: **10:00**
Delivered by: **FED EX**
Shuttle Custody Seals (Y/N): **Y** Time Zone: **-10**
Chest Temp(s): **2.5°C**
Color: **VOA/D-YELL/R-ORGYEL**
Samples Chilled until Placed in Refrig/Freezer: **Y**
Project Manager: **Diane Anderson**
QC Report Type: **DVP4/NEDD/NIRIS/HI**
Due Date: **11/05/14**

Comments:
***pdf ARF and prelims to gene.wright@parsons.com & scalac@battelle.org***
***10 business days for form 1s; 21 calendar days for final DVP with internal COC.***
***send 1 hardcopy DVP4 and PDF bookmarked on CD to Gene;***
***pdf via email or ftp to scalac@battelle.org***
***Guidance: DoD QSMv4.2; DoD forms U flag at LOD, LOD database***
***EDD: NEDD/NIRIS to gene.wright@parsons.com & scalac@battelle.org***
***8011 = EDB & DBCP only; RSK = Methane only***
***Chloride added to 9056 analysis per 11/3 email (chc)***

Sample Distribution:
**GC: 1-$8011**
**Extractions: 1-_MWE012**
**VOA: 2-$86CREDW, 1-$RSK50**
**Metals: 1-$62A14WD(Pb)**
**Wetlab: 1-$232W(ALK), 1-$35OF(TOXN), 1-$9056DOD(CL,SO4)**
**Other: 1-_M3015F**

Charges:

Invoice To:
**BATTELLE MEMORIAL INSTITUTE**
**accountspayable@battelle.org**
**505 King Ave**
**Columbus OH 43201-2696**

| | Client ID | | APPL ID | Sampled | Analyses Requested |
|---|---|---|---|---|---|
| 1. | RHMW06-GW-01 | MS/MSD | AZ05593W | 10/21/14 11:00 | $232W(ALK), $35OF(TOXN), $62A14WD(Pb), $8011, $86CREDW, $9056DOD(CL,SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs |
| 2. | TB102114 | | AZ05594W | 10/21/14 11:00 | $86CREDW -- unpreserved VOA 7day HT; LL VOCs |

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -10 UTC

# APPL Sample Receipt Form

ARF# **74701**

| Sample | Container Type | Count | pH |
|---|---|---|---|
| AZ05593 | 2 PL 500mL | 3 | NA |
| | 7 PL 250mL - HNO3 | 3 | 1.7 |
| | 29 PL 125mL - H2SO4 | 3 | 1.7 |
| | 15 VOAs - NP | 27 | NA |
| AZ05594 | 15 VOAs - NP | 1 | NA |

| Sample | Container Type | Count | pH |
|---|---|---|---|

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

# CHAIN OF CUSTODY RECORD

2.5
74701

C.O.C. 44313

| Report to: PLEASE PRINT | Invoice to: PLEASE PRINT |
|---|---|
| Company Name: Battelle c/o Parsons Phone: 801 553 3317 | Company Name: Phone: |
| Address: Fax: | Address: Fax: |
| Attn: Gene Wright | Attn: |

| Project Name/Number | Sampler (Print) |
|---|---|
| 749435 | Jim Terry / Environmet |
| Purchase Order Number | Sampler (Signature) |

Date Shipped:
Carrier:
Waybill No.:
Comments:

| Sample Identification | Location | Date Collected | Time Collected | Time Zone | No. of Containers | Matrix: Aq | Sed. | Soil | | VOCs | EDB | Methane | Alk/SO4 | Nitr N | Lead | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RHMW06-GW-01 | Red Hill, HI | 10/21/14 | 1100 | HI | 12 | ✓ | | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | lead filtered in field |
| RHMW06-GW-01MS | " " | " | 1100 | | 12 | | | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | |
| RHMW06-GW-01MSD | " " | " | 1100 | | 12 | | | | | 3 | 3 | 3 | 1 | 1 | 1 | | | | | | | |
| TB102114 | " " | " | 1100 | | 1 | ✓ | | | | 1 | | | | | | | | | | | | |

Shuttle Temperature:

Turnaround Requested: Check one
☐ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☐ Disposal by Lab (30-day retention)

| Relinquished by sampler: | Date | Time | Received by: | Relinquished by: | Date | Time | Received by: |
|---|---|---|---|---|---|---|---|
| [signature] | 10/21/14 | 1530 | | | | | |
| Relinquished by: | Date | Time | Received by: | Relinquished by: | Date | Time | Received at lab by: |
| | | | | | 10/22/14 | 1000 | [signature] |

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

*See reverse side for Container Preservative and Sampling Information*

COOLER RECEIPT FORM ARF: 74701

1) Project: 749435 Red Hill TO 0068 Date Received: 10/22/14

**2) Coolers:** Number of Coolers: 1

3) YES Were custody seals present and intact?
How many? 2 Name/Date on seal? See below

4) YES Was there a shipping slip? Carrier name: FED EX

5) Type of packing in cooler: X bubble wrap ___ popcorn ___ foam ___ plastic bags
X wet ice ___ dry ice ___ no ice ___ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use A39267

8) Cooler temp(s): In °C

| | | | | | |
|---|---|---|---|---|---|
| 1: 2.5 | 2: | 3: | 4: | 5: | 6: |
| 7: | 8: | 9: | 10: | 11: | 12: |

CUSTODY SEAL
APPL, Inc.
(559) 275-2175
Initials JT
Date 10/24/14

**Chain of custody:**

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

**Sample Labels:**

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

**Sample Containers:**

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea:
Smaller than a pea:

**Preservation Hold time:**

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) Yes Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) Yes Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) Yes Were unpreserved VOA Vials received? RS 10/24/14

23) YES/NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
YL 10/24/14 pH strip lot number:
Lab notified if pH was not adequate:

Notes/Deficiencies:

Personnel receiving samples: YL Second reviewer: BB
Personnel labeling samples:
Project manager notified: Date/Time of notification
Name of client notified: Date/Time of notification

# Chain of Custody

Client: Parsons
ATTN: Gene Wright
Project: 749435 Red Hill TO 0068
PO: PO#434917

ARF: 74701

| Container | Moved To | Date - Time | User Name | Reason For Move |
|---|---|---|---|---|
| **Sample Number: AZ05593** | **Client ID: RHMW06-GW-01** | | | |
| W01 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/26/2014 12:53:21 | Gokal, Dipti | VOA Key -> Dipti Gokal |
| W02 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Extraction | 10/27/2014 15:22:37 | Caballero, Irvin | Key #3 -> Irvin Caballero Extraction/Spen |
| W03 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | pH_Test | 10/28/2014 16:28:13 | Saldana, Regina | pH Verification: pH = 6 (lot HC412469) |
| W04 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W05 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W06 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | pH_Test | 11/12/2014 10:14:25 | Gokal, Dipti | pH Verification: pH = 6 (lot HC4133032) |
| W07 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Extraction | 10/27/2014 15:22:38 | Caballero, Irvin | Key #3 -> Irvin Caballero Extraction/Spen |
| W08 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W09 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | pH_Test | 11/12/2014 10:15:12 | Gokal, Dipti | pH Verification: pH = 6 (lot HC4133032) |
| W10 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Extraction | 10/27/2014 15:22:36 | Caballero, Irvin | Key #3 -> Irvin Caballero Extraction/Spen |
| W11 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W12 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Extraction | 10/27/2014 15:22:33 | Caballero, Irvin | Key #3 -> Irvin Caballero Extraction/Spen |
| W13 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Extraction | 10/27/2014 15:22:36 | Caballero, Irvin | Key #3 -> Irvin Caballero Extraction/Spen |
| W14 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W15 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | pH_Test | 11/12/2014 10:13:16 | Gokal, Dipti | pH Verification: pH = 2 (lot HC4133032) |
| W16 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W17 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W18 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W19 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W20 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W21 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W22 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W23 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W24 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W25 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |

# Chain of Custody

| | |
|---|---|
| Client: | Parsons |
| ATTN: | Gene Wright |
| Project: | 749435 Red Hill TO 0068 |
| PO: | PO#434917 |

ARF: 74701

| Container | Moved To | Date - Time | User Name | Reason For Move |
|---|---|---|---|---|
| W26 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W27 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W28 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Wetlab | 11/04/2014 12:17:23 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | D - Yellow | 11/04/2014 13:36:24 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| | Wetlab | 11/05/2014 11:23:11 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | Spent | 11/05/2014 15:18:20 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| W29 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Wetlab | 11/04/2014 12:17:26 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | D - Yellow | 11/04/2014 13:36:28 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| | Wetlab | 11/05/2014 11:23:08 | Parmeter, Aileen | Key #7 -> Aileen Parmeter |
| | D - Yellow | 11/05/2014 15:18:08 | Parmeter, Aileen | Aileen Parmeter -> Key #7 |
| W30 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W31 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W32 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Wetlab | 10/28/2014 11:19:56 | Mehlman, Moriah | Key #7 -> Moriah Mehlman |
| | D - Yellow | 10/28/2014 16:25:24 | Mehlman, Moriah | Moriah Mehlman -> Key #7 |
| | Wetlab | 11/03/2014 14:09:21 | Bulnes, Briana | Key #7 -> Briana Bulnes |
| | D - Yellow | 11/03/2014 14:53:59 | Bulnes, Briana | Briana Bulnes -> Key #7 |
| W33 | D-Yellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Wetlab | 11/03/2014 10:58:06 | Mehlman, Moriah | Key #7 -> Moriah Mehlman |
| | D - Yellow | 11/03/2014 16:32:11 | Kusumo, Cecilia | Moriah Mehlman -> Key #7 |
| W34 | R-OrangeYellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| W35 | R-OrangeYellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | Metals | 11/05/2014 10:42:36 | Moreyda, Nick | Key #2 -> Nick Moreyda |
| | R - OrangeYell | 11/05/2014 12:04:40 | Moreyda, Nick | Nick Moreyda -> Key #2 |
| W36 | R-OrangeYellow | 10/22/2014 10:00:00 | Moua, Chue | Container Received |

**Sample Number: AZ05594 Client ID: TB102114**

| | | | | |
|---|---|---|---|---|
| W01 | VOA_Frig | 10/22/2014 10:00:00 | Moua, Chue | Container Received |
| | VOA-LOKI | 10/26/2014 12:53:22 | Gokal, Dipti | VOA Key -> Dipti Gokal |

# 8011
# for
# DBCP & EDB Fumigants

APPL, INC.

# 8011
# for
# DBCP & EDB Fumigants
# QC Summary

APPL, INC.

# Method Blank
## EPA 8011

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141027W-05593 - 191515**
Batch ID: #8011-141027A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | SURROGATE: 1,3-DIBROMOPRO | 99.0 | 70-132 | | | % | 10/27/14 | 10/30/14 |

Quant Method:80111027.M
Run #:1022112
Instrument:Herbie
Sequence:141022
Initials:MA

*GC SC-Blank-REG MDLs*
*Printed: 11/14/14 3:19:27 PM*

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 74701

Case No: 74701 Date Analyzed: 10/30/14

Matrix: WATER Instrument: Herbie

| APPL ID. | Client Sample No. | SURROGATE: 1,3-DIBROMOPROPANE (S) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141027A-BLK | Blank | 70-132 | 99.0 | | | | |
| 141027A-LCS | Lab Control Spike | 70-132 | 104 | | | | |
| AZ05593-MS | Matrix Spike | 70-132 | 101 | | | | |
| AZ05593-MSD | Matrix SpikeD | 70-132 | 101 | | | | |
| AZ05593 | RHMW06-GW-01 | 70-132 | 97.6 | | | | |

Comments: Batch: #8011-141027A

# Laboratory Control Spike Recovery

## EPA 8011

APPL ID: **141027W-05593 LCS - 191515**
Batch ID: #8011-141027A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| DBCP | 0.482 | 0.507 | 105 | 60-140 |
| EDB | 0.482 | 0.491 | 102 | 60-140 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | 0.364 | 104 | 70-132 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | 80111027.M |
| Extraction Date : | 10/27/14 |
| Analysis Date : | 10/30/14 |
| Instrument : | Herbie |
| Run : | 1022114 |
| Initials : | MA |

*Printed: 11/14/14 3:19:29 PM*
*APPL Standard LCS*

# Matrix Spike Recoveries

## EPA 8011

APPL ID: **141027W-05593 MS - 191515**
Batch ID: #8011-141027A
Sample ID: AZ05593
Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | Matrix Result ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|
| DBCP | 0.482 | ND | 0.497 | 0.519 | 103 | 108 | 60-140 | 4.3 | 25 |
| EDB | 0.482 | ND | 0.470 | 0.486 | 97.5 | 101 | 60-140 | 3.3 | 25 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | NA | 0.353 | 0.352 | 101 | 101 | 70-132 | | |

Comments: _____

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | 80111027.M | 80111027.M |
| Extraction Date : | 10/27/14 | 10/27/14 |
| Analysis Date : | 10/30/14 | 10/30/14 |
| Instrument : | Herbie | Herbie |
| Run : | 1022120 | 1022121 |
| Initials : | MA | |

*Printed: 11/14/14 3:19:42 PM*
*APPL MSD SCII*

# 8011

Form 4

## Blank Summary

Lab Name: APPL, Inc. SDG No: 74701

Case No: 74701 Date Analyzed: 10/30/14

Matrix: WATER Instrument: Herbie

Blank ID: 141027A-BLK Time Analyzed: 1235

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141027A-BLK | Blank | 1022112 | 10/30/14 1235 |
| 141027A-LCS | Lab Control Spike | 1022114 | 10/30/14 1316 |
| 141027A-MS | Matrix Spike | 1022120 | 10/30/14 1518 |
| 141027A-MSD | Matrix SpikeD | 1022121 | 10/30/14 1539 |
| AZ05593 | RHMW06-GW-01 | 1022122 | 10/30/14 1559 |

Comments: Batch: #8011-141027A

*Printed: 11/14/14 3:19:48 PM*
*Form 4, Blank Summary*

# 8011
# for
# DBCP & EDB Fumigants
# Sample Data

APPL, INC.

# EPA 8011

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW06-GW-01**
Sample Collection Date: 10/21/14

ARF: 74701
**APPL ID: AZ05593**
QCG: #8011-141027A-191515

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| 8011 | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 10/27/14 | 10/30/14 |
| 8011 | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 10/27/14 | 10/30/14 |
| 8011 | SURROGATE: 1,3-DIBROMOPROPANE | 97.6 | 70-132 | | | % | 10/27/14 | 10/30/14 |

Quant Method: 80111027.M
Run #: 1022122
Instrument: Herbie
Sequence: 141022
Dilution Factor: 1
Initials: MA

*Printed: 11/14/14 3:19:49 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022122.D\ECD1A.CH Vial: 22
Signal #2 : G:\HERBIE\DATA\141022\1022122.D\ECD2B.CH
Acq On : 10-30-14 15:59:46 Operator: MA
Sample : AZ05593W10 2/34.54G Inst : Herbie
Misc : soil Multiplr: 1.01
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

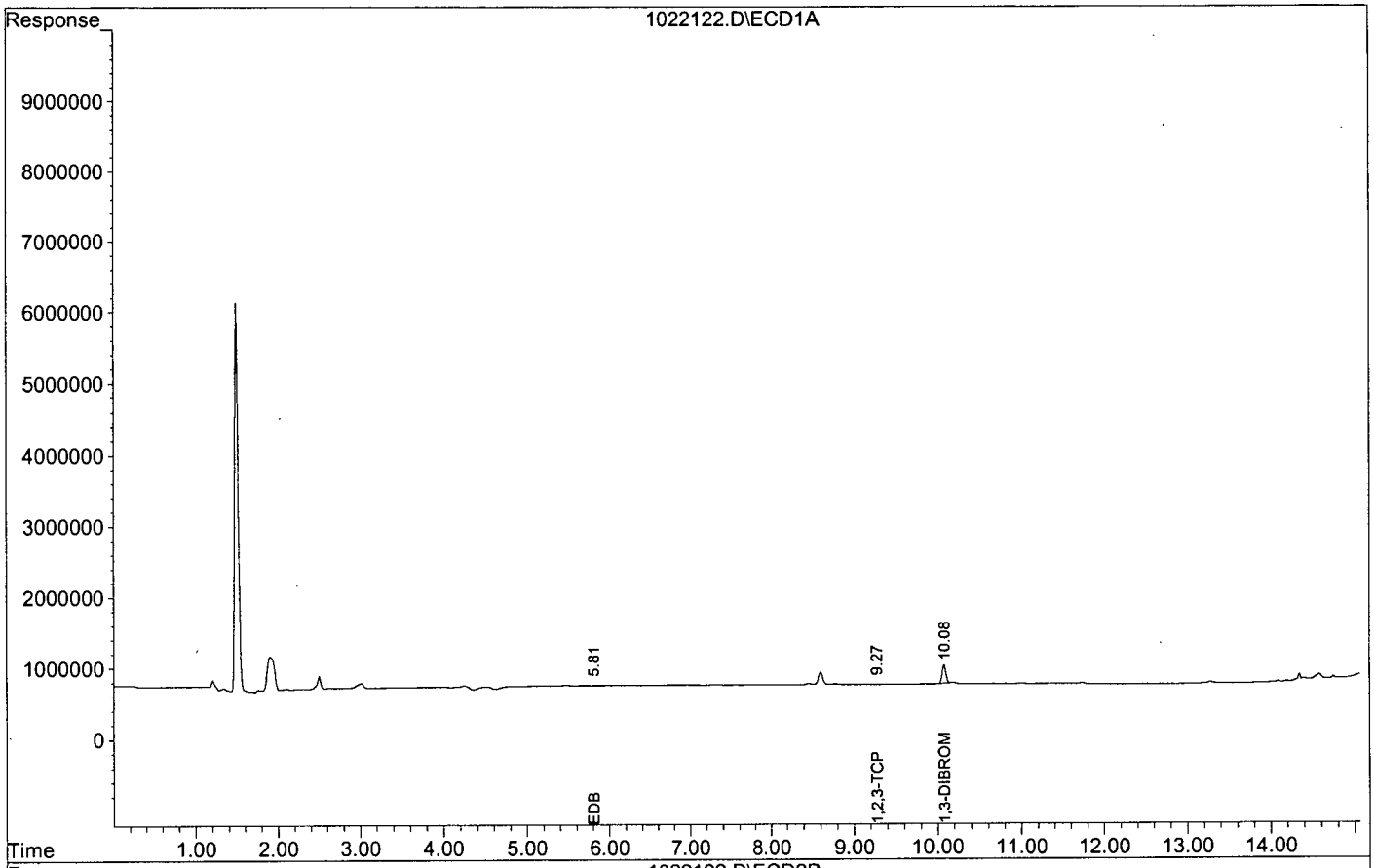
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 257069 | 343454 | 0.346 | 0.348 |
| Spiked Amount 0.355 | | | Recovery | = | 97.56% | 98.12% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.81 | 0.00 | 1263 | 0 | 0.001 | N.D. # |
| 2) TM 1,2,3-TCP | 9.27 | 0.00 | 483 | 0 | 0.003 | N.D. # |
| 4) TM DBCP | 0.00 | 14.11 | 0 | 1682 | N.D. | 0.000 # |
| Target Compounds | | | | | | |

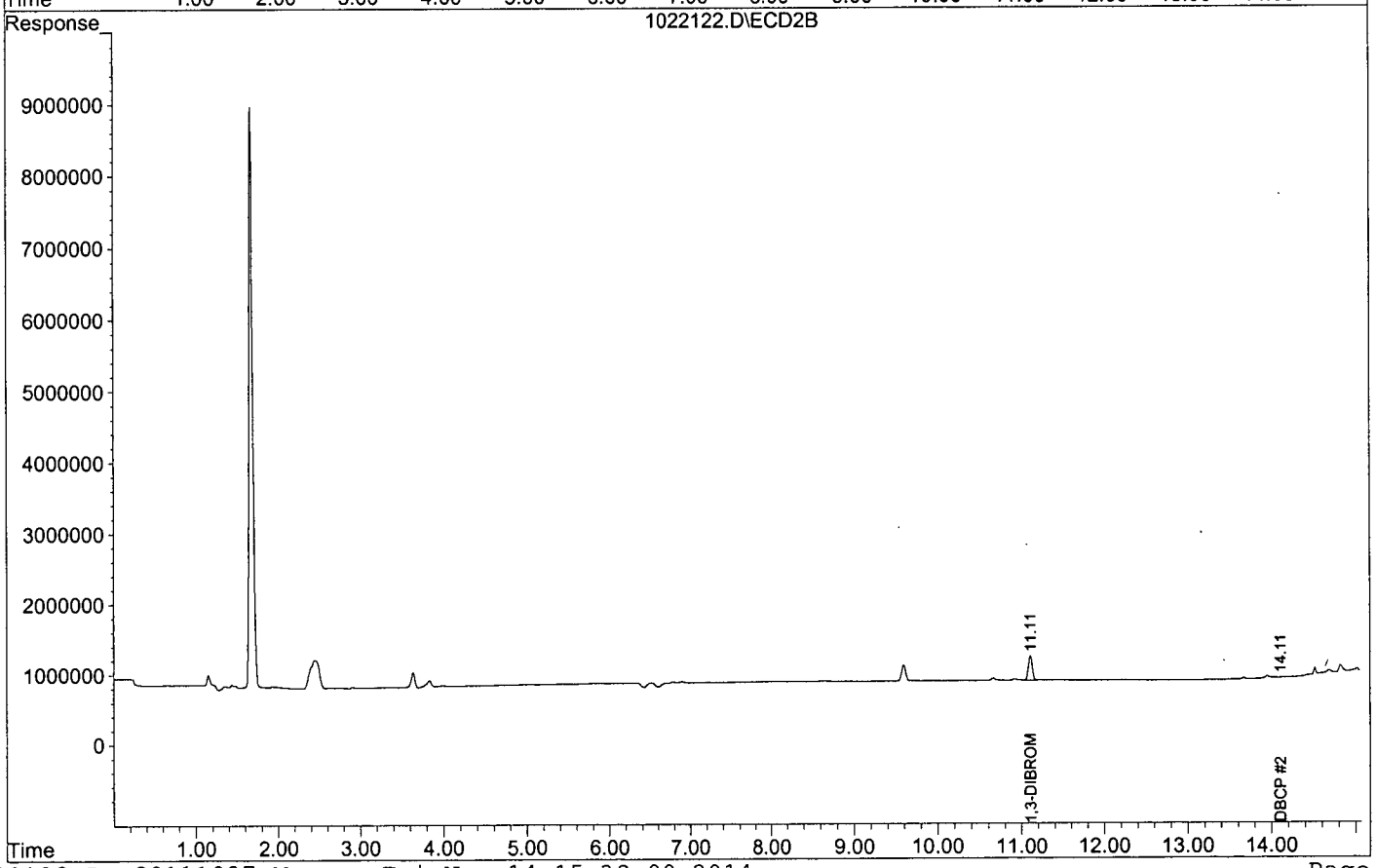
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022122.D
Acq On : 10-30-14 15:59:46
Sample : AZ05593W10 2/34.54G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 22
Operator: MA
Inst : Herbie
Multiplr: 1.01



# 8011
# for
# DBCP & EDB Fumigants
# Calibration Data

APPL, INC.

DBCP/EDB/1,2,3-TCP Analysis by
504 8011 1027

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Soil

SDG No: 74701
Initial Cal. Date: 10/30/14
Instrument: Herbie

Initials: MA

| | | Compound | 1 | 2 | 3 | 4 | 5 | 6 | | | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1022106.D | 1022107.D | 1022108.D | 1022109.D | 1022110.D | 1022111.D | | | | | | | | |
| 1 | TM | EDB | 595765 | 547208 | 481543 | 479920 | 452904 | 437705 | | | | | 499174 | 12 | TM | |
| 2 | TM | 1,2,3-TCP | 47118 | 112491 | 102571 | 104225 | 102452 | 98076 | | | | | 94489 | 25 | TM | NT |
| 3 | S | 1,3-DIBROMOPROPANE(S) | 432382 | 417897 | 364507 | 363434 | 348947 | 334319 | | | | | 376914 | 10 | S | |
| 4 | TM | DBCP | 1446588 | 1276064 | 1188817 | 1204223 | 1179283 | 1158534 | | | | | 1242251 | 8.7 | TM | |
| 5 | | Signal #2 | | | | | | | | | | | | | | |
| 6 | TM | EDB #2 | 855176 | 796248 | 727444 | 754469 | 723203 | 700367 | | | | | 759485 | 7.5 | TM | |
| 7 | TM | 1,2,3-TCP #2 | 33412 | 152616 | 139687 | 139903 | 135633 | 130487 | | | | | 121956 | 36 | TM | NT |
| 8 | S | 1,3-DIBROMOPROPANE(S) #2 | 519235 | 542629 | 489701 | 494323 | 486242 | 466663 | | | | | 499799 | 5.4 | S | |
| 9 | TM | DBCP #2 | 2186294 | 2340950 | 2153601 | 2312769 | 2302967 | 2293735 | | | | | 2265053 | 3.4 | TM | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | |

3.1029252

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022106.D\ECD1A.CH Vial: 6
Signal #2 : G:\HERBIE\DATA\141022\1022106.D\ECD2B.CH
Acq On : 10-30-14 10:34:12 Operator: MA
Sample : 8011-1 10/27/14 2/33.04G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:32 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

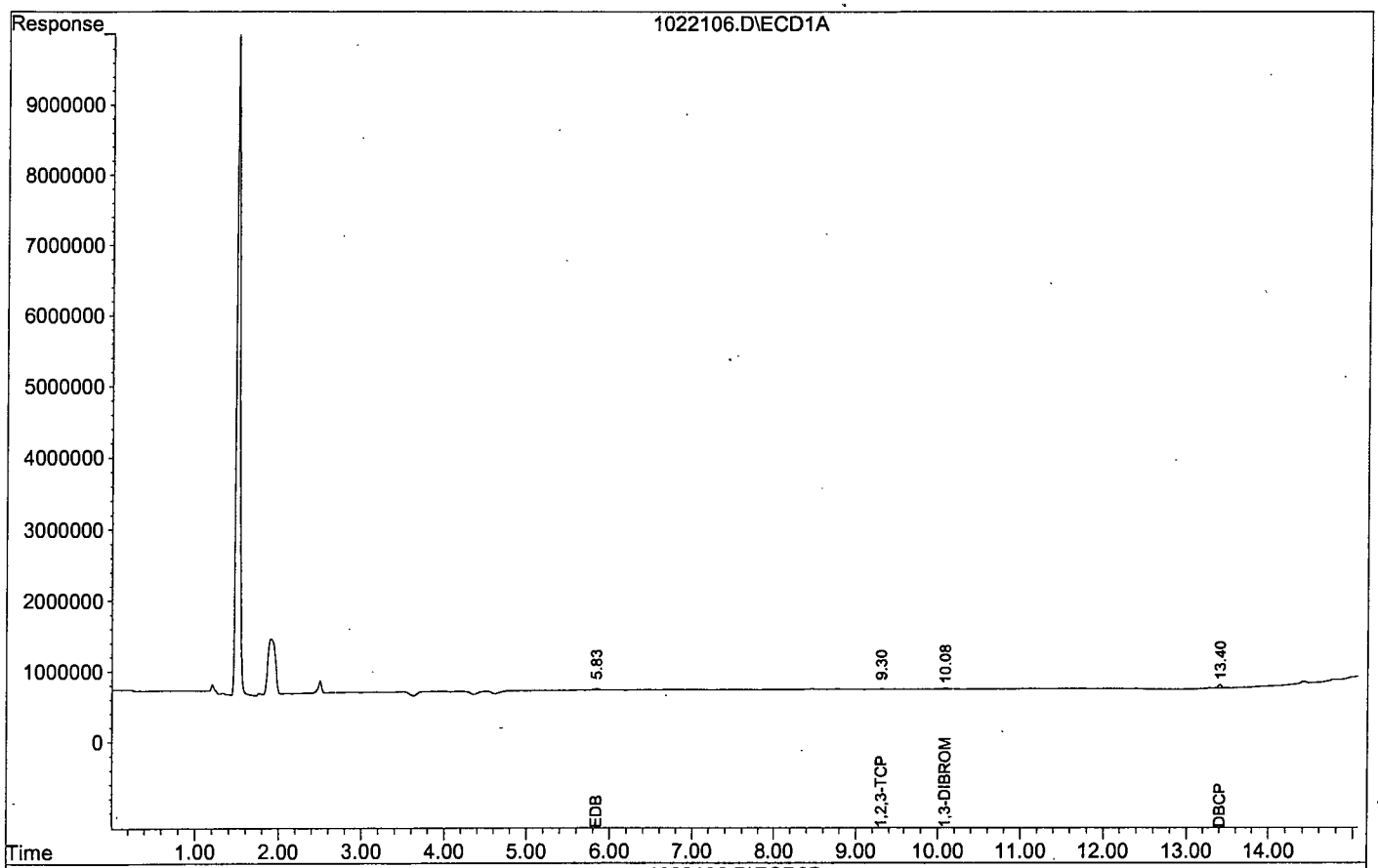
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 14701 | 17654 | 0.020 | 0.018 |
| Spiked Amount 0.350 | | | Recovery | = | 5.71% | 5.14% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.83 | 7.28 | 20256 | 29076 | 0.020 | 0.019 |
| 2) TM 1,2,3-TCP | 9.30 | 10.51 | 1602 | 1136 | 0.008 | 0.005 # |
| 4) TM DBCP | 13.40 | 14.13 | 49184 | 74334 | 0.020 | 0.016 |
| Target Compounds | | | | | | |

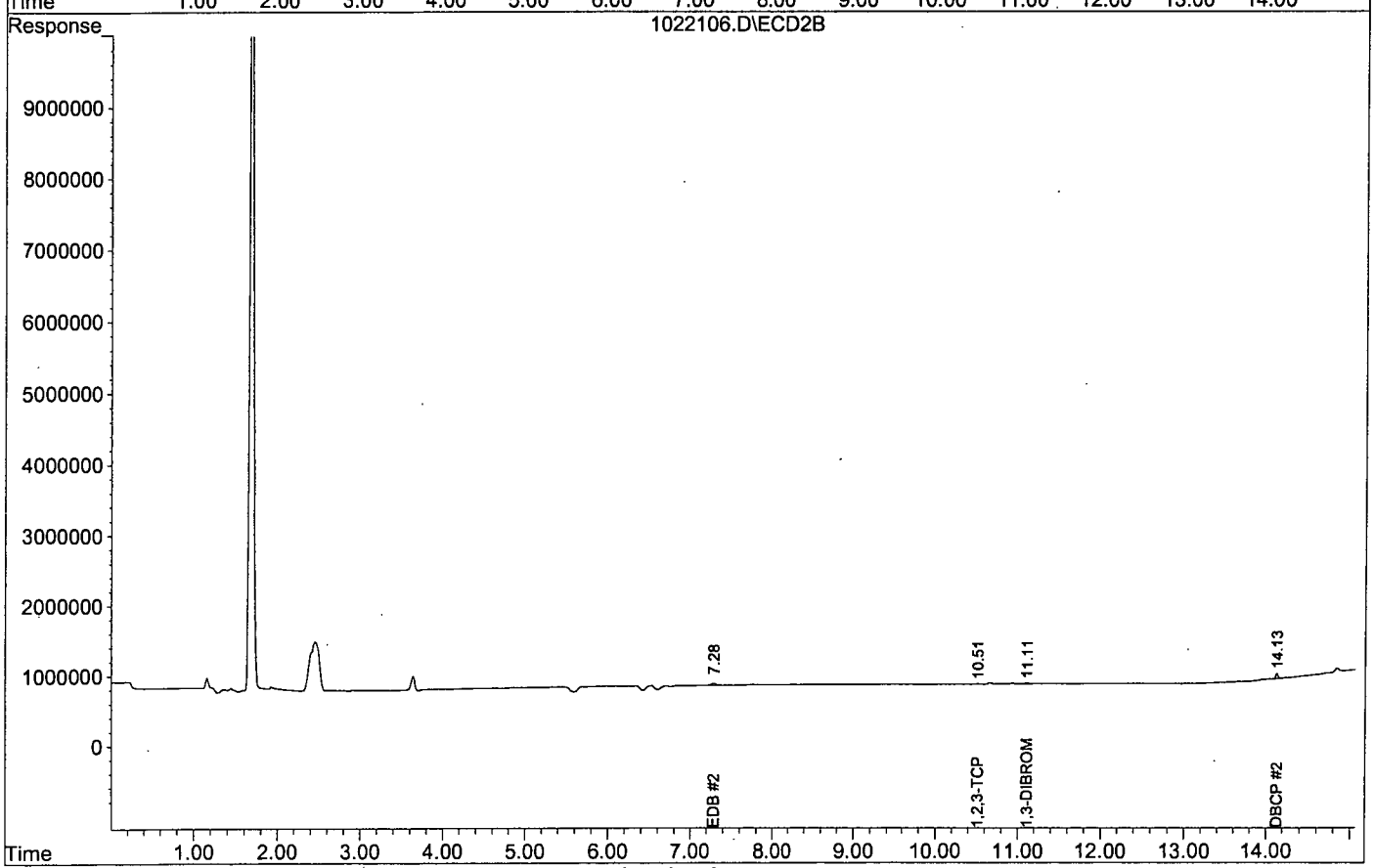
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022106.D
Acq On : 10-30-14 10:34:12
Sample : 8011-1 10/27/14 2/33.04G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 6
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022107.D\ECD1A.CH Vial: 7
Signal #2 : G:\HERBIE\DATA\141022\1022107.D\ECD2B.CH
Acq On : 10-30-14 10:54:24 Operator: MA
Sample : 8011-2 10/27/14 2/33.31G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:32 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

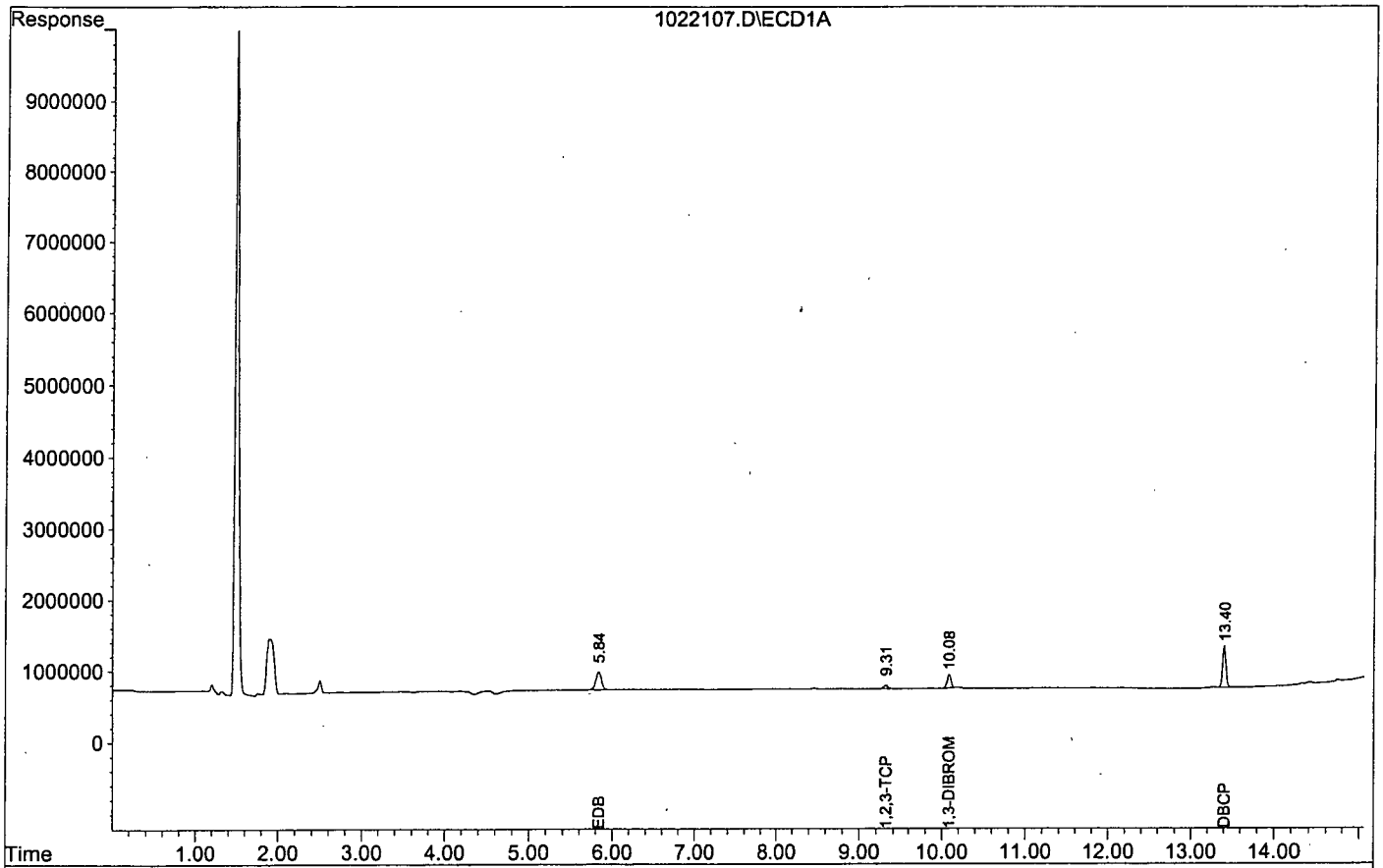
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 190561 | 247439 | 0.253 | 0.248 |
| Spiked Amount 0.350 | | | Recovery | = | 72.29% | 70.86% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 249527 | 363089 | 0.250 | 0.239 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 51296 | 69593 | 0.271 | 0.285 |
| 4) TM DBCP | 13.40 | 14.13 | 581885 | 1067473 | 0.234 | 0.236 |
| Target Compounds | | | | | | |

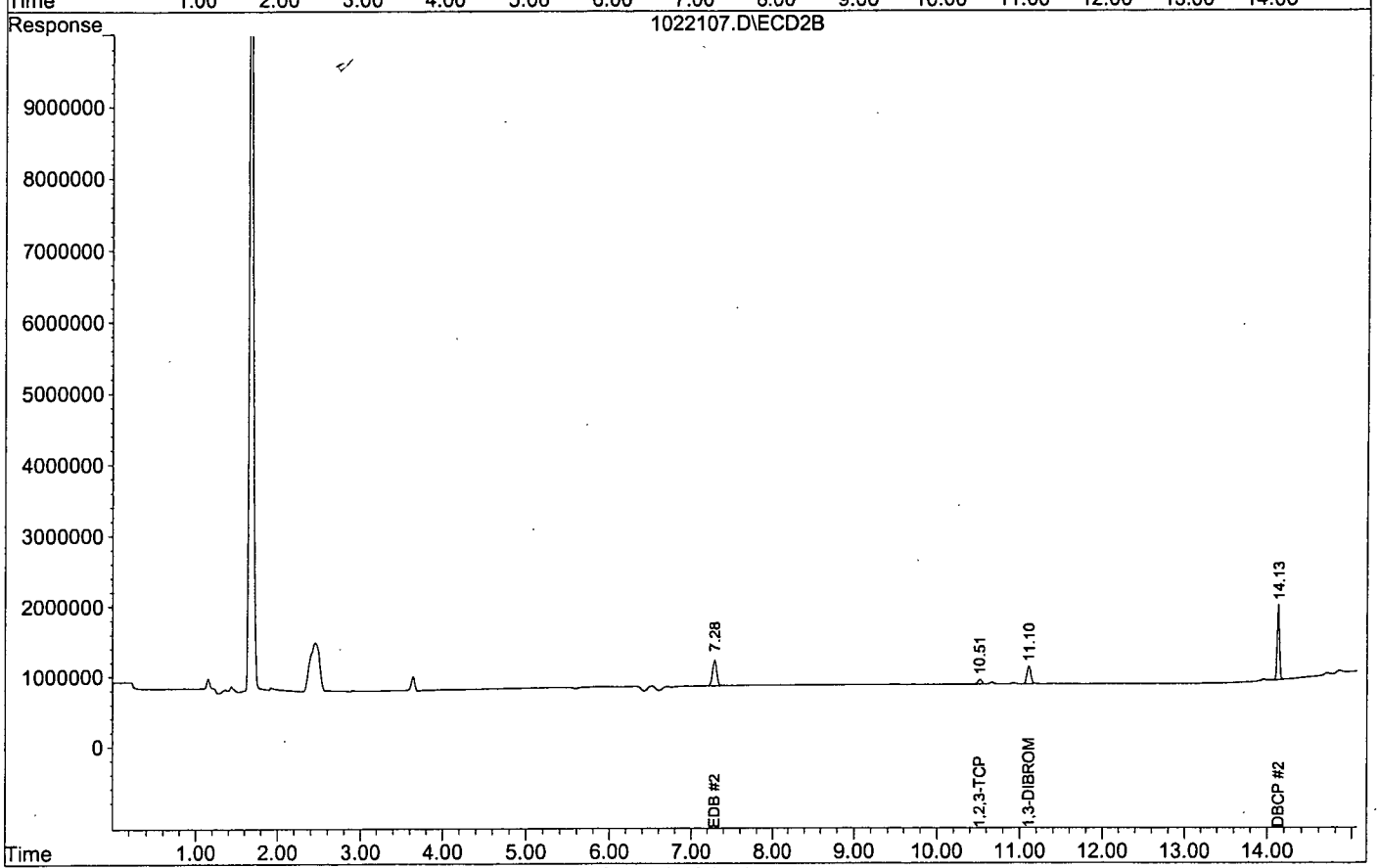
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022107.D
Acq On : 10-30-14 10:54:24
Sample : 8011-2 10/27/14 2/33.31G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 7
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022108.D\ECD1A.CH Vial: 8
Signal #2 : G:\HERBIE\DATA\141022\1022108.D\ECD2B.CH
Acq On : 10-30-14 11:14:47 Operator: MA
Sample : 8011-3 10/27/14 2/32.25G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

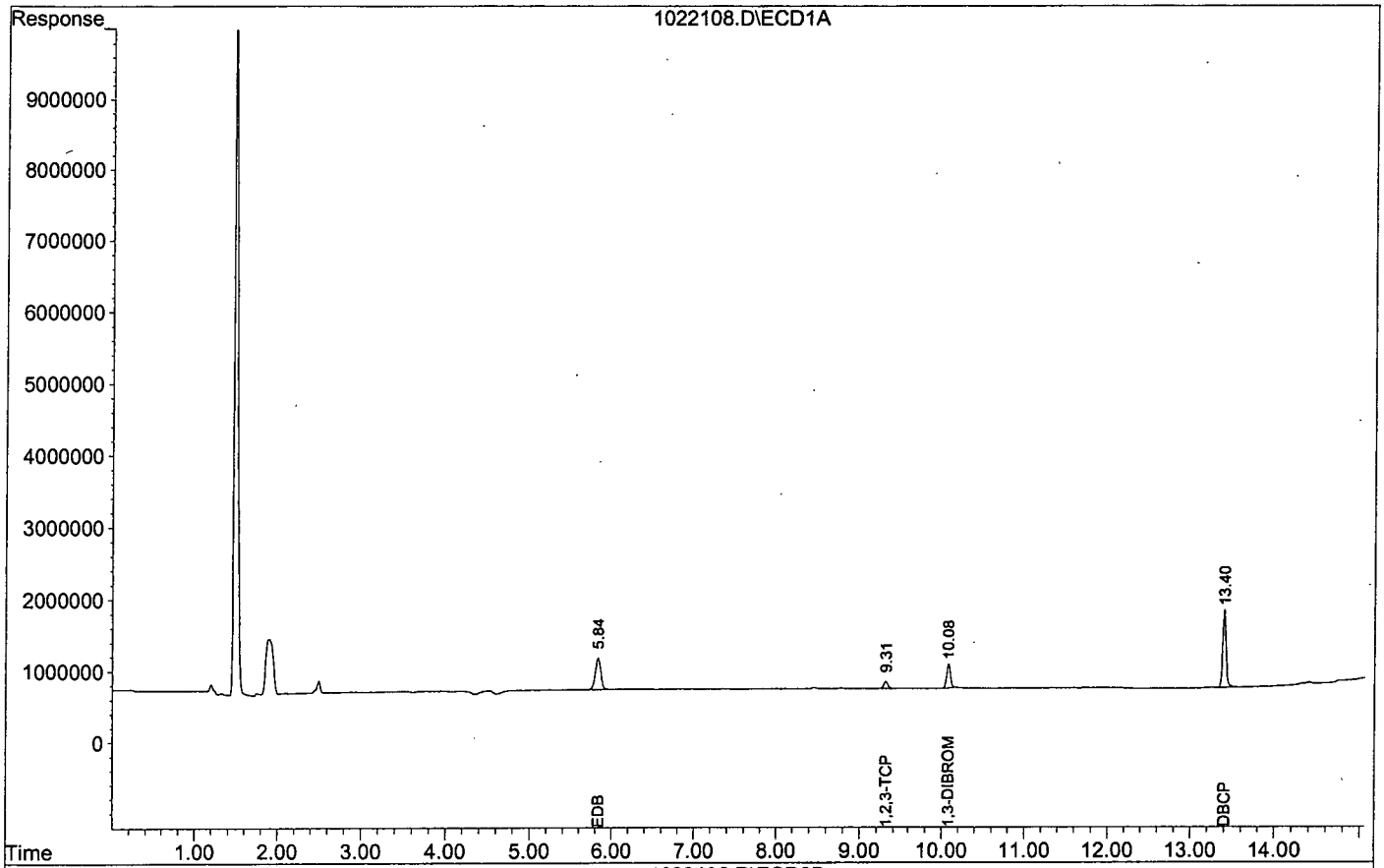
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 333159 | 447587 | 0.442 | 0.448 |
| Spiked Amount 0.350 | | | Recovery | = | 126.29% | 128.00% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 440130 | 664884 | 0.441 | 0.438 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 93750 | 127674 | 0.496 | 0.523 |
| 4) TM DBCP | 13.40 | 14.13 | 1086579 | 1968391 | 0.437 | 0.435 |
| Target Compounds | | | | | | |

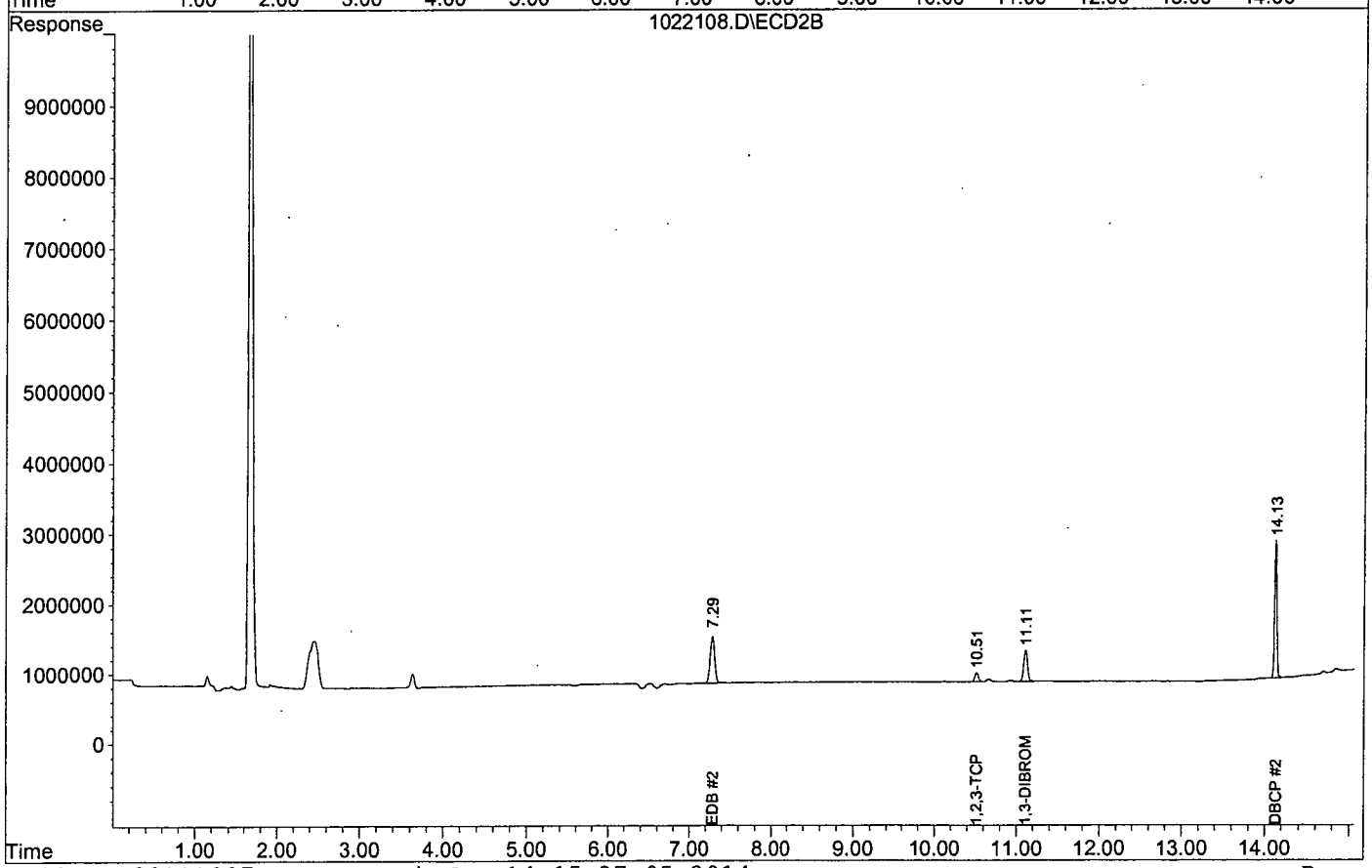
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022108.D
Acq On : 10-30-14 11:14:47
Sample : 8011-3 10/27/14 2/32.25G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 8
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022109.D\ECD1A.CH Vial: 9
Signal #2 : G:\HERBIE\DATA\141022\1022109.D\ECD2B.CH
Acq On : 10-30-14 11:35:01 Operator: MA
Sample : 8011-4 10/27/14 2/32.52G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

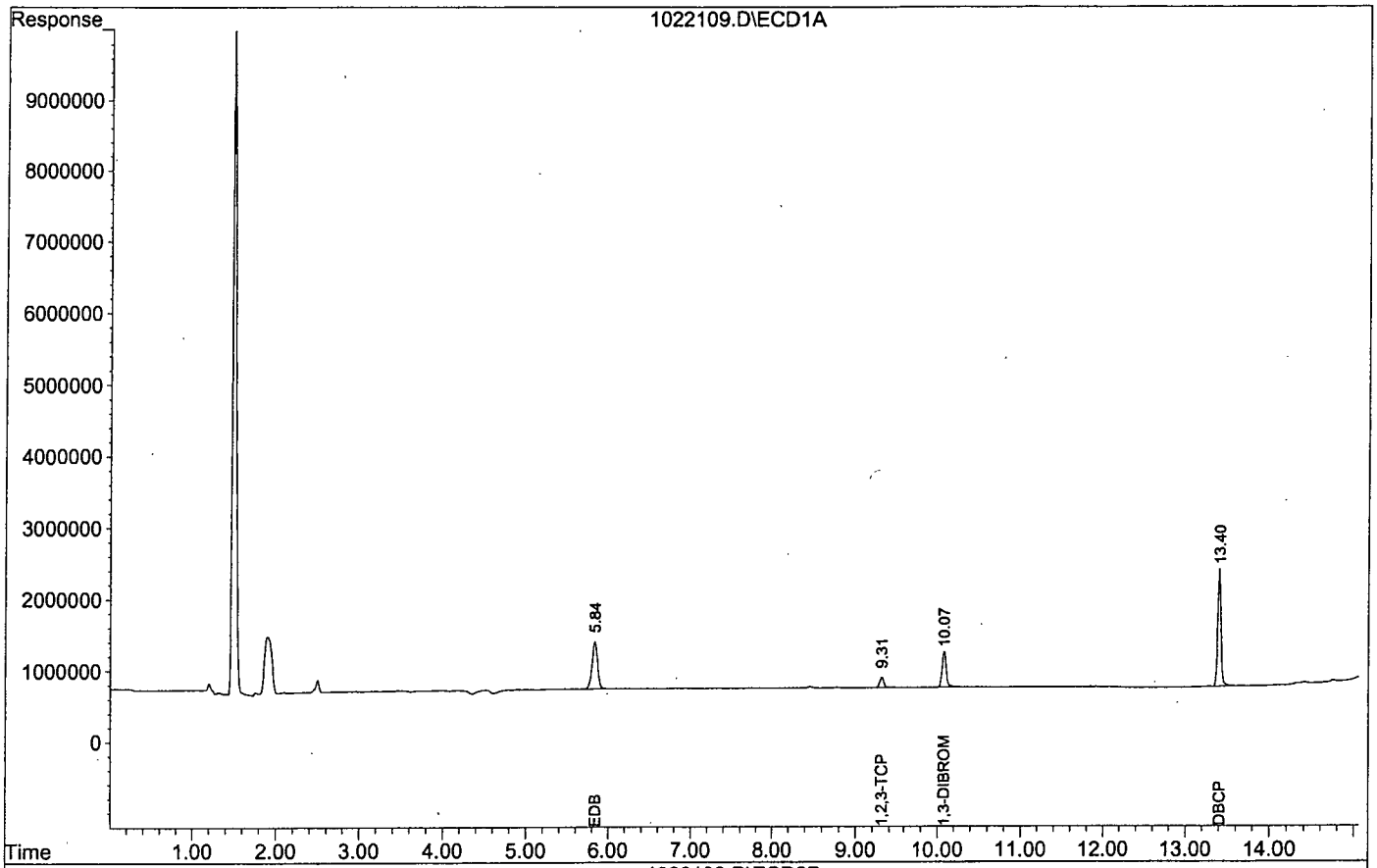
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.10 | 497904 | 677222 | 0.661 | 0.677 |
| Spiked Amount 0.350 | | | Recovery | = | 188.86% | 193.43% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 657490 | 1033623 | 0.659 | 0.680 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 142788 | 191667 | 0.756 | 0.786 |
| 4) TM DBCP | 13.40 | 14.13 | 1649785 | 3168494 | 0.664 | 0.699 |
| Target Compounds | | | | | | |

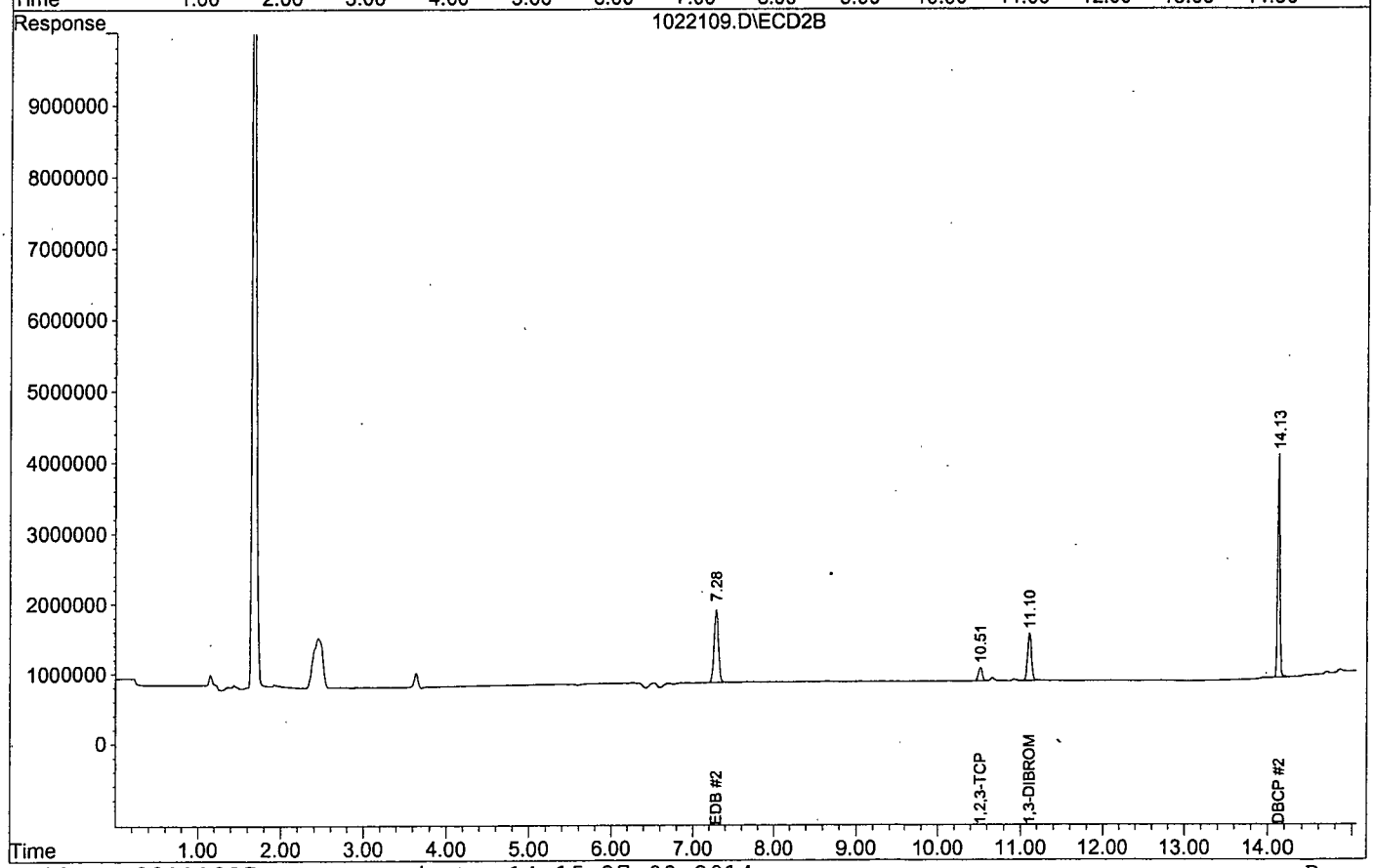
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022109.D
Acq On : 10-30-14 11:35:01
Sample : 8011-4 10/27/14 2/32.52G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 9
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022110.D\ECD1A.CH Vial: 10
Signal #2 : G:\HERBIE\DATA\141022\1022110.D\ECD2B.CH
Acq On : 10-30-14 11:55:17 Operator: MA
Sample : 8011-5 10/27/14 2/33.63G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

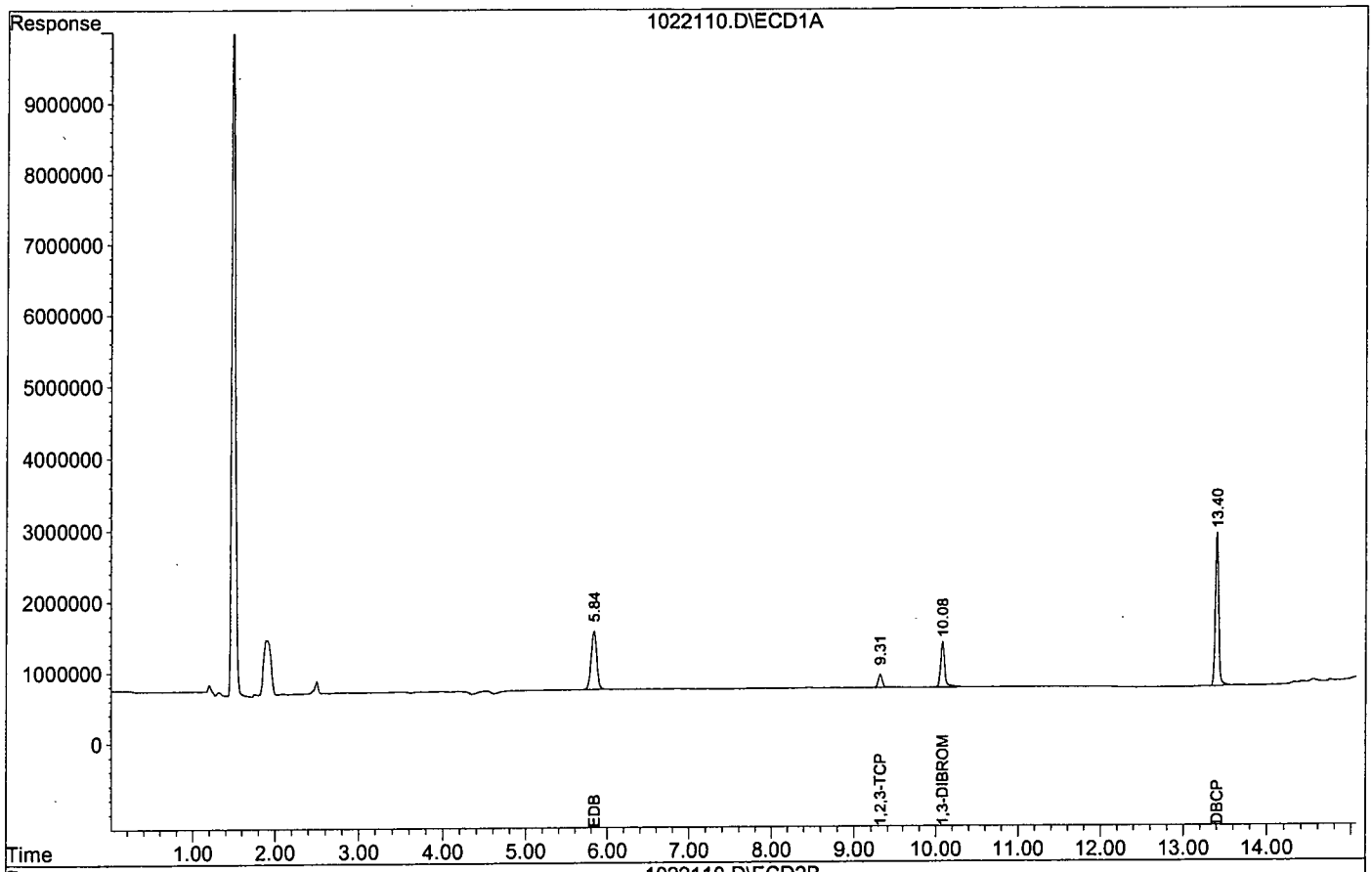
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 637875 | 888851 | 0.846 | 0.889 |
| Spiked Amount 0.350 | | | Recovery | = | 241.71% | 254.00% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 827908 | 1322015 | 0.829 | 0.870 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 187282 | 247937 | 0.991 | 1.016 |
| 4) TM DBCP | 13.40 | 14.13 | 2155730 | 4209824 | 0.868 | 0.929 |
| Target Compounds | | | | | | |

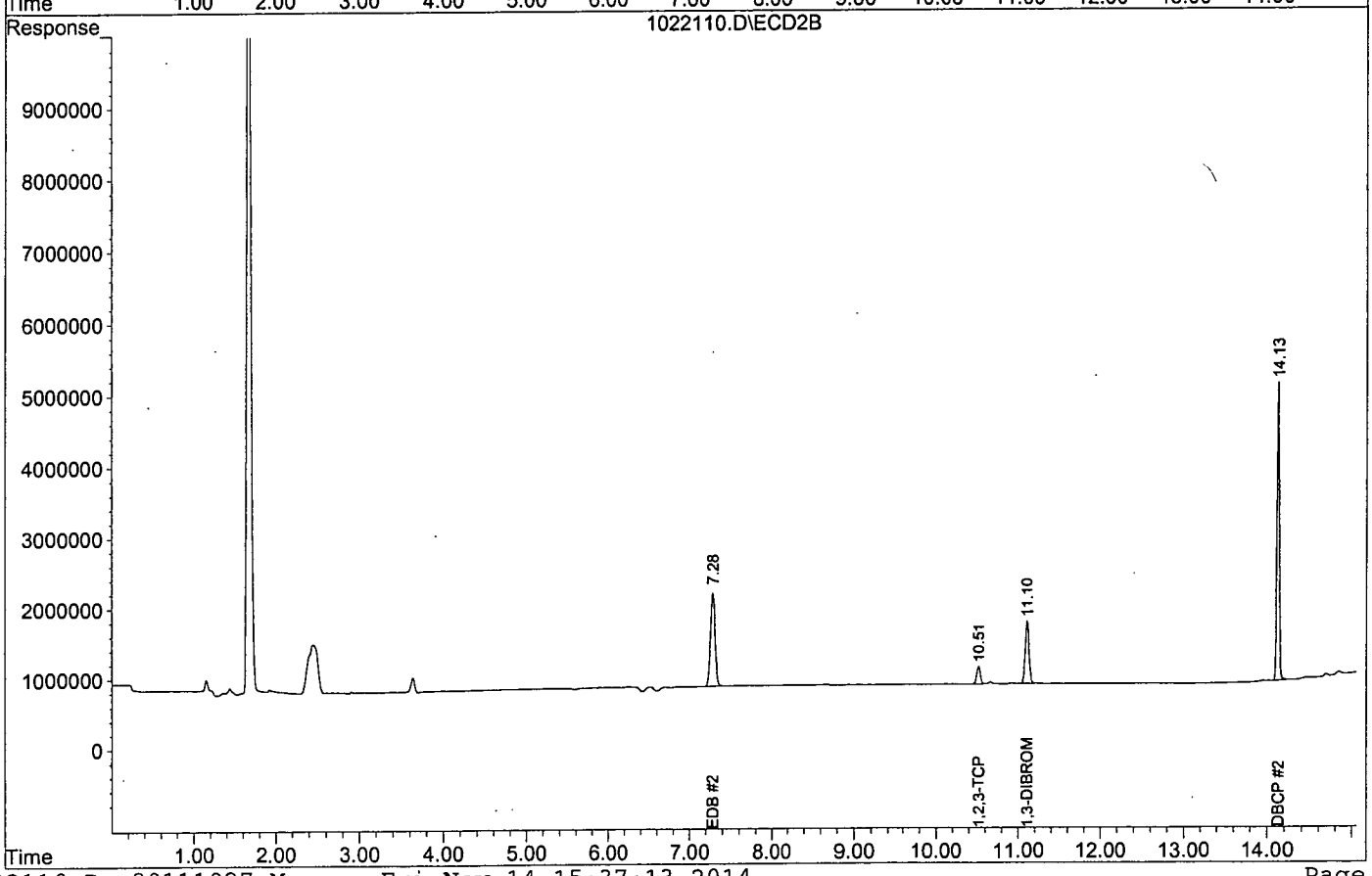
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022110.D
Acq On : 10-30-14 11:55:17
Sample : 8011-5 10/27/14 2/33.63G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 10
Operator: MA
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022111.D\ECD1A.CH Vial: 11
Signal #2 : G:\HERBIE\DATA\141022\1022111.D\ECD2B.CH
Acq On : 10-30-14 12:15:39 Operator: MA
Sample : 8011-6 10/27/14 2/31.65G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

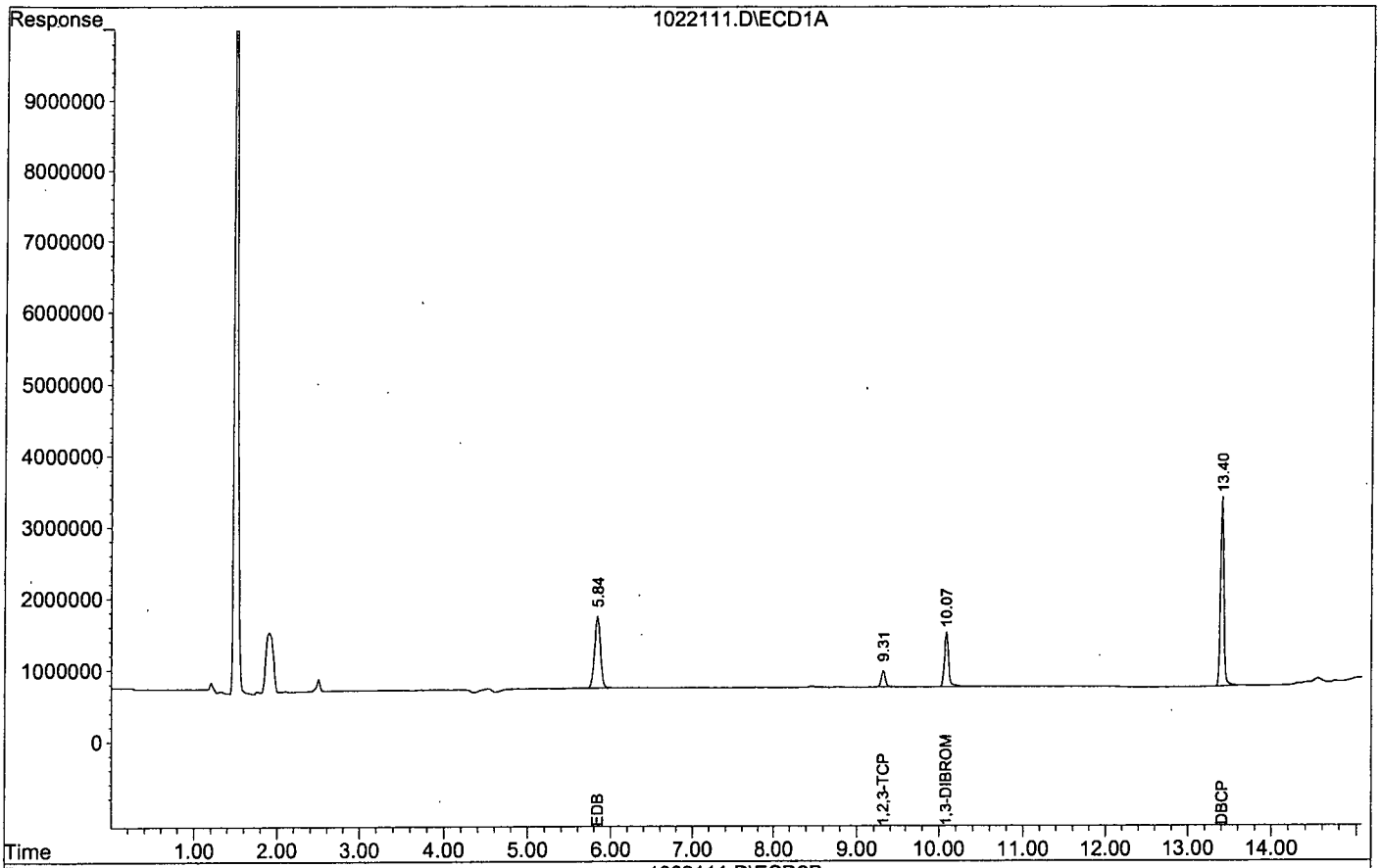
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.10 | 763585 | 1065858 | 1.013 | 1.066 |
| Spiked Amount 0.350 | | | Recovery | = | 289.43% | 304.57% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 999718 | 1599638 | 1.001 | 1.053 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 224005 | 298032 | 1.185 | 1.222 |
| 4) TM DBCP | 13.40 | 14.13 | 2646091 | 5238891 | 1.065 | 1.156 |
| Target Compounds | | | | | | |

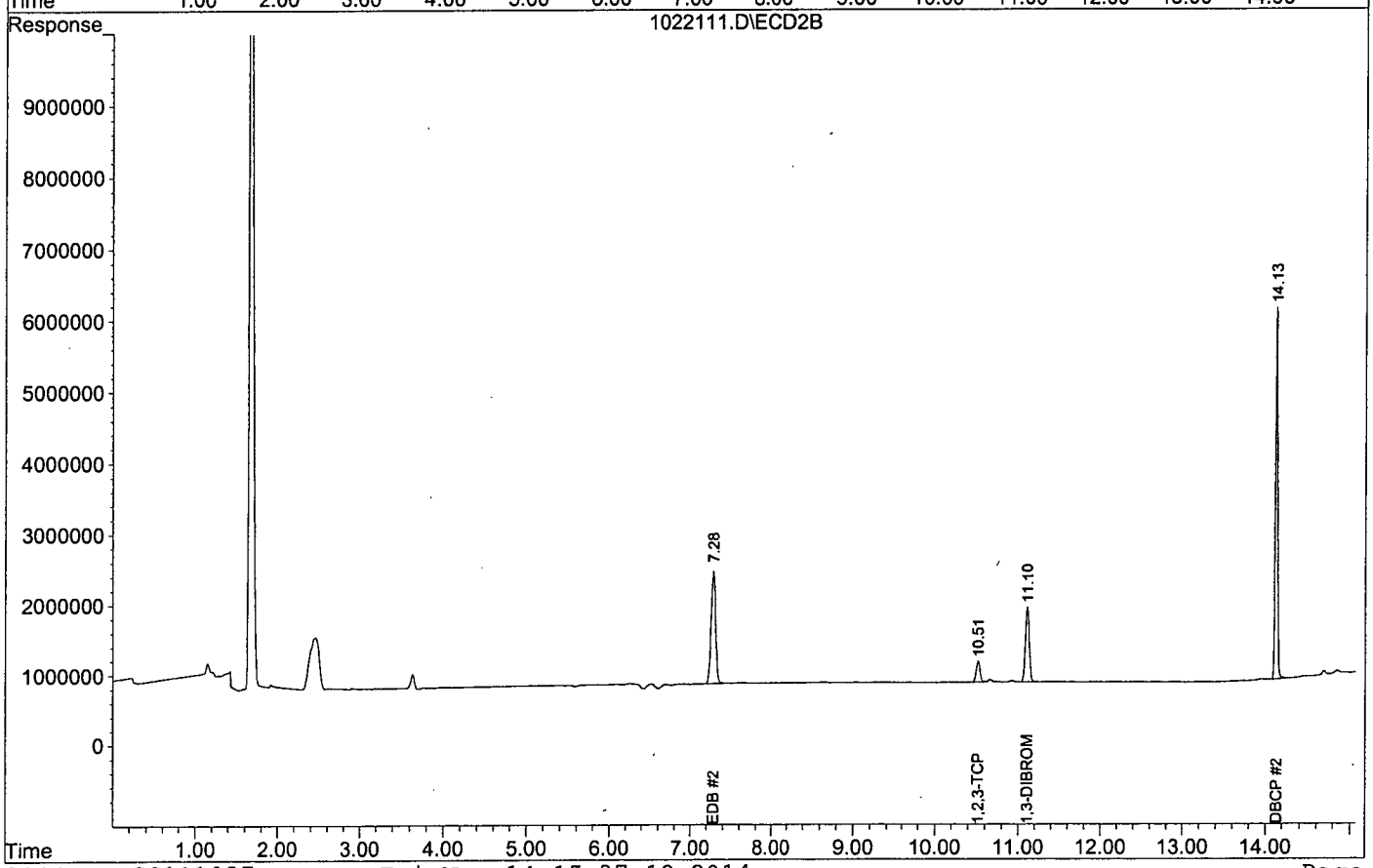
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022111.D
Acq On : 10-30-14 12:15:39
Sample : 8011-6 10/27/14 2/31.65G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 11
Operator: MA
Inst : Herbie
Multiplr: 1.00



DBCP/EDB/1,2,3-TCP Analysis by
8011 1027

Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Soil

SDG No: 74701
Date Analyzed: 10/30/14
Instrument: Herbie
Initial Cal. Date: 10/30/14
Data File: 1022114.D

| | | Compound | MEAN | CCRF | %D | %Drift | | |
|---|---|---|---|---|---|---|---|---|
| 1 | TM | EDB | 499174 | 505257 | 1.2 | TM | | |
| 2 | TM | 1,2,3-TCP | 94489 | 112004 | 19 | TM | | |
| | TM | DBCP | 1242250 | 1297130 | 4.4 | TM | | |
| 1 | signal #2 | | | | | | | |
| 2 | TM | EDB | 759485 | 777221 | 2.3 | TM | | |
| 3 | TM | 1,2,3-TCP | 121956 | 151336 | 24 | TM | | *NT |
| 4 | TM | DBCP | 2265050 | 2423580 | 7.0 | TM | | |
| 5 | | | | | | | | |
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| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | | | |
| 36 | | | | | | | | |
| 37 | | | | | | | | |
| | | Average | | | 11.6 | | | |

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022114.D\ECD1A.CH Vial: 14
Signal #2 : G:\HERBIE\DATA\141022\1022114.D\ECD2B.CH
Acq On : 10-30-14 13:16:33 Operator: MA
Sample : 141027A LCS-2 2/32.96G Inst : Herbie
Misc : soil Multiplr: 1.06
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 258654 | 346347 | 0.364 | 0.368 |
| Spiked Amount 0.372 | | | Recovery | = | 97.94% | 99.01% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 461805 | 710380 | 0.491 | 0.497 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 102372 | 138321 | 0.575 | 0.602 |
| 4) TM DBCP | 13.40 | 14.13 | 1185573 | 2215148 | 0.507 | 0.519 |

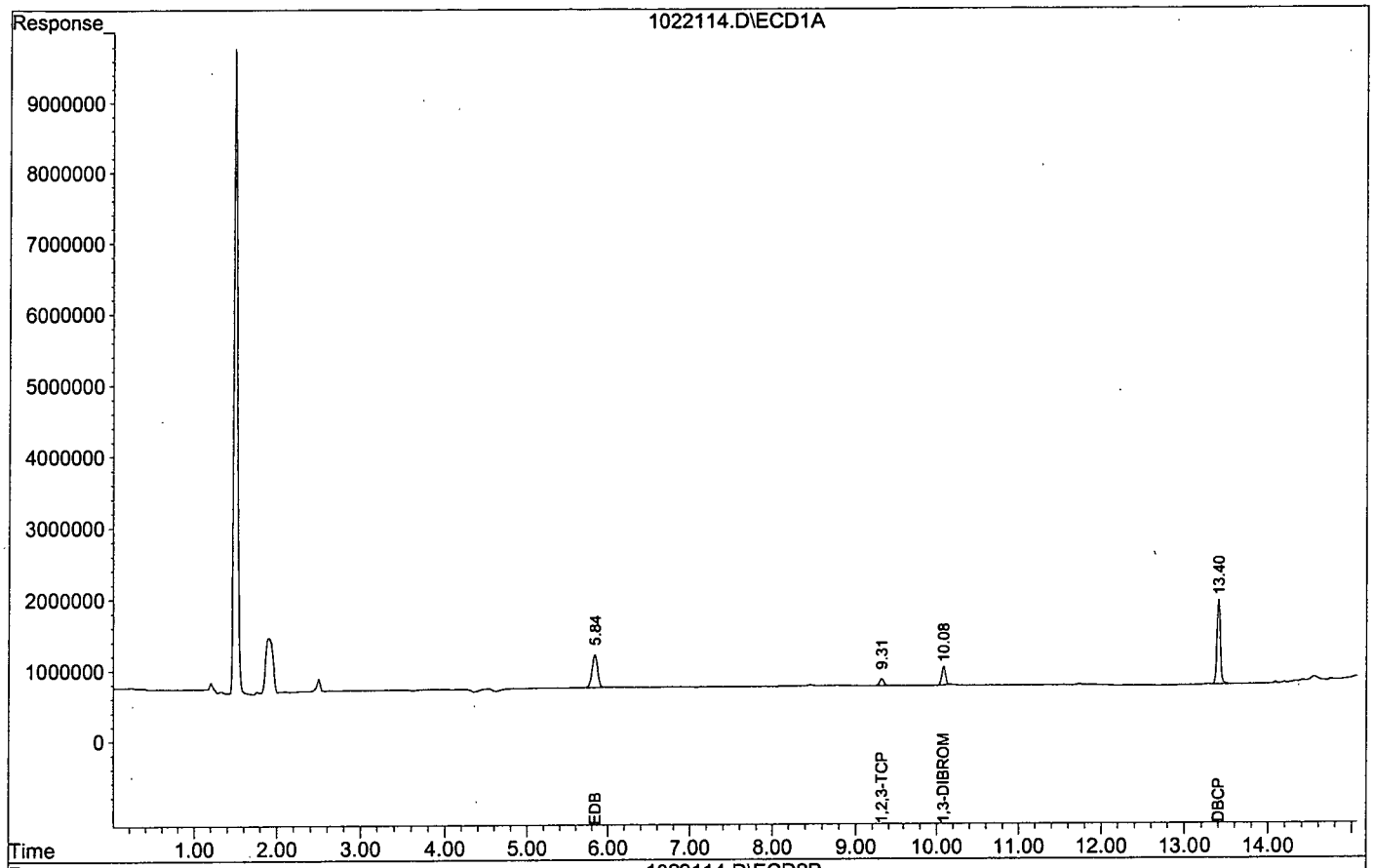
Target Compounds

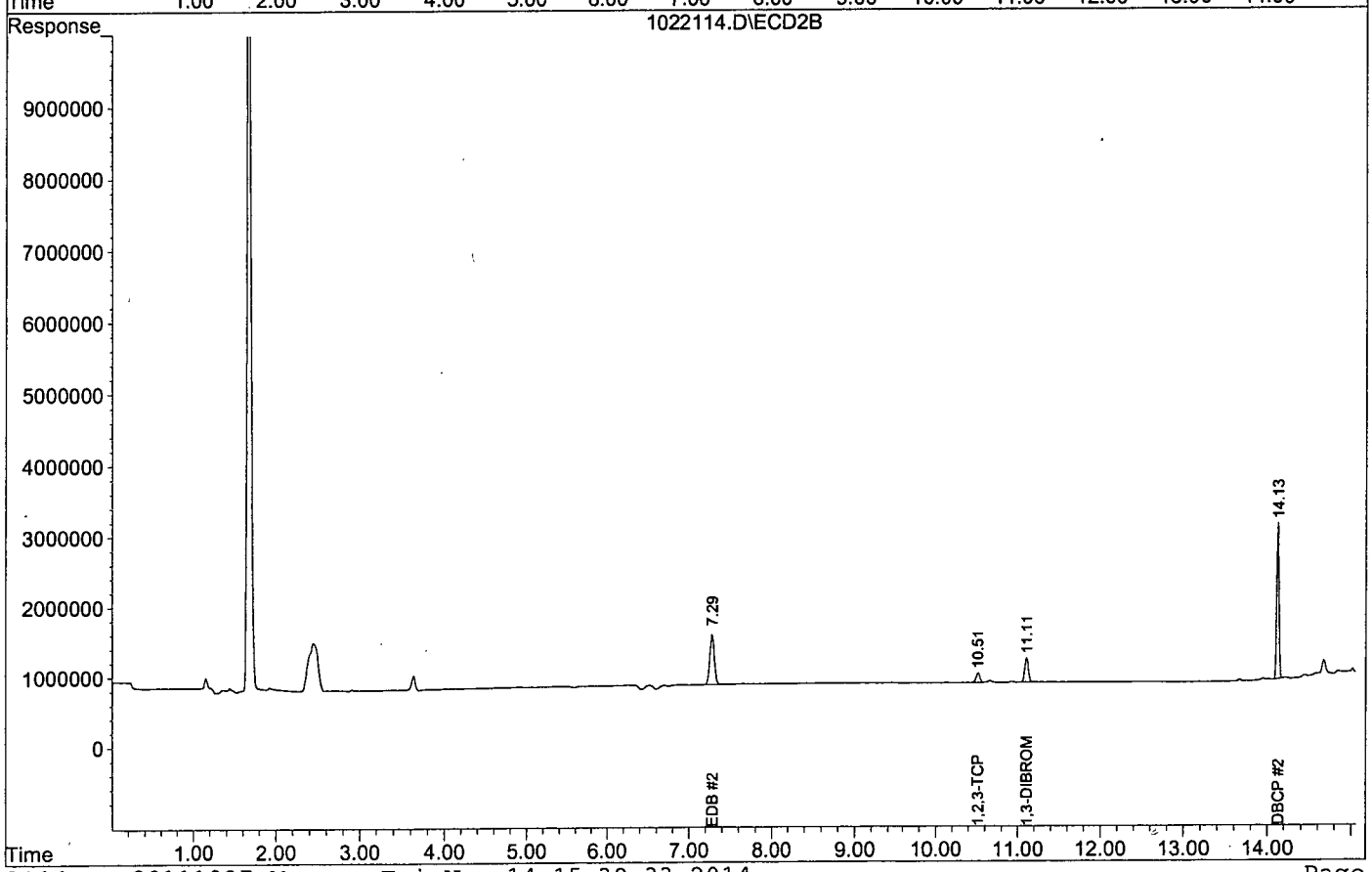
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022114.D
Acq On : 10-30-14 13:16:33
Sample : 141027A LCS-2 2/32.96G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 14
Operator: MA
Inst : Herbie
Multiplr: 1.06



DBCP/EDB/1,2,3-TCP Analysis by
8011 1027

Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 74701
Date Analyzed: 10/30/14
Instrument: Herbie
Initial Cal. Date: 10/30/14
Data File: 1022124.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | TM | EDB | 499174 | 479218 | 4.0 | TM | |
| 2 | TM | 1,2,3-TCP | 94489 | 104880 | 11 | TM | |
| 3 | S | 1,3-DIBROMOPROPANE(S) | 376914 | 381358 | 1.2 | S | |
| 4 | TM | DBCP | 1242250 | 1220540 | 1.7 | TM | |
| 5 | signal #2 | | | | | | |
| 6 | TM | EDB | 759485 | 734601 | 3.3 | TM | |
| 7 | TM | 1,2,3-TCP | 121956 | 142524 | 17 | TM | |
| 8 | S | 1,3-DIBROMOPROPANE(S) | 499799 | 499646 | 0.03 | S | |
| 9 | TM | DBCP | 2265050 | 2257100 | 0.35 | TM | |
| 10 | | | | | | | |
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| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | #REF! | | |

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022124.D\ECD1A.CH Vial: 24
Signal #2 : G:\HERBIE\DATA\141022\1022124.D\ECD2B.CH
Acq On : 10-30-14 16:40:41 Operator: MA
Sample : 8011-3 10/27/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

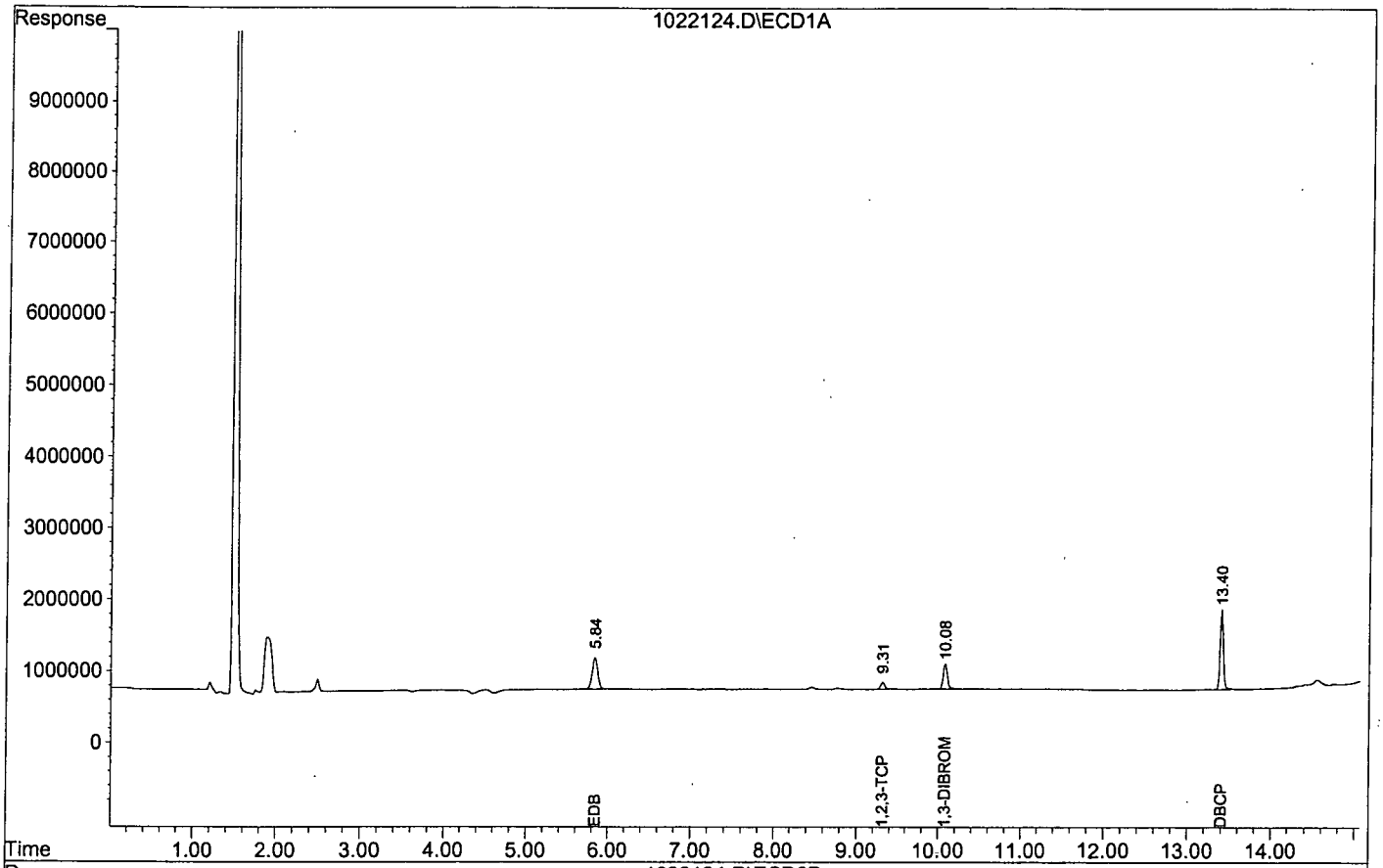
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 348561 | 456676 | 0.462 | 0.457 |
| Spiked Amount 0.350 | | | Recovery | = | 132.00% | 130.57% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 438005 | 671425 | 0.439 | 0.442 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 95860 | 130267 | 0.507 | 0.534 |
| 4) TM DBCP | 13.40 | 14.13 | 1115571 | 2062985 | 0.449 | 0.455 |
| Target Compounds | | | | | | |

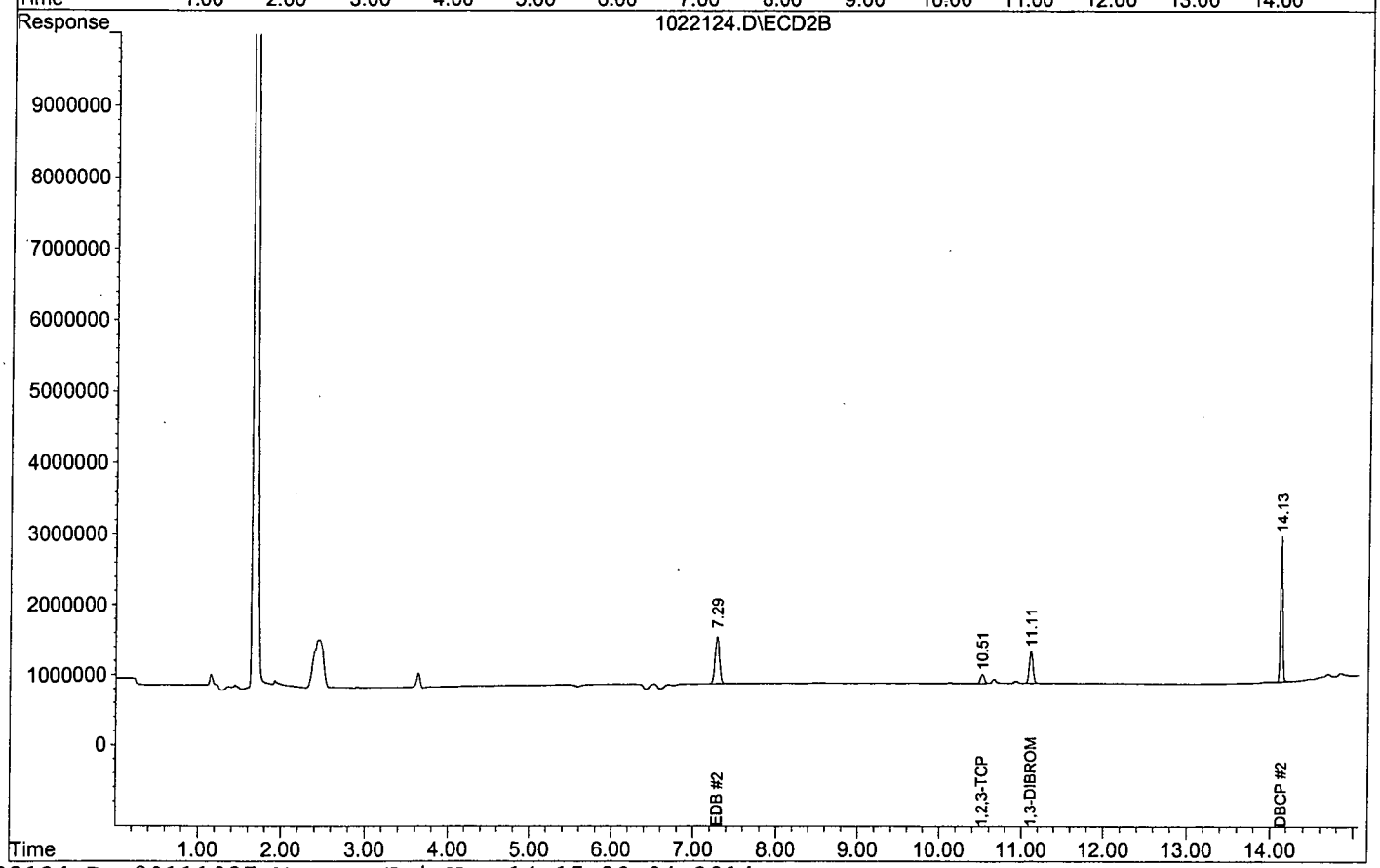
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022124.D
Acq On : 10-30-14 16:40:41
Sample : 8011-3 10/27/14
Misc :
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 24
Operator: MA
Inst : Herbie
Multiplr: 1.00



# 8011
# for
# DBCP & EDB Fumigants
# Raw Data

APPL, INC.

# Method Blank
## EPA 8011

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141027W-05593 - 191515**
Batch ID: #8011-141027A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 10/27/14 | 10/30/14 |
| BLANK | SURROGATE: 1,3-DIBROMOPRO | 99.0 | 70-132 | | | % | 10/27/14 | 10/30/14 |

Quant Method:80111027.M
Run #:1022112
Instrument:Herbie
Sequence:141022
Initials:MA

*GC SC-Blank-REG MDLs*
*Printed: 11/14/14 2:57:13 PM*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022112.D\ECD1A.CH Vial: 12
Signal #2 : G:\HERBIE\DATA\141022\1022112.D\ECD2B.CH
Acq On : 10-30-14 12:35:52 Operator: MA
Sample : 141027A BLK 2/32.34G Inst : Herbie
Misc : soil Multiplr: 1.08
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

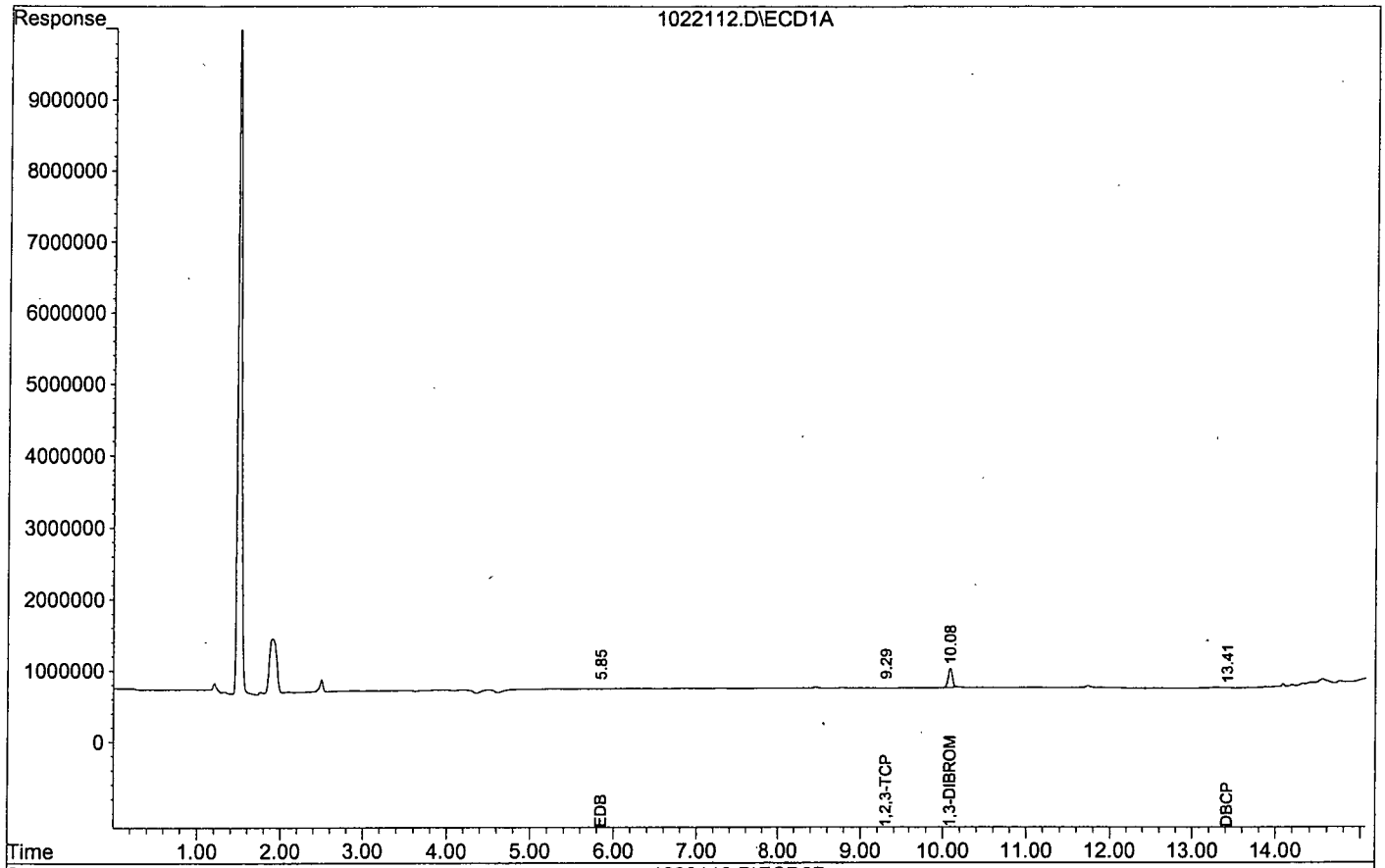
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 261484 | 351218 | 0.375 | 0.380 |
| Spiked Amount 0.379 | | | Recovery | = | 99.00% | 100.32% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.85 | 7.29 | 1201 | 1019 | 0.001 | 0.001 # |
| 2) TM 1,2,3-TCP | 9.29 | 10.52 | 772 | 1400 | 0.004 | 0.006 # |
| 4) TM DBCP | 13.41 | 0.00 | 1690 | 0 | 0.001 | N.D. # |
| Target Compounds | | | | | | |

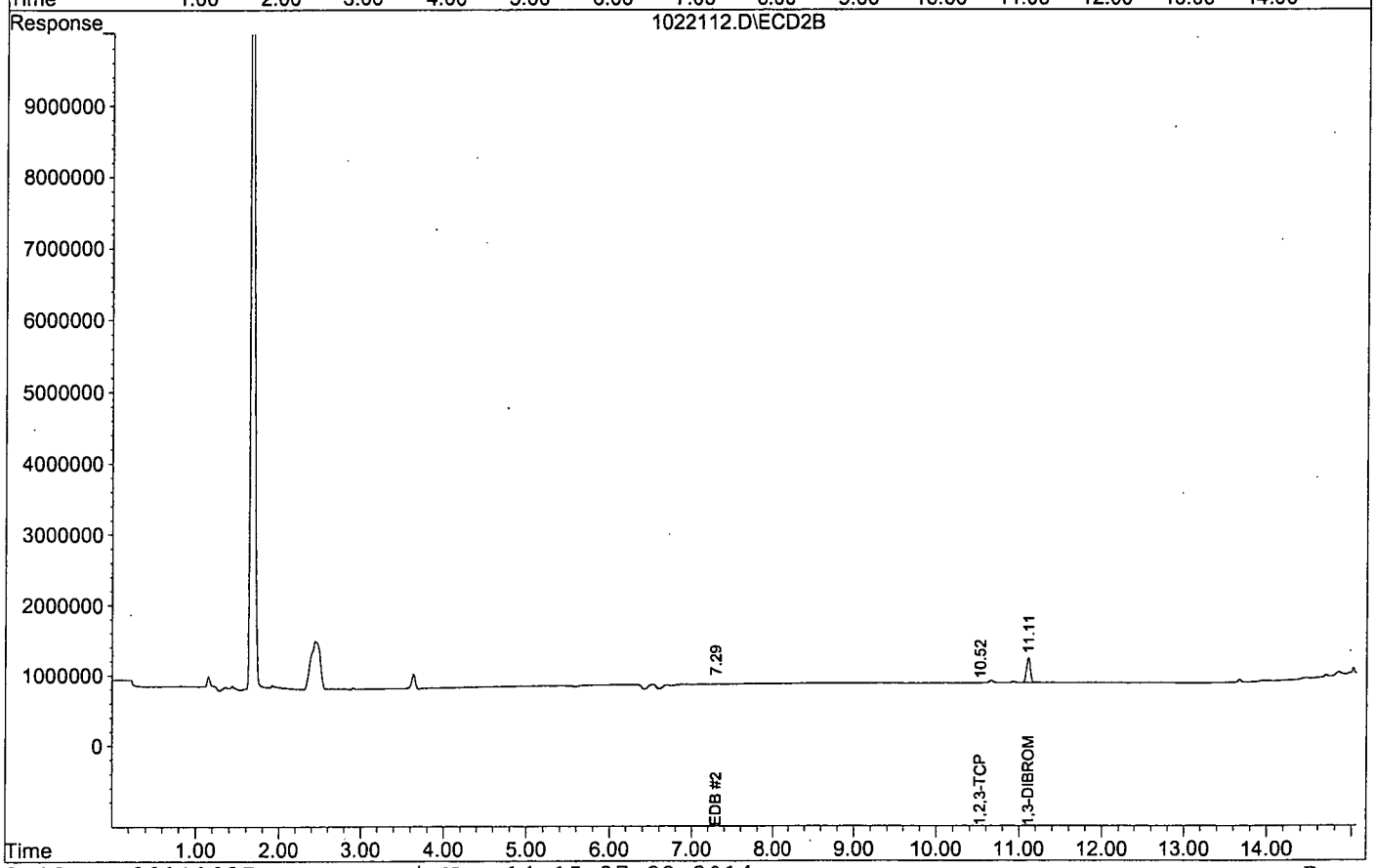
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022112.D
Acq On : 10-30-14 12:35:52
Sample : 141027A BLK 2/32.34G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 12
Operator: MA
Inst : Herbie
Multiplr: 1.08



# Laboratory Control Spike Recovery
## EPA 8011

APPL ID: **141027W-05593 LCS - 191515**
Batch ID: #8011-141027A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| DBCP | 0.482 | 0.507 | 105 | 60-140 |
| EDB | 0.482 | 0.491 | 102 | 60-140 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | 0.364 | 104 | 70-132 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | 80111027.M |
| Extraction Date : | 10/27/14 |
| Analysis Date : | 10/30/14 |
| Instrument : | Herbie |
| Run : | 1022114 |
| Initials : | MA |

*Printed: 11/14/14 2:57:14 PM*
*APPL Standard LCS*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022114.D\ECD1A.CH Vial: 14
Signal #2 : G:\HERBIE\DATA\141022\1022114.D\ECD2B.CH
Acq On : 10-30-14 13:16:33 Operator: MA
Sample : 141027A LCS-2 2/32.96G Inst : Herbie
Misc : soil Multiplr: 1.06
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 258654 | 346347 | 0.364 | 0.368 |
| Spiked Amount 0.372 | | | Recovery | = | 97.94% | 99.01% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 461805 | 710380 | 0.491 | 0.497 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 102372 | 138321 | 0.575 | 0.602 |
| 4) TM DBCP | 13.40 | 14.13 | 1185573 | 2215148 | 0.507 | 0.519 |

Target Compounds

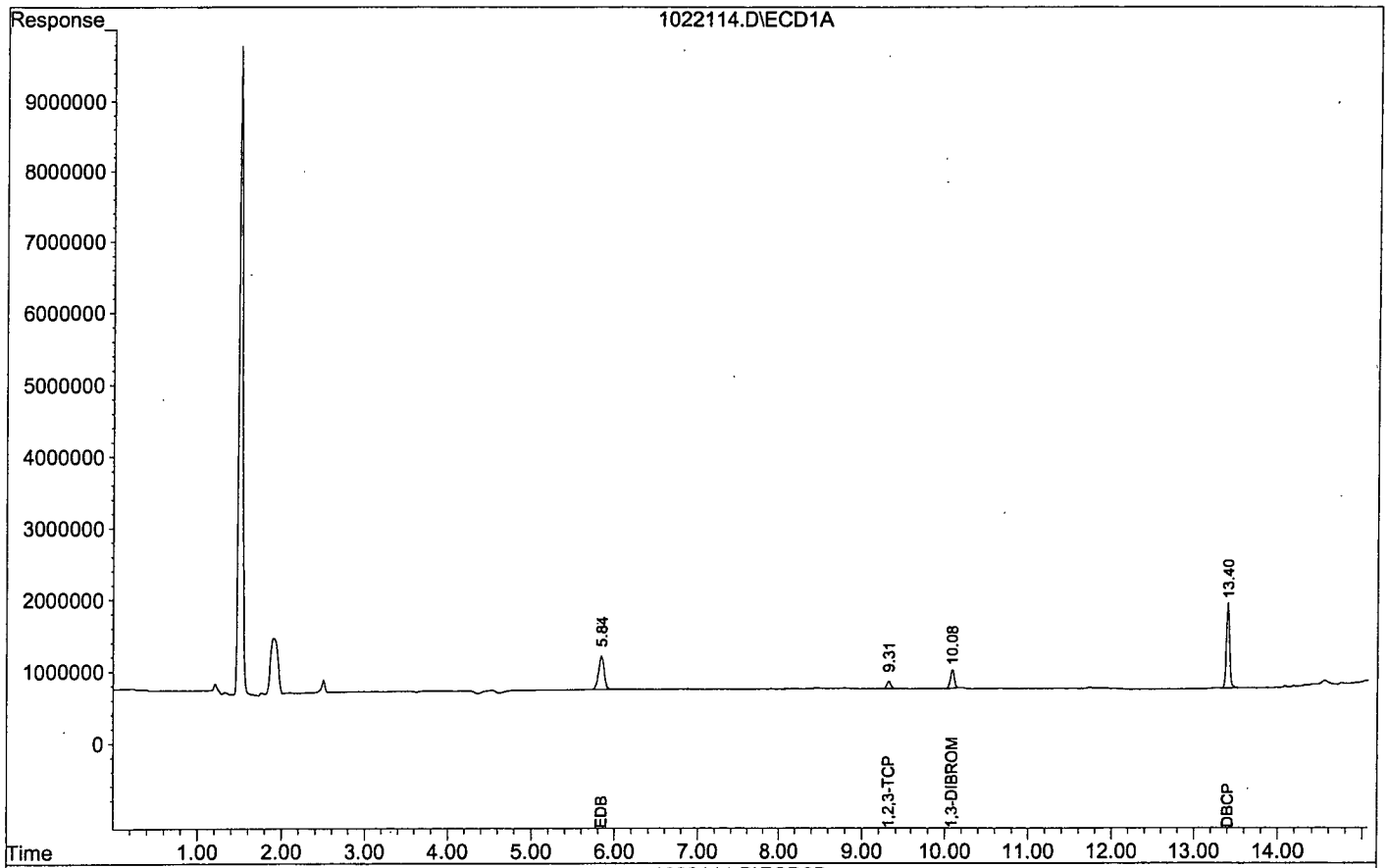
Algorithm = $\frac{461805 \times 1.06}{2 \times 499174}$ = 0.491 MA 11/14/14

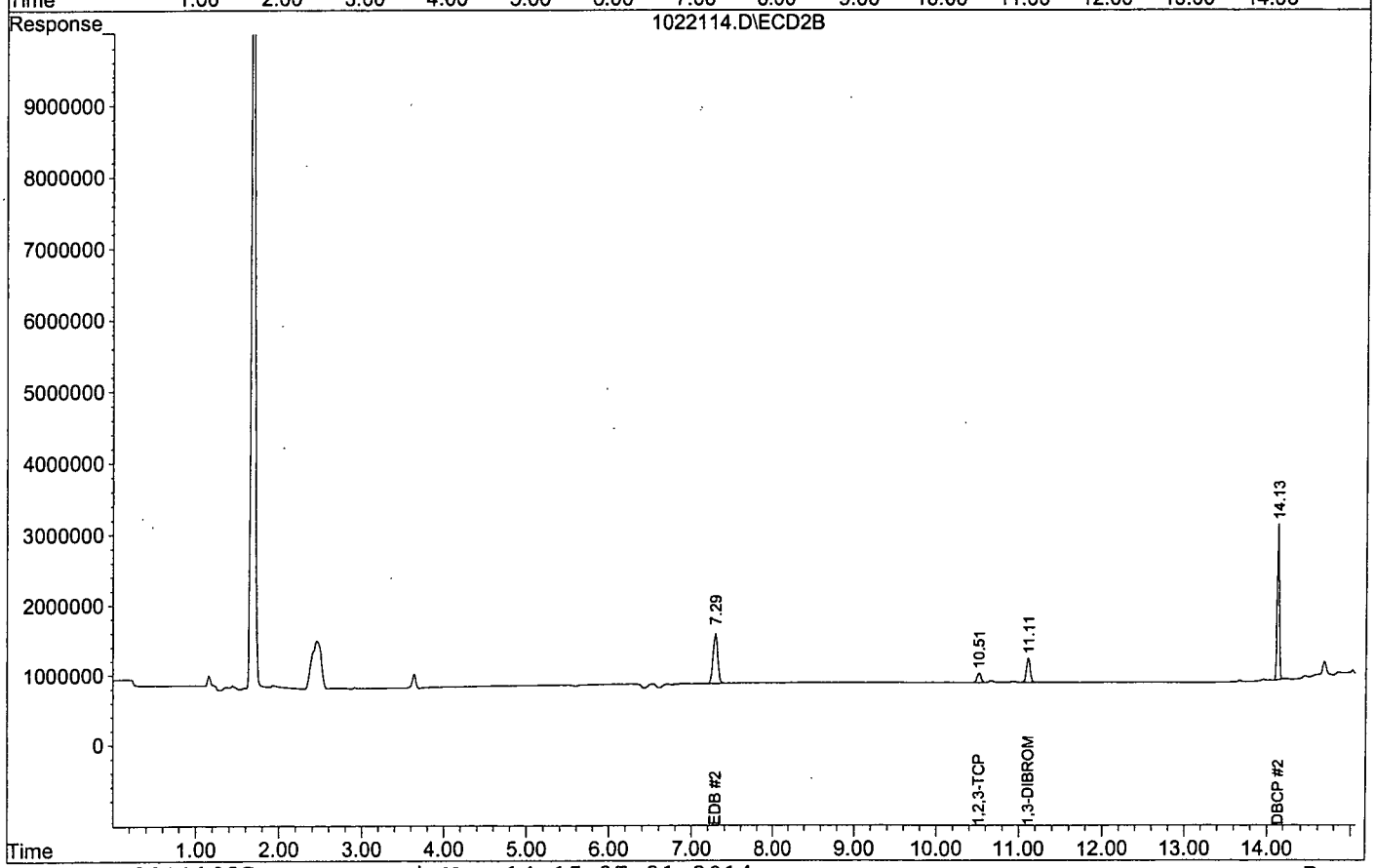
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022114.D
Acq On : 10-30-14 13:16:33
Sample : 141027A LCS-2 2/32.96G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 14
Operator: MA
Inst : Herbie
Multiplr: 1.06



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022113.D\ECD1A.CH Vial: 13
Signal #2 : G:\HERBIE\DATA\141022\1022113.D\ECD2B.CH
Acq On : 10-30-14 12:56:09 Operator: MA
Sample : 141027A LCS-1 2/32.27G Inst : Herbie
Misc : soil Multiplr: 1.08
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

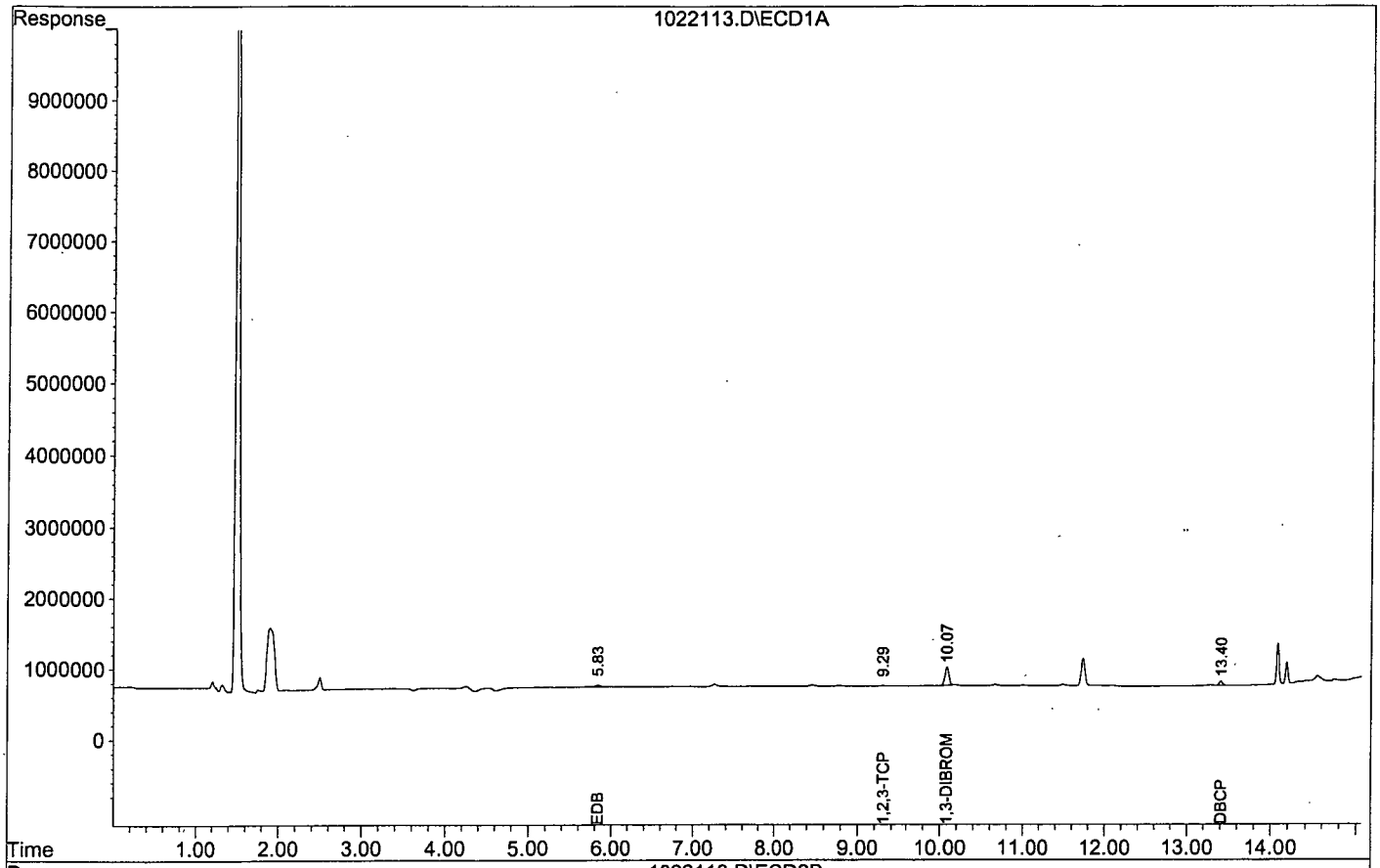
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.11 | 255831 | 339793 | 0.368 | 0.369 |
| Spiked Amount 0.380 | | | Recovery | = | 96.94% | 97.21% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.83 | 7.29 | 23228 | 32982 | 0.025 | 0.024 |
| 2) TM 1,2,3-TCP | 9.29 | 10.51 | 470 | 2585 | 0.003 | 0.011 # |
| 4) TM DBCP | 13.40 | 14.13 | 59566 | 93741 | 0.026 | 0.022 |
| Target Compounds | | | | | | |

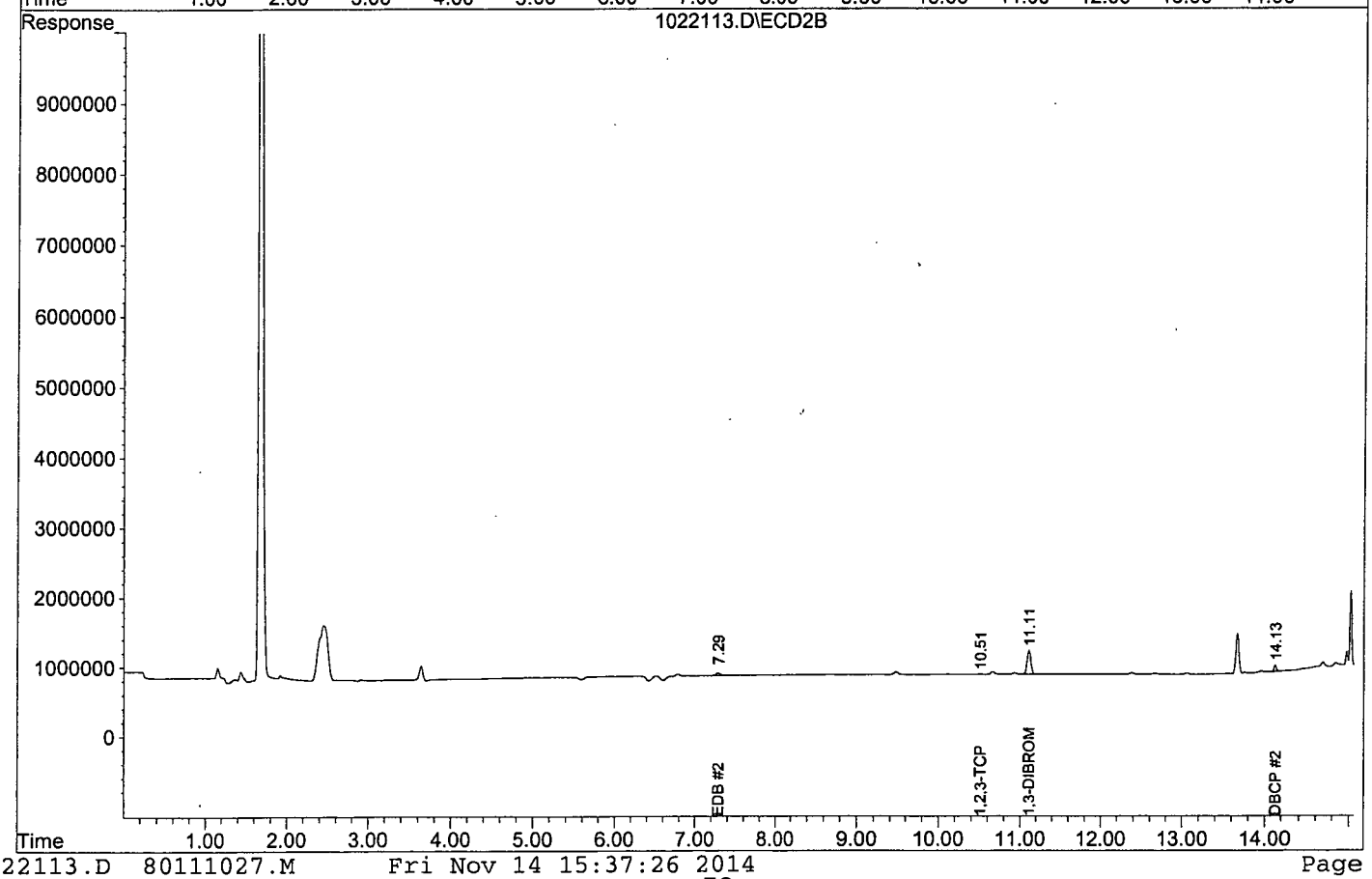
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022113.D
Acq On : 10-30-14 12:56:09
Sample : 141027A LCS-1 2/32.27G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 13
Operator: MA
Inst : Herbie
Multiplr: 1.08



# Matrix Spike Recoveries

## EPA 8011

APPL ID: **141027W-05593 MS - 191515**
Batch ID: #8011-141027A
Sample ID: AZ05593
Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | Matrix Result ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|
| DBCP | 0.482 | ND | 0.497 | 0.519 | 103 | 108 | 60-140 | 4.3 | 25 |
| EDB | 0.482 | ND | 0.470 | 0.486 | 97.5 | 101 | 60-140 | 3.3 | 25 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | NA | 0.353 | 0.352 | 101 | 101 | 70-132 | | |

Comments: _____

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | 80111027.M | 80111027.M |
| Extraction Date : | 10/27/14 | 10/27/14 |
| Analysis Date : | 10/30/14 | 10/30/14 |
| Instrument : | Herbie | Herbie |
| Run : | 1022120 | 1022121 |
| Initials : | MA | |

*Printed: 11/14/14 3:20:03 PM*
*APPL MSD SCII*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022120.D\ECD1A.CH Vial: 20
Signal #2 : G:\HERBIE\DATA\141022\1022120.D\ECD2B.CH
Acq On : 10-30-14 15:18:58 Operator: MA
Sample : AZ05593W13 MS-2 2/34.28G Inst : Herbie
Misc : soil Multiplr: 1.02
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 260651 | 344016 | 0.353 | 0.351 |
| Spiked Amount 0.357 | | | Recovery | = | 98.78% | 98.22% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 459179 | 708922 | 0.470 | 0.477 |
| 2) TM 1,2,3-TCP | 9.31 | 10.52 | 103504 | 139242 | 0.559 | 0.583 |
| 4) TM DBCP | 13.40 | 14.13 | 1210520 | 2234558 | 0.497 | 0.504 |

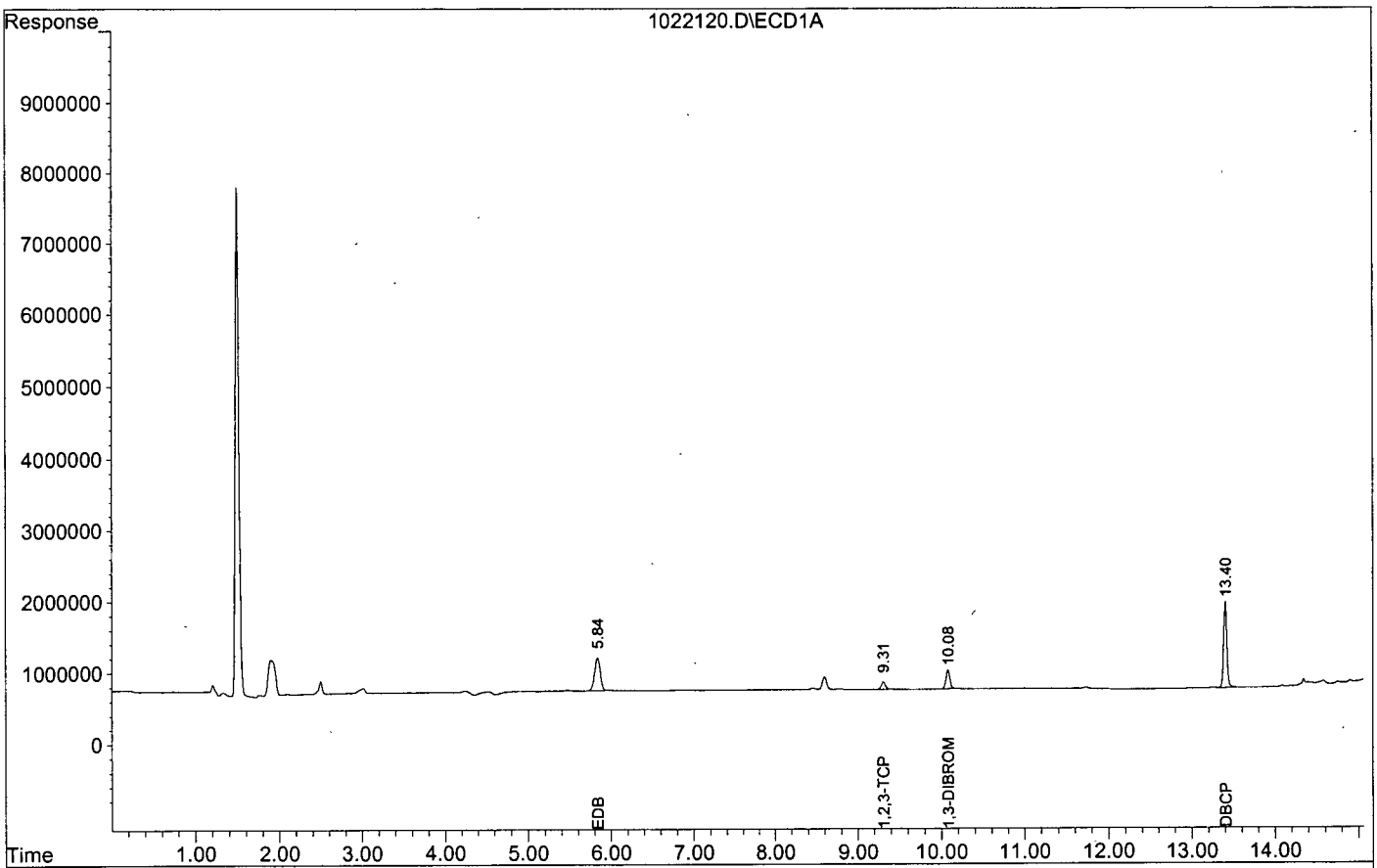
Target Compounds

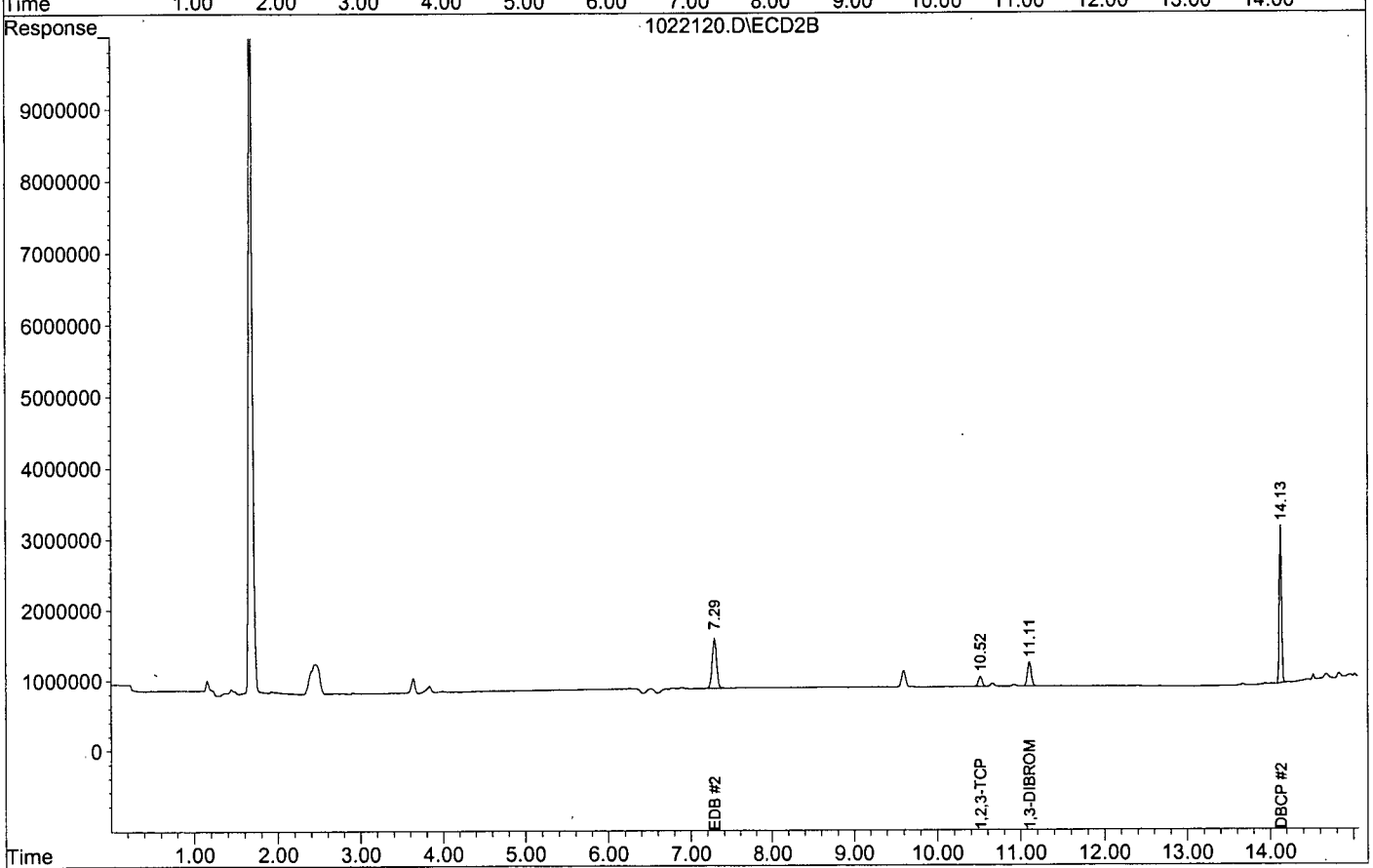
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022120.D
Acq On : 10-30-14 15:18:58
Sample : AZ05593W13 MS-2 2/34.28G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 20
Operator: MA
Inst : Herbie
Multiplr: 1.02



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141022\1022121.D\ECD1A.CH Vial: 21
Signal #2 : G:\HERBIE\DATA\141022\1022121.D\ECD2B.CH
Acq On : 10-30-14 15:39:21 Operator: MA
Sample : AZ05593W07 MSD-2 2/34.51G Inst : Herbie
Misc : soil Multiplr: 1.01
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 14 15:33 2014 Quant Results File: 80111027.RES

Quant Method : G:\HERBIE\DATA\141022\80111027.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 04 15:58:19 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

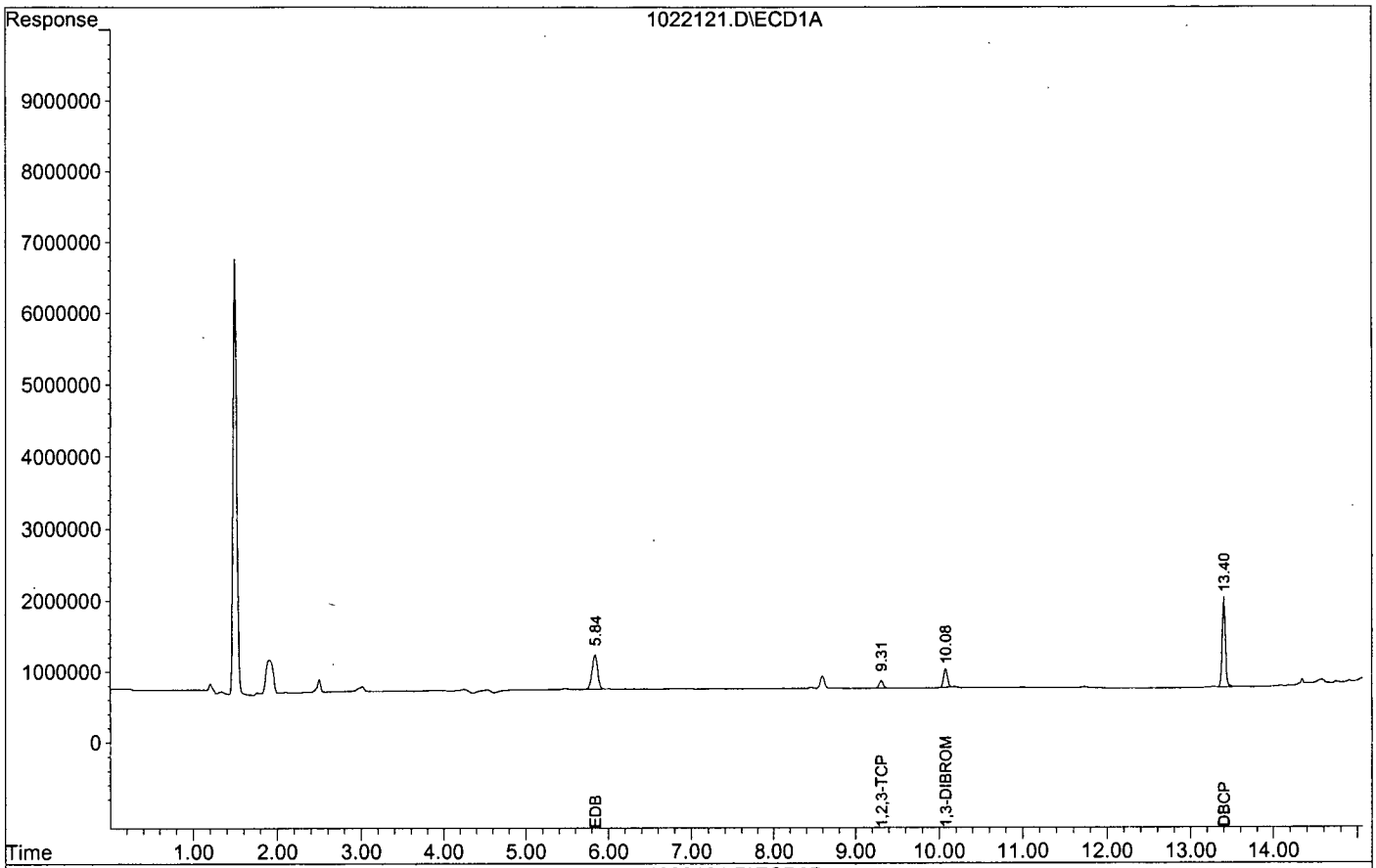
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 261288 | 348029 | 0.352 | 0.353 |
| Spiked Amount 0.355 | | | Recovery | = | 99.16% | 99.45% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 478688 | 719639 | 0.486 | 0.480 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 106098 | 142805 | 0.569 | 0.594 |
| 4) TM DBCP | 13.40 | 14.13 | 1270386 | 2296301 | 0.519 | 0.514 |
| Target Compounds | | | | | | |

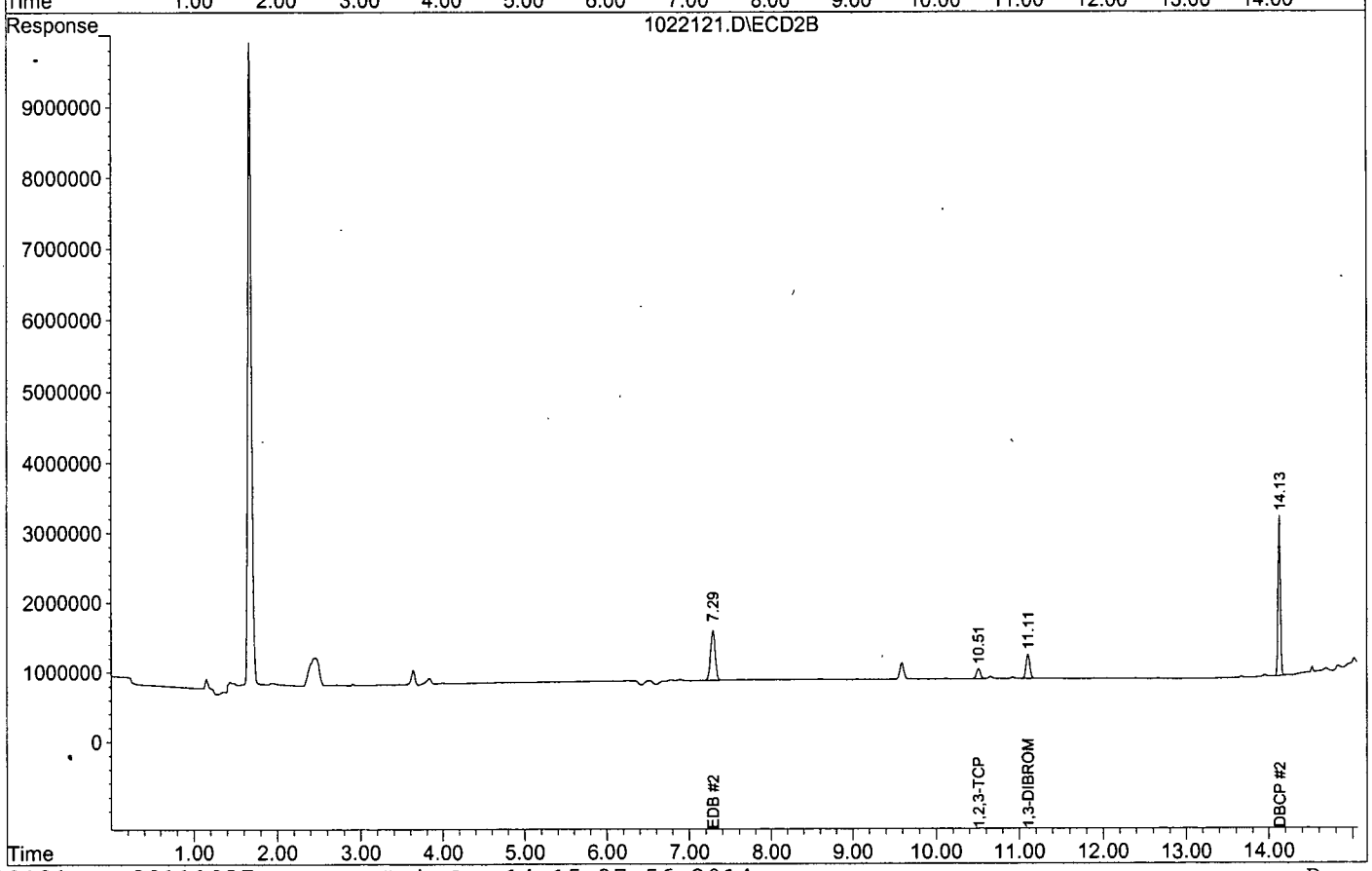
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141022\1022121.D
Acq On : 10-30-14 15:39:21
Sample : AZ05593W07 MSD-2 2/34.51G
Misc : soil
Quant Method : G:\HERBIE\DATA\141022\80111027.M

Vial: 21
Operator: MA
Inst : Herbie
Multiplr: 1.01



| STANDARD | INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOLVENT LOT # 081 |
|---|---|---|---|---|---|---|

LOG BOOK #41

DIESEL SPIKE

Diesel Fuel #2 Composite
(Second Source), 50,000
mg/L, 2 x 5 ml
011598-01-SS
Lot # 207749 | Storage ≤ -10 Degrees C | Expiry 4/27/16
Solv: Methylene Chloride
For R&D study, not for human consumption. Made in the USA

Diesel Fuel #2 Composite (SS)
Lot #: 207749 - 32376
Rec: 4/25/13 MFR exp. 4/27/16

Open 7/28/14 — 7/28/14 MA
Ex 7/28/15 — Ex 7/28/15

| | 504/8011 SURROGATE | | | | | | |
|---|---|---|---|---|---|---|---|
| | Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| * | 1,3 DBP | 100 | 1,3 DBP STOCK prep.02/17/14 exp. 02/1715 | 35ul | 10mL | 0.35ug/mL | Methanol 070913A |

CA 7/28/14

| | 504/8011 HIGH M STD | | | | | | |
|---|---|---|---|---|---|---|---|
| | Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| * | EDB, TCP, DBCP, 1,3 DBP | 20ug/mL | 504/DOHS STOCK prep. 07/28/14 exp 07/28/15 | 500uL | 25mL | 0.4ug/mL | Methanol 070913A |
| | | 100ug/mL | 1,3 DBP STOCK prep. 02/17/14 exp. 02/17/15 | 100uL | | | |

CA 7/28/14

| | 504/8011 LOW M STD | | | | | | |
|---|---|---|---|---|---|---|---|
| | Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| * | EDB, TCP, DBCP, 1,3 DBP | 0.4ug/mL | 504/8011 HIGH M STD prep.07/28/14 exp: 08/28/14 | 750uL | 10mL | 0.03ug/mL | Methanol 070913A |

CA 7/28/14

| | 504/8011 HIGH SPIKE | | | | | | |
|---|---|---|---|---|---|---|---|
| | Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| * | EDB, TCP, DBCP | 200ug/mL | Absolute CAT 30096 Lot 080111-30272 open 1/29/14 exp 1/29/15 | 30uL | 25mL | 0.24ug/mL | Methanol 070913A |

CA 7/28/14

| | 504/8011 LOW SPIKE | | | | | | |
|---|---|---|---|---|---|---|---|
| | Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| * | EDB, TCP, DBCP | 0.24ug/mL | 504/8011 HIGH SPIKE prep. 07/28/14 Exp: 08/28/14 | 800uL | 10mL | 0.0192ug/mL | Methanol 070913A |

CA 7/28/14

| PAC ECO CURVE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1a | 1b | 1 | 2 | 3 | 4 | 5 | 6 |
| | ID# | [µg/mL] | LOT # | DATE | EXP. DATE | µL | µL | µL | µL | µL | µL | µL | µL |
| | PAC ECO CAL STD | 6 | | 06/23/14 | 11/09/14 | 2 | 5 | 10 | 50 | 20 | 100 | 70 | 1000 |
| | | | | | | 998 | 995 | 990 | 950 | 80 | 100 | 30 | N/A |
| | Hexane | | 080613A | | Final VOL. | 1000 | 1000 | 1000 | 1000 | 100 | 200 | 100 | N/A |

CA 7/29/14

THC SURROGATE — open 7/29/14 — Kg
CAT: 110316-05 — Exp. 7/29/15 — 7/29/14
Lot: 216091-33700 — Exp 7/29/15

_MWE012

# Organic Extraction Worksheet

| Method | EPA Method 8011 DBCP/EDB | Extraction Set | 141027A | Extraction Method | MWE012 | Units | mL |
|---|---|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Spiked ID 1 | 504.1 Low Spike 7-28-14 | | Surrogate ID 1 | 504.1 Surrogate 7-28-14 | |
| Spiked ID 2 | 504.1 High Spike 7-28-14 | | Surrogate ID 2 | | |
| Spiked ID 3 | 504.1 Low Method Standard 8-6-14 | | Surrogate ID 3 | | |
| Spiked ID 4 | 504.1 High Method Standard 7-28-14 | | Surrogate ID 4 | | |
| Spiked ID 5 | | | Surrogate ID 5 | | |
| Spiked ID 6 | | | Sufficient Vol for Matrix QC: | YES | |
| Spiked ID 7 | | | Ext. Start Time: | 10/27/14 16:20 | |
| Spiked ID 8 | | | Ext. End Time: | 10/28/14 16:00 | |
| | | | **GC Requires Extract By:** | **11/04/14 0:00** | |
| | | | pH1 | | Water Bath Temp Criteria |
| | | | pH2 | | |
| | | | pH3 | | |

**Spiked By:** IC **Date** 10/27/14 **Witnessed By:** DL **Date** 10/27/14

| | Sample | Sample Container | Spike Amount | Spike ID | Surrogate Amount | Surrogate ID | Extract Amount | Final Volume | pH | Extract Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 141027A Blk | | | | 0.035 | 1 equip | 32.34g | 2 | 7 | 10/27/14 16:20 | |
| 2 | 141027A LCS-1 | | 0.035 | 1 | 0.035 | 1 equip | 32.27g | 2 | 7 | 10/27/14 16:20 | |
| 3 | 141027A LCS-2 | | 0.070 | 2 | 0.035 | 1 equip | 32.96g | 2 | 7 | 10/27/14 16:20 | |
| 4 | AZ05388 | AZ05388W07 | | | 0.035 | 1 equip | 34.03g | 2 | 7 | 10/27/14 16:20 | 74672 RUSH 2 WEEKS |
| 5 | AZ05389 | AZ05389W08 | | | 0.035 | 1 equip | 34.63g | 2 | 7 | 10/27/14 16:20 | 74672 RUSH 2 WEEKS |
| 6 | AZ05518 | AZ05518W01 | 0.040 | 3 | 0.035 | 1 equip | 31.09g | 2 | 7 | 10/27/14 16:20 | 74692 LOQ |
| 7 | AZ05593 MS-1 | AZ05593W02 | 0.035 | 1 | 0.035 | 1 equip | 34.53g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 8 | AZ05593 MSD-1 | AZ05593W12 | 0.035 | 1 | 0.035 | 1 equip | 34.37g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 9 | AZ05593 MS-2 | AZ05593W13 | 0.070 | 2 | 0.035 | 1 equip | 34.28g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 10 | AZ05593 MSD-2 | AZ05593W07 | 0.070 | 2 | 0.035 | 1 equip | 34.51g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 11 | AZ05593 | AZ05593W10 | | | 0.035 | 1 equip | 34.54g | 2 | 7 | 10/27/14 16:20 | 74701 RUSH 2 WEEKS |
| 12 | LOD | | 0.020 | 3 | NA | NA equip | 33.98g | 2 | 7 | 10/27/14 16:20 | |
| 13 | M STD 1 | | 0.020 | 3 | NA | NA equip | 33.04g | 2 | 7 | 10/27/14 16:20 | |
| 14 | M STD 2 | | 0.020 | 4 | NA | NA equip | 33.31g | 2 | 7 | 10/27/14 16:20 | |
| 15 | M STD 3 | | 0.040 | 4 | NA | NA equip | 32.25g | 2 | 7 | 10/27/14 16:20 | |
| 16 | M STD 4 | | 0.060 | 4 | NA | NA equip | 32.52g | 2 | 7 | 10/27/14 16:20 | |

| Solvent and Lot# | |
|---|---|
| GC2 Hexane | DH772 |
| NaCL | WJ11D |
| Sod. Thiosulfate | H15584 |

| Extraction COC Transfer | |
|---|---|
| Extraction lab employee Initials | KY |
| GC analyst's initials | LH |
| Date | 10/29/14 |
| Time | 1:01 |
| Refrigerator | Hobart |

| | Technician's Initials |
|---|---|
| Scanned By | IC |
| Sample Preparation | IC |
| Extraction | IC |
| Concentration | ---------- |

| Modified | 10/28/14 5:36:48 PM |
|---|---|

**Reviewed By:** **Date**

# Organic Extraction Worksheet

| Method | EPA Method 8011 DBCP/EDB | Extraction Set | 141027A | Extraction Method | MWE012 | Units | mL |
|---|---|---|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Spiked ID 1 | 504.1 Low Spike 7-28-14 | | Surrogate ID 1 | 504.1 Surrogate 7-28-14 |
| Spiked ID 2 | 504.1 High Spike 7-28-14 | | Surrogate ID 2 | |
| Spiked ID 3 | 504.1 Low Method Standard 8-6-14 | | Surrogate ID 3 | |
| Spiked ID 4 | 504.1 High Method Standard 7-28-14 | | Surrogate ID 4 | |
| Spiked ID 5 | | | Surrogate ID 5 | |
| Spiked ID 6 | | | Sufficient Vol for Matrix QC: | YES |
| Spiked ID 7 | | | Ext. Start Time: | 10/27/14 16:20 |
| Spiked ID 8 | | | Ext. End Time: | 10/28/14 16:00 |
| | | | **GC Requires Extract By:** | **11/04/14 0:00** |

| | | | | |
|---|---|---|---|---|
| pH1 | | | Water Bath Temp Criteria | |
| pH2 | | | | |
| pH3 | | | | |

**Spiked By:** IC **Date** 10/27/14 **Witnessed By:** DL **Date** 10/27/14

| | Sample | Sample Container | Spike Amount | Spike ID | Surrogate Amount | Surrogate ID | Extract Amount | Final Volume | pH | Extract Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | M STD 5 | | 0.080 | 4 | NA | NA | 33.63g | 2 | 7 | 10/27/14 16:20 | |
| | | | | | | equip | | | | | |
| 18 | M STD 6 | | 0.100 | 4 | NA | NA | 31.65g | 2 | 7 | 10/27/14 16:20 | |
| | | | | | | equip | | | | | |

LH 10/28/14

| Solvent and Lot# | |
|---|---|
| GC2 Hexane | DH772 |
| NaCL | WJ11D |
| Sod. Thiosulfate | H15584 |

| Extraction COC Transfer | |
|---|---|
| Extraction lab employee Initials | KY |
| GC analyst's initials | LH |
| Date | 10/29/14 |
| Time | 1:01 |
| Refrigerator | Hobart |

| | Technician's Initials |
|---|---|
| Scanned By | IC |
| Sample Preparation | IC |
| Extraction | IC |
| Concentration | ---------- |

| | |
|---|---|
| Modified | 10/28/14 5:36:48 PM |

**Reviewed By:** LH **Date** 10/28/14

# Injection Log

Directory: G:\HERBIE\DATA\141022\

| Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|
| 6 | 1022106.D | 1 | 8011-1 10/27/14 2/33.04G | soil | 10-30-14 10:34:12 |
| 7 | 1022107.D | 1 | 8011-2 10/27/14 2/33.31G | soil | 10-30-14 10:54:24 |
| 8 | 1022108.D | 1 | 8011-3 10/27/14 2/32.25G | soil | 10-30-14 11:14:47 |
| 9 | 1022109.D | 1 | 8011-4 10/27/14 2/32.52G | soil | 10-30-14 11:35:01 |
| 10 | 1022110.D | 1 | 8011-5 10/27/14 2/33.63G | soil | 10-30-14 11:55:17 |
| 11 | 1022111.D | 1 | 8011-6 10/27/14 2/31.65G | soil | 10-30-14 12:15:39 |
| 12 | 1022112.D | 1.08225 | 141027A BLK 2/32.34G | soil | 10-30-14 12:35:52 |
| 13 | 1022113.D | 1.0846 | 141027A LCS-1 2/32.27G | soil | 10-30-14 12:56:09 |
| 14 | 1022114.D | 1.06189 | 141027A LCS-2 2/32.96G | soil | 10-30-14 13:16:33 |
| 18 | 1022118.D | 1.01361 | AZ05593W02 MS-1 2/34.53G | soil | 10-30-14 14:38:05 |
| 19 | 1022119.D | 1.01833 | AZ05593W12 MSD-1 2/34.37G | soil | 10-30-14 14:58:28 |
| 20 | 1022120.D | 1.021 | AZ05593W13 MS-2 2/34.28G | soil | 10-30-14 15:18:58 |
| 21 | 1022121.D | 1.0142 | AZ05593W07 MSD-2 2/34.51G | soil | 10-30-14 15:39:21 |
| 22 | 1022122.D | 1.01332 | AZ05593W10 2/34.54G | soil | 10-30-14 15:59:46 |
| 24 | 1022124.D | 1 | 8011-3 10/27/14 | | 10-30-14 16:40:41 |

# EPA METHOD 8260C
# Volatile Organic Compounds

APPL, INC.

# EPA METHOD 8260C
# Volatile Organic Compounds
# QC Summary

APPL, INC.

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DIBROMO-3-CHLOROPROPA | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,3-DICHLOROPROPENE (TOTA | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/2014 | 10/26/2014 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/17/2014 3:26:38 PM*

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: 1,2-DICHLOROET | 104 | 70-120 | | | % | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: 4-BROMOFLUOR | 99.4 | 75-120 | | | % | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: DIBROMOFLUOR | 104 | 85-115 | | | % | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: TOLUENE-D8 (S) | 98.2 | 85-120 | | | % | 10/26/2014 | 10/26/2014 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/17/2014 3:26:38 PM*

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 74701
Matrix: WATER

SDG No: 74701
Date Analyzed: 10/26/2014
Instrument: Loki

| APPL ID. | Client Sample No. | SURROGATE: 1,2-DICHLOROETHANE-D4 (S) | | | SURROGATE: 4-BROMOFLUOROBENZENE (S) | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141026AL-LCS | Lab Control Spike | 70-120 | 87.7 | | 75-120 | 119 | |
| 141026AL-BLK | Blank | 70-120 | 104 | | 75-120 | 99.4 | |
| AZ05594 | TB102114 | 70-120 | 108 | | 75-120 | 98.6 | |
| AZ05593 | RHMW06-GW-01 | 70-120 | 109 | | 75-120 | 98.6 | |

Comments: Batch: #86CRE-141026AL

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 74701

Case No: 74701 Date Analyzed: 10/26/2014

Matrix: WATER Instrument: Loki

| APPL ID. | Client Sample No. | SURROGATE: DIBROMOFLUOROMETHANE (S) | | | SURROGATE: TOLUENE-D8 (S) | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141026AL-LCS | Lab Control Spike | 85-115 | 88.0 | | 85-120 | 106 | |
| 141026AL-BLK | Blank | 85-115 | 104 | | 85-120 | 98.2 | |
| AZ05594 | TB102114 | 85-115 | 106 | | 85-120 | 101 | |
| AZ05593 | RHMW06-GW-01 | 85-115 | 105 | | 85-120 | 101 | |

Comments: Batch: #86CRE-141026AL

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | 9.15 | 91.5 | 80-130 |
| 1,1,1-TRICHLOROETHANE | 10.00 | 9.54 | 95.4 | 65-130 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | 10.9 | 109 | 65-130 |
| 1,1,2-TRICHLOROETHANE | 10.00 | 9.15 | 91.5 | 75-125 |
| 1,1-DICHLOROETHANE | 10.00 | 8.64 | 86.4 | 70-135 |
| 1,1-DICHLOROETHENE | 10.00 | 9.46 | 94.6 | 70-130 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | 9.50 | 95.0 | 75-125 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | 8.72 | 87.2 | 65-135 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | 10.6 | 106 | 50-130 |
| 1,2-DIBROMOETHANE | 10.00 | 9.54 | 95.4 | 80-120 |
| 1,2-DICHLOROBENZENE | 10.00 | 10.0 | 100 | 70-120 |
| 1,2-DICHLOROETHANE | 10.00 | 10.2 | 102 | 70-130 |
| 1,2-DICHLOROPROPANE | 10.00 | 9.39 | 93.9 | 75-125 |
| 1,3-DICHLOROBENZENE | 10.00 | 10.7 | 107 | 75-125 |
| 1,3-DICHLOROPROPENE (TOTAL) | 20.0 | 18.4 | 92.0 | 55-140 |
| 1,4-DICHLOROBENZENE | 10.00 | 10.4 | 104 | 75-125 |
| 2-BUTANONE | 10.00 | 9.58 | 95.8 | 30-150 |
| 4-METHYL-2-PENTANONE | 10.00 | 8.53 | 85.3 | 60-135 |
| ACETONE | 10.00 | 9.06 | 90.6 | 40-140 |
| BENZENE | 10.00 | 10.2 | 102 | 80-120 |
| BROMODICHLOROMETHANE | 10.00 | 9.43 | 94.3 | 75-120 |
| BROMOFORM | 10.00 | 8.95 | 89.5 | 70-130 |
| BROMOMETHANE | 10.00 | 11.0 | 110 | 30-145 |
| CARBON TETRACHLORIDE | 10.00 | 10.3 | 103 | 65-140 |
| CHLOROBENZENE | 10.00 | 9.77 | 97.7 | 80-120 |
| CHLOROETHANE | 10.00 | 11.4 | 114 | 60-135 |
| CHLOROFORM | 10.00 | 8.92 | 89.2 | 65-135 |
| CHLOROMETHANE | 10.00 | 8.91 | 89.1 | 40-125 |
| CIS-1,2-DICHLOROETHENE | 10.00 | 9.83 | 98.3 | 70-125 |
| DIBROMOCHLOROMETHANE | 10.00 | 9.40 | 94.0 | 60-135 |
| ETHYLBENZENE | 10.00 | 10.4 | 104 | 75-125 |

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/2014 |
| Analysis Date : | 10/26/2014 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

Comments: _____

*Printed: 11/17/2014 3:26:40 PM*
*APPL Standard LCS*

# Laboratory Control Spike Recovery

## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | 9.79 | 97.9 | 50-140 |
| METHYL TERT-BUTYL ETHER | 10.00 | 9.21 | 92.1 | 65-125 |
| METHYLENE CHLORIDE | 10.00 | 9.94 | 99.4 | 55-140 |
| STYRENE | 10.00 | 11.1 | 111 | 65-135 |
| TETRACHLOROETHENE | 10.00 | 9.14 | 91.4 | 45-150 |
| TOLUENE | 10.00 | 10.5 | 105 | 75-120 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | 9.32 | 93.2 | 60-140 |
| TRICHLOROETHENE | 10.00 | 9.30 | 93.0 | 70-125 |
| VINYL CHLORIDE | 10.00 | 7.75 | 77.5 | 50-145 |
| XYLENES (TOTAL) | 30.0 | 31.3 | 104 | 75-130 |
| SURROGATE: 1,2-DICHLOROETHANE-D | 27.7 | 24.3 | 87.7 | 70-120 |
| SURROGATE: 4-BROMOFLUOROBENZ | 22.2 | 26.5 | 119 | 75-120 |
| SURROGATE: DIBROMOFLUOROMETH | 27.2 | 23.9 | 88.0 | 85-115 |
| SURROGATE: TOLUENE-D8 (S) | 26.2 | 27.6 | 106 | 85-120 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/2014 |
| Analysis Date : | 10/26/2014 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

*Printed: 11/17/2014 3:26:40 PM*
*APPL Standard LCS*

# Matrix Spike Recoveries

## EPA 8260C WATER

APPL ID: **141117W-05593 MS - 191309**
Batch ID: #86CRE-141026AL
Sample ID: AZ05593
Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | Matrix Result ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | ND | 12.6 | 12.2 | 126 | 122 | 80-130 | 3.2 | 30 |
| 1,1,1-TRICHLOROETHANE | 10.00 | ND | 12.6 | 12.0 | 126 | 120 | 65-130 | 4.9 | 30 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | ND | 13.8 | 13.5 | 138 # | 135 # | 65-130 | 2.2 | 30 |
| 1,1,2-TRICHLOROETHANE | 10.00 | ND | 12.3 | 11.6 | 123 | 116 | 75-125 | 5.9 | 30 |
| 1,1-DICHLOROETHANE | 10.00 | ND | 13.6 | 12.7 | 136 # | 127 | 70-135 | 6.8 | 30 |
| 1,1-DICHLOROETHENE | 10.00 | ND | 12.2 | 11.6 | 122 | 116 | 70-130 | 5.0 | 30 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | ND | 12.2 | 12.3 | 122 | 123 | 75-125 | 0.82 | 30 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | ND | 11.8 | 11.8 | 118 | 118 | 65-135 | 0.0 | 30 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | ND | 9.74 | 10.3 | 97.4 | 103 | 50-130 | 5.6 | 30 |
| 1,2-DIBROMOETHANE | 10.00 | ND | 12.0 | 11.4 | 120 | 114 | 80-120 | 5.1 | 30 |
| 1,2-DICHLOROBENZENE | 10.00 | ND | 12.4 | 11.9 | 124 # | 119 | 70-120 | 4.1 | 30 |
| 1,2-DICHLOROETHANE | 10.00 | ND | 12.6 | 12.2 | 126 | 122 | 70-130 | 3.2 | 30 |
| 1,2-DICHLOROPROPANE | 10.00 | ND | 13.4 | 13.2 | 134 # | 132 # | 75-125 | 1.5 | 30 |
| 1,3-DICHLOROBENZENE | 10.00 | ND | 13.3 | 12.7 | 133 # | 127 # | 75-125 | 4.6 | 30 |
| 1,4-DICHLOROBENZENE | 10.00 | ND | 12.5 | 12.2 | 125 | 122 | 75-125 | 2.4 | 30 |
| 2-BUTANONE | 10.00 | ND | 7.90 | 7.69 | 79.0 | 76.9 | 30-150 | 2.7 | 30 |
| 4-METHYL-2-PENTANONE | 10.00 | ND | 6.78 | 7.21 | 67.8 | 72.1 | 60-135 | 6.1 | 30 |
| ACETONE | 10.00 | ND | 7.59 | 6.94 | 75.9 | 69.4 | 40-140 | 8.9 | 30 |
| BENZENE | 10.00 | ND | 13.4 | 12.9 | 134 # | 129 # | 80-120 | 3.8 | 30 |
| BROMODICHLOROMETHANE | 10.00 | ND | 12.5 | 12.1 | 125 # | 121 # | 75-120 | 3.3 | 30 |
| BROMOFORM | 10.00 | ND | 11.4 | 11.1 | 114 | 111 | 70-130 | 2.7 | 30 |
| BROMOMETHANE | 10.00 | ND | 13.1 | 13.0 | 131 | 130 | 30-145 | 0.77 | 30 |
| CARBON TETRACHLORIDE | 10.00 | ND | 12.1 | 11.7 | 121 | 117 | 65-140 | 3.4 | 30 |
| CHLOROBENZENE | 10.00 | ND | 13.3 | 12.6 | 133 # | 126 # | 80-120 | 5.4 | 30 |
| CHLOROETHANE | 10.00 | ND | 9.53 | 9.51 | 95.3 | 95.1 | 60-135 | 0.21 | 30 |
| CHLOROFORM | 10.00 | ND | 13.0 | 12.5 | 130 | 125 | 65-135 | 3.9 | 30 |
| CHLOROMETHANE | 10.00 | ND | 8.69 | 8.43 | 86.9 | 84.3 | 40-125 | 3.0 | 30 |
| CIS-1,2-DICHLOROETHENE | 10.00 | ND | 12.6 | 12.2 | 126 # | 122 | 70-125 | 3.2 | 30 |
| DIBROMOCHLOROMETHANE | 10.00 | ND | 12.1 | 11.6 | 121 | 116 | 60-135 | 4.2 | 30 |
| ETHYLBENZENE | 10.00 | ND | 14.9 | 14.2 | 149 # | 142 # | 75-125 | 4.8 | 30 |

# = Recovery is outside QC limits.

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | LALLW.M | LALLW.M |
| Extraction Date : | 11/17/2014 | 11/17/2014 |
| Analysis Date : | 11/17/2014 | 11/17/2014 |
| Instrument : | Loki | Loki |
| Run : | 1117L31 | 1117L32 |
| Initials : | SV | |

Comments:

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*APPL MSD SCII*

# Matrix Spike Recoveries

## EPA 8260C WATER

APPL ID: **141117W-05593 MS - 191309**
Batch ID: #86CRE-141026AL
Sample ID: AZ05593
Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | Matrix Result ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | ND | 12.5 | 11.7 | 125 | 117 | 50-140 | 6.6 | 30 |
| METHYL TERT-BUTYL ETHER | 10.00 | ND | 11.2 | 11.2 | 112 | 112 | 65-125 | 0.0 | 30 |
| METHYLENE CHLORIDE | 10.00 | ND | 13.6 | 13.4 | 136 | 134 | 55-140 | 1.5 | 30 |
| STYRENE | 10.00 | ND | 13.1 | 12.5 | 131 | 125 | 65-135 | 4.7 | 30 |
| TETRACHLOROETHENE | 10.00 | ND | 12.8 | 11.8 | 128 | 118 | 45-150 | 8.1 | 30 |
| TOLUENE | 10.00 | ND | 13.9 | 13.4 | 139 # | 134 # | 75-120 | 3.7 | 30 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | ND | 13.2 | 12.8 | 132 | 128 | 60-140 | 3.1 | 30 |
| TRICHLOROETHENE | 10.00 | ND | 12.2 | 12.2 | 122 | 122 | 70-125 | 0.0 | 30 |
| VINYL CHLORIDE | 10.00 | ND | 9.12 | 8.81 | 91.2 | 88.1 | 50-145 | 3.5 | 30 |
| XYLENES (TOTAL) | 30.0 | ND | 43.7 | 41.8 | 146 # | 139 # | 75-130 | 4.4 | 30 |
| SURROGATE: 1,2-DICHLOROETHANE-D | 25.0 | NA | 22.5 | 22.7 | 90.1 | 90.9 | 70-120 | | |
| SURROGATE: 4-BROMOFLUOROBENZE | 22.9 | NA | 26.4 | 25.9 | 115 | 113 | 75-120 | | |
| SURROGATE: DIBROMOFLUOROMETH | 24.0 | NA | 22.7 | 22.5 | 94.5 | 93.7 | 85-115 | | |
| SURROGATE: TOLUENE-D8 (S) | 24.9 | NA | 26.3 | 25.6 | 106 | 103 | 85-120 | | |

# = Recovery is outside QC limits.

Comments:

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | LALLW.M | LALLW.M |
| Extraction Date : | 11/17/2014 | 11/17/2014 |
| Analysis Date : | 11/17/2014 | 11/17/2014 |
| Instrument : | Loki | Loki |
| Run : | 1117L31 | 1117L32 |
| Initials : | SV | |

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*APPL MSD SCII*

# EPA 8260C^LL

Form 4

## Blank Summary

Lab Name: APPL, Inc.
SDG No: 74701
Case No: 74701
Date Analyzed: 10/26/2014
Matrix: WATER
Instrument: Loki
Blank ID: 141026AL-BLK
Time Analyzed: 1457

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141026AL-LCS | Lab Control Spike | 1026L05 | 10/26/2014 1235 |
| 141026AL-BLK | Blank | 1026L10 | 10/26/2014 1457 |
| AZ05594 | TB102114 | 1026L13 | 10/26/2014 1622 |
| AZ05593 | RHMW06-GW-01 | 1026L18 | 10/26/2014 1843 |

Comments: Batch: #86CRE-141026AL

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: ~~1024L01.D~~ 74701
Matrix: Water np 11-18-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: np 11-18-14 ~~Loki~~ 74701
Date Analyzed: 10/24/14
Instrument: Loki
Time Analyzed: 10:32

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 0.1ug/L Vol Std 10-2 | 1024L05.D | 10/24/14 12:19 |
| 2 | | 0.3ug/L Vol Std 10-2 | 1024L06.D | 10/24/14 12:47 |
| 3 | | 0.5ug/L Vol Std 10-2 | 1024L07.D | 10/24/14 13:16 |
| 4 | | 1.0ug/L Vol Std 10-2 | 1024L08.D | 10/24/14 13:44 |
| 5 | | 5.0ug/L Vol Std 10-2 | 1024L09.D | 10/24/14 14:12 |
| 6 | | 10ug/L Vol Std 10-24 | 1024L10.D | 10/24/14 14:41 |
| 7 | | 20ug/L Vol Std 10-24 | 1024L11.D | 10/24/14 15:09 |
| 8 | | 40ug/L Vol Std 10-24 | 1024L12.D | 10/24/14 15:37 |
| 9 | | 100ug/L Vol Std 10-2 | 1024L13.D | 10/24/14 16:05 |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 16.5 |
| 75 | 30 - 60% of mass 95 | 48.1 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.7 |
| 173 | 0 - 2.09% of mass 174 | 0.0 |
| 174 | 50 - 100% of mass 95 | 96.2 |
| 175 | 5 - 9% of mass 174 | 7.7 |
| 176 | 94.9 - 101% of mass 174 | 96.1 |
| 177 | 5 - 9% of mass 176 | 6.6 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 1024~~L16.D~~ 74701
Matrix: Water np 11-18-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: np 11-18-14 ~~Loki~~ 74701
Date Analyzed: 10/24/2014
Instrument: Loki
Time Analyzed: 17:30

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 10ug/L Std 10-24-14( | 1024L17.D | 10/24/2014 17:59 |
| 2 | | 10ug/L Std 10-24-14( | 1024L18.D | 10/24/2014 18:27 |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 18.7 |
| 75 | 30 - 60% of mass 95 | 49.6 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 7.2 |
| 173 | 0 - 2.09% of mass 174 | 2.0 |
| 174 | 50 - 100% of mass 95 | 94.1 |
| 175 | 5 - 9% of mass 174 | 7.5 |
| 176 | 94.9 - 101% of mass 174 | 98.5 |
| 177 | 5 - 9% of mass 176 | 5.6 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 74701
Matrix: Water
ID: 25ug/mL BFB Std 09-30-14

SDG No: 74701
Date Analyzed: 10/26/2014
Instrument: Loki
Time Analyzed: 10:43

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 10ug/L Std 10-26-14( | 1026L04.D | 10/26/2014 12:07 |
| 2 | Lab Control Spike | 141026A LCS-1WL | 1026L05.D | 10/26/2014 12:35 |
| 3 | Blank | 141026A BLK-1WL | 1026L10.D | 10/26/2014 14:57 |
| 4 | TB102114 | AZ05594W01 | 1026L13.D | 10/26/2014 16:22 |
| 5 | RHMW06-GW-01 | AZ05593W01 | 1026L18.D | 10/26/2014 18:43 |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 16.1 |
| 75 | 30 - 60% of mass 95 | 46.9 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.5 |
| 173 | 0 - 2.09% of mass 174 | 0.0 |
| 174 | 50 - 100% of mass 95 | 96.9 |
| 175 | 5 - 9% of mass 174 | 7.6 |
| 176 | 94.9 - 101% of mass 174 | 97.0 |
| 177 | 5 - 9% of mass 176 | 6.7 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 1110L01.D 74701
Matrix: Water np11-18-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: np11-18-14 Loki 74701
Date Analyzed: 11/10/2014
Instrument: Loki
Time Analyzed: 16:17

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 0.3ug/L Vol Std 11-1 | 1110L05.D | 11/10/2014 18:04 |
| 2 | | 0.5ug/L Vol Std 11-1 | 1110L06.D | 11/10/2014 18:32 |
| 3 | | 1.0ug/L Vol Std 11-1 | 1110L07.D | 11/10/2014 19:01 |
| 4 | | 5.0ug/L Vol Std 11-1 | 1110L08.D | 11/10/2014 19:29 |
| 5 | | 10ug/L Vol Std 11-10 | 1110L09.D | 11/10/2014 19:57 |
| 6 | | 20ug/L Vol Std 11-10 | 1110L10.D | 11/10/2014 20:25 |
| 7 | | 40ug/L Vol Std 11-10 | 1110L11.D | 11/10/2014 20:54 |
| 8 | | 100ug/L Vol Std 11-1 | 1110L12.D | 11/10/2014 21:22 |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 19.1 |
| 75 | 30 - 60% of mass 95 | 49.5 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.7 |
| 173 | 0 - 2.09% of mass 174 | 0.0 |
| 174 | 50 - 100% of mass 95 | 86.7 |
| 175 | 5 - 9% of mass 174 | 7.7 |
| 176 | 94.9 - 101% of mass 174 | 95.6 |
| 177 | 5 - 9% of mass 176 | 6.5 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 1~~110L15.D~~ 74701
Matrix: Water np 11-18-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: np 11-18-14 ~~Loki~~ 74701
Date Analyzed: 11/10/2014
Instrument: Loki
Time Analyzed: 22:46

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 10ug/L Std 11-10-14( | 1110L16.D | 11/10/2014 23:14 |
| 2 | | 10ug/L Std 11-10-14( | 1110L17.D | 11/10/2014 23:42 |
| 3 | | | | |
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| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 21.9 |
| 75 | 30 - 60% of mass 95 | 52.9 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.2 |
| 173 | 0 - 2.09% of mass 174 | 2.2 |
| 174 | 50 - 100% of mass 95 | 85.0 |
| 175 | 5 - 9% of mass 174 | 7.9 |
| 176 | 94.9 - 101% of mass 174 | 96.0 |
| 177 | 5 - 9% of mass 176 | 7.1 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: ~~1117L09.D~~ 74701
Matrix: Water hp 11-18-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: ~~Loki~~ 74701 hp 11-18-14
Date Analyzed: 11/17/2014
Instrument: Loki
Time Analyzed: 11:46

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 10ug/L Vol Std 11-17 | 1117L10.D | 11/17/2014 12:14 |
| 2 | Lab Control Spike | 141117A LCS-1WL | 1117L11.D | 11/17/2014 12:42 |
| 3 | Blank | 141117A BLK-1WL | 1117L14.D | 11/17/2014 14:07 |
| 4 | | AZ05593W458 MS-1WL | 1117L31.D | 11/17/2014 22:04 |
| 5 | | AZ05593W458 MSD-1WL | 1117L32.D | 11/17/2014 22:32 |
| 6 | | | | |
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| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 19.5 |
| 75 | 30 - 60% of mass 95 | 51.5 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.7 |
| 173 | 0 - 2.09% of mass 174 | 0.0 |
| 174 | 50 - 100% of mass 95 | 91.1 |
| 175 | 5 - 9% of mass 174 | 7.6 |
| 176 | 94.9 - 101% of mass 174 | 96.2 |
| 177 | 5 - 9% of mass 176 | 6.2 |

8A

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.

Contract: Review

Lab Code:

SDG No.: 74701

Lab File ID (Standard): 1024L11.D

Date Analyzed: 10/24/14

Instrument ID: Loki

Time Analyzed: 15:09

GC Column:

ID:

Heated Purge: (Y/N)

| | | Fluorobenzene (IS) | | Chlorobenzene-D5 (IS) | | 1,4-Dichlorobenzene-D (IS) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 423488 | 5.95 | 363136 | 9.18 | 248000 | 11.51 |
| | UPPER LIMIT | 846976 | 6.45 | 726272 | 9.68 | 496000 | 12.01 |
| | LOWER LIMIT | 211744 | 5.45 | 181568 | 8.68 | 124000 | 11.01 |
| | SAMPLE NO. | | | | | | |
| 01 | 10ug/L Std 10-26-14(CC | 397248 | 5.95 | 332288 | 9.18 | 219840 | 11.51 |
| 02 | 141026A LCS-1WL | 395328 | 5.95 | 342336 | 9.18 | 219328 | 11.51 |
| 03 | 141026A BLK-1WL | 333440 | 5.95 | 314944 | 9.18 | 147328 | 11.51 |
| 04 | AZ05594W01 | 312640 | 5.95 | 299648 | 9.18 | 142656 | 11.51 |
| 05 | AZ05593W01 | 302912 | 5.95 | 289664 | 9.18 | 137408 | 11.51 |
| 06 | | | | | | | |
| 07 | | | | | | | |
| 08 | | | | | | | |
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| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.

Contract: Review

Lab Code:

SDG No.: 74701

Lab File ID (Standard): 1110L10.D

Date Analyzed: 11/10/14

Instrument ID: Loki

Time Analyzed: 20:25

GC Column: ID:

Heated Purge: (Y/N)

| | | Fluorobenzene (IS) | | Chlorobenzene-D5 (IS) | | 1,4-Dichlorobenzene-D (IS) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 650240 | 5.95 | 558080 | 9.18 | 338304 | 11.51 |
| | UPPER LIMIT | 1300480 | 6.45 | 1116160 | 9.68 | 676608 | 12.01 |
| | LOWER LIMIT | 325120 | 5.45 | 279040 | 8.68 | 169152 | 11.01 |
| | SAMPLE NO. | | | | | | |
| 01 | 10ug/L Vol Std 11-17-14 | 572224 | 5.95 | 471168 | 9.18 | 281408 | 11.50 |
| 02 | AZ05593W458 MS-1WL | 536640 | 5.95 | 438208 | 9.18 | 259200 | 11.50 |
| 03 | AZ05593W458 MSD-1W | 548672 | 5.95 | 456448 | 9.18 | 264512 | 11.50 |
| 04 | | | | | | | |
| 05 | | | | | | | |
| 06 | | | | | | | |
| 07 | | | | | | | |
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| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

# EPA METHOD 8260C
# Volatile Organic Compounds
# Sample Data

APPL, INC.

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW06-GW-01**
Sample Collection Date: 10/21/2014

ARF: 74701
**APPL ID: AZ05593**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/2014 | 10/26/2014 |

Quant Method: LALLW2.M
Run #: 1026L18
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 11/17/2014 3:26:56 PM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW06-GW-01**
Sample Collection Date: 10/21/2014

ARF: 74701
**APPL ID: AZ05593**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 109 | 70-120 | | | % | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 98.6 | 75-120 | | | % | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 105 | 85-115 | | | % | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 101 | 85-120 | | | % | 10/26/2014 | 10/26/2014 |

Quant Method: LALLW2.M
Run #: 1026L18
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 11/17/2014 3:26:56 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141024\1026L18.D Vial: 17
Acq On : 26 Oct 14 18:43 Operator: DG,SV,RS
Sample : AZ05593W01 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 29 15:16 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 302912 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 289664 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 137408 | 25.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 187529 | 28.41 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 104.598% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 210150 | 30.06 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 108.542% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 544835 | 26.54 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 101.486% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 171529 | 21.92 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 98.601% | |

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
1026L18.D LALLW2.M Mon Nov 17 15:53:18 2014

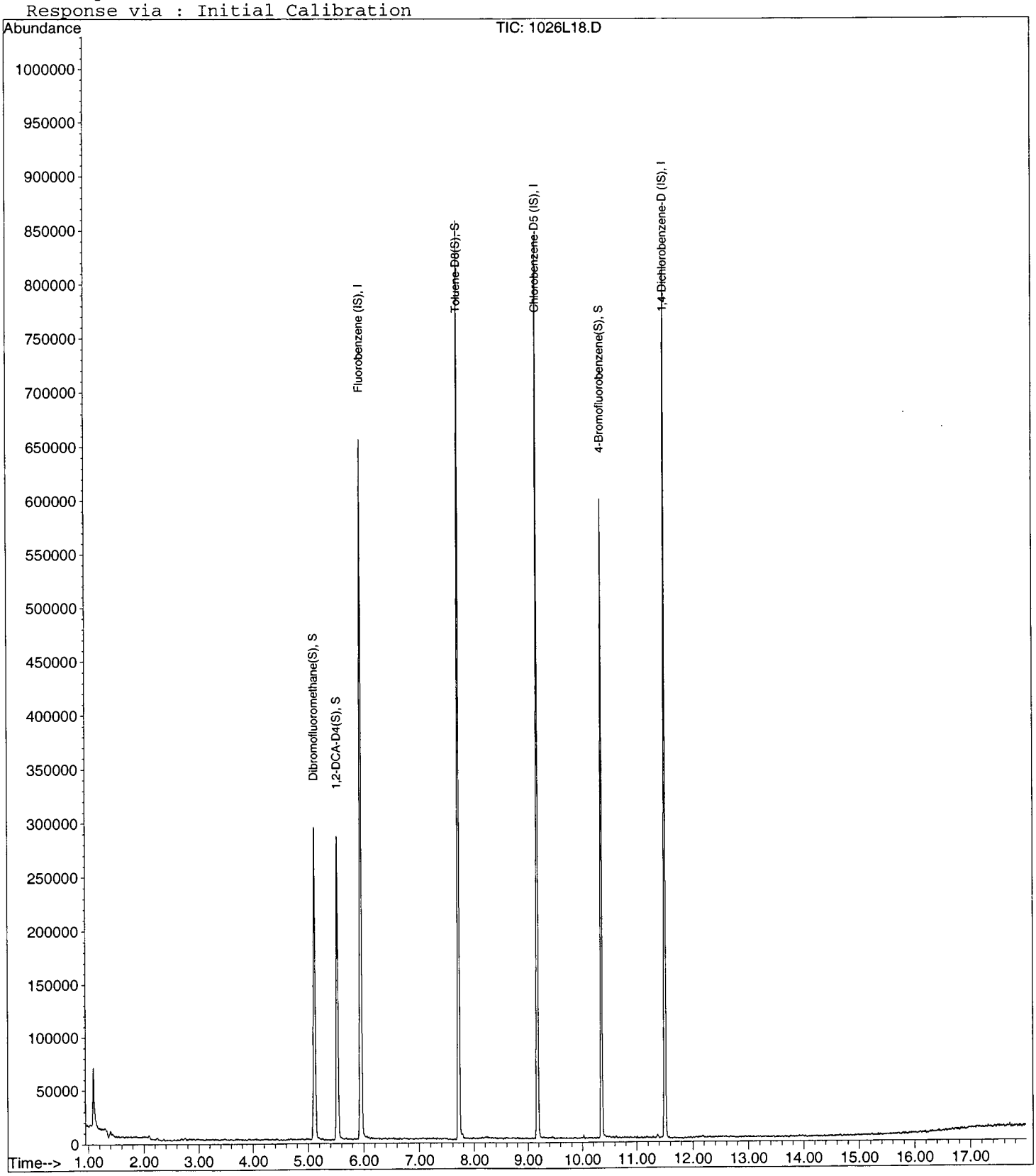
Quantitation Report

Data File : M:\LOKI\DATA\141024\1026L18.D
Acq On : 26 Oct 14 18:43
Sample : AZ05593W01
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 17
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 15:16 2014 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: TB102114**
Sample Collection Date: 10/21/2014

ARF: 74701
**APPL ID: AZ05594**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | BROMOMETHANE | 1.2 J | 2.0 | 0.50 | 0.24 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/2014 | 10/26/2014 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L13
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 11/17/2014 3:26:56 PM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: TB102114**
Sample Collection Date: 10/21/2014

ARF: 74701
**APPL ID: AZ05594**
QCG: #86CRE-141026AL-191309

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 108 | 70-120 | | | % | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 98.6 | 75-120 | | | % | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 106 | 85-115 | | | % | 10/26/2014 | 10/26/2014 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 101 | 85-120 | | | % | 10/26/2014 | 10/26/2014 |

J = Estimated value.

Quant Method: LALLW2.M
Run #: 1026L13
Instrument: Loki
Sequence: 141024
Dilution Factor: 1
Initials: SV

*Printed: 11/17/2014 3:26:56 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141024\1026L13.D Vial: 12
Acq On : 26 Oct 14 16:22 Operator: DG,SV,RS
Sample : AZ05594W01 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 29 15:11 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 312640 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 299648 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 142656 | 25.00 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 196515 | 28.85 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 106.200% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 216262 | 29.97 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 108.221% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 558772 | 26.31 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 100.615% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 177387 | 21.91 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 98.570% | |
| **Target Compounds** | | | | | Qvalue |
| 6) Bromomethane | 1.45 | 94 | 6468 | 1.19 ppb | 94 |

(#) = qualifier out of range (m) = manual integration

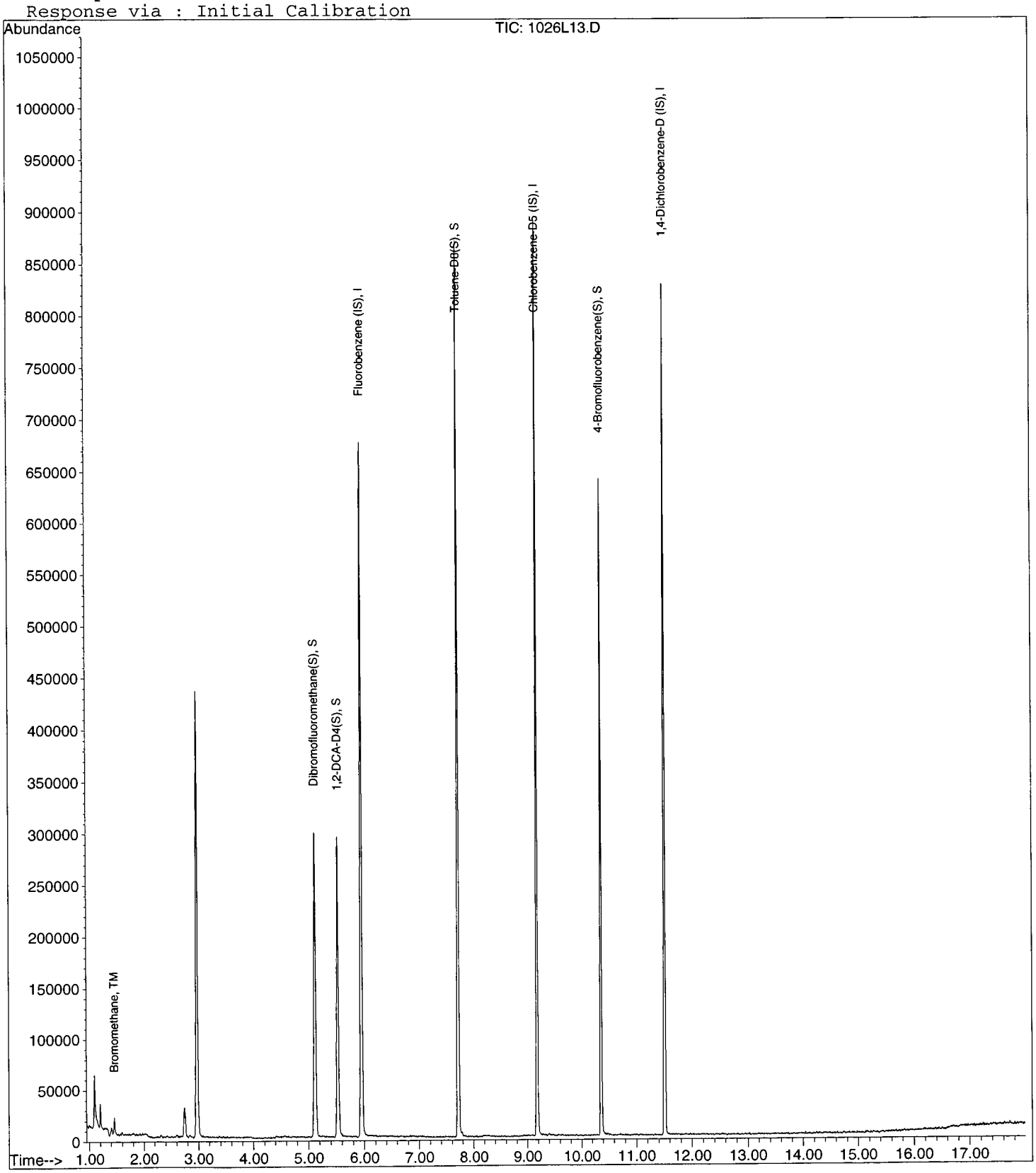
Quantitation Report

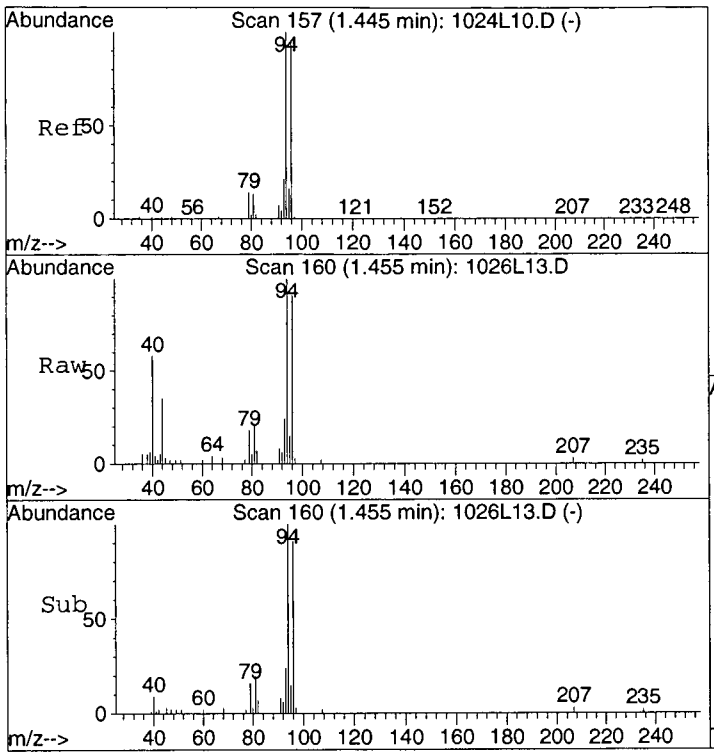
Data File : M:\LOKI\DATA\141024\1026L13.D
Acq On : 26 Oct 14 16:22
Sample : AZ05594W01
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 15:11 2014 Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

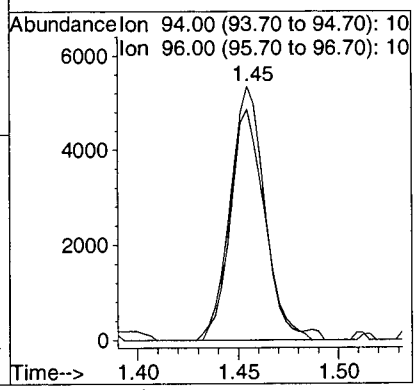





#6
Bromomethane
Concen: 1.19 ppb
RT: 1.45 min Scan# 160
Delta R.T. 0.01 min
Lab File: 1026L13.D
Acq: 26 Oct 14 16:22

Tgt Ion: 94 Resp: 6468

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 94 | 100 | | |
| 96 | 90.9 | 67.5 | 125.3 |



# EPA METHOD 8260C
# Volatile Organic Compounds
# Calibration Data

APPL, INC.

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 10/24/14
Instrument: Loki

Initials:

| | | Compound | 0.1 | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1024L05 D | 1024L06 D | 1024L07 D | 1024L08.D | 1024L09.D | 1024L10 D | 1024L11.D | 1024L12.D | 1024L13 D | | | | | |
| 1 | I | Fluorobenzene (IS) | ISTD | | | | | | | | | | | | | |
| 2 | TML | Dichlorodifluoromethane | | 0.4471 | 0.5328 | 0.4546 | 0.3066 | 0.3043 | 0.3185 | 0.3013 | 0.3216 | | 0.37 | 24 | TML | 0.999 |
| 3 | TM | Freon 114 | | 0.3222 | 0.3065 | 0.3512 | 0.2548 | 0.2555 | 0.2452 | 0.2611 | 0.2757 | | 0.28 | 13 | TM | |
| 4 | TM**L | Chloromethane | | 1.011 | 0.8594 | 0.8542 | 0.5506 | 0.5124 | 0.4798 | 0.4802 | 0.4862 | | 0.65 | 33 | TM**L | 1.000 |
| 5 | TM* | Vinyl chloride | | 0.7441 | 0.7516 | 0.6763 | 0.5030 | 0.4891 | 0.4716 | 0.4720 | 0.4860 | | 0.57 | 22 | TM* | |
| 6 | TML | Bromomethane | | 0.6825 | 0.5298 | 0.5059 | 0.3505 | 0.3257 | | | | | 0.48 | 30 | TML | 0.999 |
| 7 | TML | Chloroethane | | | 0.3590 | 0.3710 | 0.2615 | 0.2390 | 0.2267 | 0.2277 | | | 0.28 | 24 | TML | 1.000 |
| 8 | TM | Dichlorofluoromethane | | | 1.267 | 1.134 | 1.013 | 0.9407 | 0.8410 | 0.9197 | 0.9142 | | 1.0 | 15 | TM | |
| 9 | TM | Trichlorofluoromethane | | | 0.9130 | 0.8977 | 0.6819 | 0.6851 | 0.6637 | 0.6887 | 0.6972 | | 0.75 | 15 | TM | |
| 10 | TM | Acrolein | | 0.0585 | 0.0601 | 0.0629 | 0.0561 | 0.0551 | 0.0526 | 0.0494 | 0.0538 | | 0.06 | 7.7 | TM | |
| 11 | TML | Acetone | | | 0.4654 | 0.2575 | 0.1663 | 0.1460 | 0.1257 | 0.1201 | 0.1251 | | 0.20 | 63 | TML | 0.999 |
| 12 | TM | Freon-113 | | 0.4213 | 0.5234 | 0.5107 | 0.4182 | 0.3871 | 0.3730 | 0.4021 | 0.4080 | | 0.43 | 13 | TM | |
| 13 | TM* | 1,1-DCE | 0.6894 | 0.7980 | 0.8367 | 0.8094 | 0.6327 | 0.6356 | 0.5990 | 0.6261 | 0.6637 | | 0.70 | 13 | TM* | |
| 14 | TM | t-Butanol | | 0.0194 | 0.0173 | 0.0161 | 0.0139 | 0.0146 | 0.0138 | 0.0143 | 0.0137 | | 0.02 | 13 | TM | |
| 15 | TM | Acetonitrile | | | 0.0750 | 0.0734 | 0.0656 | 0.0606 | 0.0566 | 0.0502 | 0.0594 | | 0.06 | 14 | TM | |
| 16 | TML | Methyl Acetate | | 0:7286 | 0.5852 | 0.4859 | 0.4406 | 0.4141 | 0.3787 | 0.3709 | | | 0.49 | 27 | TML | 0.999 |
| 17 | TM | Iodomethane | | | 0.1706 | 0.1688 | 0.1397 | 0.1374 | 0.1406 | 0.1630 | | | 0.15 | 10 | TM | |
| 18 | TM | Acrylonitrile | | | 0.1516 | 0.1583 | 0.1321 | 0.1220 | 0.1178 | 0.1272 | 0.1263 | | 0.13 | 11 | TM | |
| 19 | TML | Methylene chloride | | | 0.7472 | 0.6765 | 0.5715 | 0.5373 | 0.4680 | 0.5002 | 0.4929 | | 0.57 | 18 | TML | 1.000 |
| 20 | TML | Carbon disulfide | | | 1.596 | 1.478 | 1.230 | 1.150 | 1.059 | 1.126 | 1.166 | | 1.3 | 16 | TML | 0.999 |
| 21 | TM | Methyl t-butyl ether (MtBE) | | 1.135 | 1.203 | 1.090 | 1.044 | 1.027 | 1.008 | 1.151 | 1.247 | | 1.1 | 7.7 | TM | |
| 22 | TM | Trans-1,2-DCE | | 0.5930 | 0.5610 | 0.5408 | 0.4659 | 0.4307 | 0.4066 | 0.4383 | 0.4685 | | 0.49 | 14 | TM | |
| 23 | TM | Diisopropyl Ether | | 1.379 | 1.265 | 1.271 | 1.125 | 1.205 | 1.219 | 1.437 | 1.544 | | 1.3 | 11 | TM | |
| 24 | TM** | 1,1-DCA | | 1.198 | 1.004 | 1.022 | 0.9069 | 0.8656 | 0.7992 | 0.8326 | 0.8273 | | 0.93 | 14 | TM** | |
| 25 | TM | Hexane | | 0.3855 | 0.3701 | 0.3755 | 0.3006 | 0.3256 | 0.3249 | 0.3947 | 0.4653 | | 0.37 | 14 | TM | |
| 26 | TM | Vinyl Acetate | | | 0.3498 | 0.3228 | 0.2685 | 0.2674 | 0.2505 | 0.2778 | 0.2802 | | 0.29 | 12 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | | 1.101 | 1.022 | 1.006 | 1.037 | 1.030 | 1.041 | 1.228 | 1.342 | | 1.1 | 11 | TM | |
| 28 | TML | MEK (2-Butanone) | | | 0.2722 | 0.2008 | 0.1932 | 0.1834 | 0.1541 | 0.1755 | 0.1710 | | 0.19 | 20 | TML | 0.999 |
| 29 | TM | Cis-1,2-DCE | | 0.5438 | 0.6042 | 0.5454 | 0.4926 | 0.5008 | 0.4877 | 0.5296 | 0.5447 | | 0.53 | 7.2 | TM | |
| 30 | TML | 2,2-Dichloropropane | | 0.2796 | 0.3160 | 0.3120 | 0.2420 | 0.2323 | 0.2125 | 0.2210 | 0.2234 | | 0.25 | 16 | TML | 1.000 |
| 31 | TM* | Chloroform | 0.9907 | 1.080 | 1.078 | 1.053 | 0.9639 | 0.8868 | 0.8011 | 0.8486 | 0.8284 | | 0.95 | 12 | TM* | |
| 32 | TM | Bromochloromethane | | 0.2676 | 0.2986 | 0.3428 | 0.2848 | 0.2673 | 0.2410 | 0.2417 | 0.2496 | | 0.27 | 13 | TM | |
| 33 | S | Dibromofluoromethane(S) | | 0.6168 | 0.6345 | 0.5864 | 0.5496 | 0.5138 | 0.4905 | 0.4792 | 0.4869 | | 0.54 | 11 | S | |
| 34 | TM | 1,1,1-TCA | | | 0.8275 | 0.9792 | 0.8022 | 0.7439 | 0.6882 | 0.7214 | 0.7264 | | 0.78 | 13 | TM | |
| 35 | TM | Cyclohexane | | | 0.3592 | 0.3563 | 0.2952 | 0.2948 | 0.2926 | 0.3564 | 0.3435 | | 0.33 | 9.8 | TM | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 10/24/14
Instrument: Loki

Initials:

| | | Compound | 0.1 | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | TM | 1,1-Dichloropropene | | 0.5655 | 0.5273 | 0.5390 | 0.5148 | 0.5321 | 0.5277 | 0.5843 | 0.6062 | | 0.55 | 5.9 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | | 0.9469 | 0.9480 | 0.9068 | 0.8650 | 0.9673 | 1.007 | 1.116 | 1.321 | | 1.0 | 14 | TM | |
| 38 | S | 1,2-DCA-D4(S) | | 0.7002 | 0.6504 | 0.6260 | 0.5578 | 0.5478 | 0.5104 | 0.5059 | 0.5173 | | 0.58 | 13 | S | |
| 39 | TML | Carbon Tetrachloride | 0.3244 | 0.5328 | 0.6540 | 0.6704 | 0.6583 | 0.6413 | 0.6041 | 0.6687 | 0.6697 | | 0.60 | 19 | TML | 1.000 |
| 40 | TM | Tert Amyl Methyl Ether | | 1.035 | 1.026 | 0.9848 | 1.013 | 1.083 | 1.074 | 1.217 | 1.297 | | 1.1 | 10.0 | TM | |
| 41 | TM | 1,2-DCA | 0.8305 | 0.8783 | 0.7379 | 0.7476 | 0.7024 | 0.6807 | 0.6105 | 0.6285 | 0.6288 | | 0.72 | 13 | TM | |
| 42 | TM | Benzene | 2.388 | 1.989 | 1.958 | 1.858 | 1.796 | 1.782 | 1.699 | 1.826 | 1.868 | | 1.9 | 11 | TM | |
| 43 | TM | TCE | | 0.5172 | 0.5351 | 0.5497 | 0.4909 | 0.4807 | 0.4354 | 0.4764 | 0.4927 | | 0.50 | 7.3 | TM | |
| 44 | TM | 2-Pentanone | | | 0.2792 | 0.3155 | 0.3135 | 0.3205 | 0.3189 | 0.3453 | 0.3433 | | 0.32 | 6.9 | TM | |
| 45 | TM* | 1,2-Dichloropropane | | 0.6994 | 0.6284 | 0.6508 | 0.5475 | 0.5118 | 0.4810 | 0.5318 | 0.5195 | | 0.57 | 14 | TM* | |
| 46 | TM | Bromodichloromethane | | 0.8199 | 0.8303 | 0.8258 | 0.7404 | 0.6856 | 0.6095 | 0.6686 | 0.6600 | | 0.73 | 12 | TM | |
| 47 | TM | Methyl Cyclohexane | | 0.5411 | 0.5729 | 0.5064 | 0.4599 | 0.4855 | 0.5148 | 0.6208 | 0.7092 | | 0.55 | 15 | TM | |
| 48 | TM | Dibromomethane | | 0.4072 | 0.3839 | 0.3689 | 0.3498 | 0.3293 | 0.2879 | 0.3082 | 0.2874 | | 0.34 | 13 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | | | 0.0508 | 0.0509 | 0.0482 | 0.0404 | 0.0459 | 0.0525 | 0.0640 | | 0.05 | 14 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | | | 0.3892 | 0.4766 | 0.3567 | 0.3338 | 0.3334 | 0.3638 | 0.4040 | | 0.38 | 13 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | | 0.5255 | 0.4672 | 0.4584 | 0.4032 | 0.3992 | 0.3579 | 0.3980 | 0.4025 | | 0.43 | 12 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | | 0.9231 | 0.8823 | 0.8423 | 0.7133 | 0.7161 | 0.6855 | 0.7864 | 0.8235 | | 0.80 | 11 | TM | |
| 53 | TM* | Toluene | 1.668 | 1.812 | 1.708 | 1.711 | 1.814 | 1.917 | 1.869 | 2.054 | 2.055 | | 1.8 | 7.8 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | | 0.8491 | 0.7567 | 0.6847 | 0.6591 | 0.6379 | 0.6026 | 0.6819 | 0.7137 | | 0.70 | 11 | TM | |
| 55 | TM | 1,1,2-TCA | | 0.4240 | 0.4913 | 0.4506 | 0.4064 | 0.3819 | 0.3421 | 0.3686 | 0.3652 | | 0.40 | 12 | TM | |
| 56 | TM | 2-Hexanone | | 0.2767 | 0.2304 | 0.2409 | 0.2327 | 0.2144 | 0.2220 | 0.2449 | 0.2814 | | 0.24 | 10 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | | | | | | | | | | | |
| 58 | S | Toluene-D8(S) | | 1.544 | 1.775 | 1.666 | 1.693 | 1.839 | 1.831 | 1.904 | 1.922 | | 1.8 | 7.3 | S | |
| 59 | TM | 1,2-EDB | | 0.5575 | 0.5317 | 0.5088 | 0.5320 | 0.5138 | 0.4655 | 0.5044 | 0.4982 | | 0.51 | 5.3 | TM | |
| 60 | TM | Tetrachloroethene | 0.7833 | 0.8054 | 0.7968 | 0.7962 | 0.7160 | 0.7169 | 0.6403 | 0.6469 | 0.6287 | | 0.73 | 10 | TM | |
| 61 | TM | 1-Chlorohexane | | | 0.4845 | 0.4915 | 0.5154 | 0.5254 | 0.5538 | 0.6653 | 0.6973 | | 0.56 | 15 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | | 0.8505 | 0.7306 | 0.6793 | 0.7075 | 0.6677 | 0.5984 | 0.6183 | 0.5925 | | 0.68 | 13 | TM | |
| 63 | TM | m&p-Xylene | 0.7444 | 0.7886 | 0.7504 | 0.7124 | 0.8456 | 0.9248 | 0.9319 | 1.025 | 1.013 | | 0.86 | 14 | TM | |
| 64 | TM | o-Xylene | 0.7328 | 0.7206 | 0.7081 | 0.7428 | 0.7747 | 0.8390 | 0.8401 | 0.9408 | 0.9926 | | 0.81 | 13 | TM | |
| 65 | TM | Styrene | | 1.125 | 1.147 | 1.150 | 1.313 | 1.491 | 1.543 | | | | 1.3 | 14 | TM | |
| 66 | S | 4-Bromofluorobenzene(S) | | 0.6140 | 0.6086 | 0.5677 | 0.6356 | 0.7143 | 0.7244 | 0.7553 | 0.7832 | | 0.68 | 12 | S | |
| 67 | TM | 1,3-Dichloropropane | | 0.9831 | 0.7780 | 0.8244 | 0.8934 | 0.8643 | 0.7762 | 0.8472 | 0.8440 | | 0.85 | 7.8 | TM | |
| 68 | TM | Dibromochloromethane | | 0.5850 | 0.6678 | 0.6693 | 0.6806 | 0.6488 | 0.6007 | 0.6223 | 0.6153 | | 0.64 | 5.6 | TM | |
| 69 | TM** | Chlorobenzene | | 1.807 | 1.586 | 1.496 | 1.624 | 1.600 | 1.459 | 1.570 | 1.555 | | 1.6 | 6.6 | TM** | |
| 70 | TM* | Ethylbenzene | 1.787 | 1.956 | 1.948 | 2.006 | 2.175 | 2.305 | 2.295 | 2.576 | 2.532 | | 2.2 | 13 | TM* | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 10/24/14
Instrument: Loki

Initials:

| | | Compound | 0.1 | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | TM** | Bromoform | | 0.3933 | 0.4621 | 0.5080 | 0.5025 | 0.4793 | 0.4310 | 0.4367 | 0.4637 | | 0.46 | 8.4 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | | | | | | | | | | | |
| 73 | TM | Isopropylbenzene | | 3.319 | 3.101 | 2.937 | 2.981 | 2.878 | 2.991 | 3.514 | 3.649 | | 3.2 | 9.1 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | | | 1.480 | 1.350 | 1.162 | 1.035 | 0.9182 | 0.9731 | 0.9665 | | 1.1 | 19 | TM**L | 1.000 |
| 75 | TM | 1,2,3-Trichloropropane | | | 0.3347 | 0.3857 | 0.3408 | 0.3138 | 0.2897 | 0.3029 | 0.2995 | | 0.32 | 10 | TM | |
| 76 | TM | t-1,4-Dichloro-2-Butene | | | 0.2298 | 0.1928 | 0.1875 | 0.2034 | 0.1755 | 0.2022 | 0.2097 | | 0.20 | 8.7 | TM | |
| 77 | TM | Bromobenzene | | 1.144 | 1.102 | 1.097 | 1.108 | 1.066 | 1.008 | 1.067 | 1.052 | | 1.1 | 3.8 | TM | |
| 78 | TM | n-Propylbenzene | | 3.878 | 3.694 | 3.393 | 3.539 | 3.773 | 3.877 | 4.463 | 4.428 | | 3.9 | 9.9 | TM | |
| 79 | TM | 4-Ethyltoluene | | 3.357 | 3.189 | 2.796 | 3.086 | 3.412 | 3.544 | 3.972 | 3.917 | | 3.4 | 12 | TM | |
| 80 | TM | 2-Chlorotoluene | | 2.588 | 2.513 | 2.118 | 2.351 | 2.508 | 2.468 | 2.731 | 2.642 | | 2.5 | 7.6 | TM | |
| 81 | TM | 1,3,5-Trimethylbenzene | | 2.947 | 2.572 | 2.401 | 2.877 | 3.201 | 3.147 | 3.438 | 3.344 | | 3.0 | 12 | TM | |
| 82 | TM | 4-Chlorotoluene | | 2.950 | 2.614 | 2.644 | 2.964 | 3.103 | 3.017 | 3.240 | 3.152 | | 3.0 | 7.6 | TM | |
| 83 | TM | Tert-Butylbenzene | | 2.384 | 2.333 | 2.166 | 2.293 | 2.255 | 2.284 | 2.677 | 2.788 | | 2.4 | 9.1 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | | 2.750 | 2.499 | 2.389 | 2.667 | 2.888 | 3.049 | 3.467 | 3.448 | | 2.9 | 14 | TM | |
| 85 | TM | Sec-Butylbenzene | | 3.563 | 3.122 | 3.065 | 3.313 | 3.515 | 3.545 | 4.009 | 4.144 | | 3.5 | 11 | TM | |
| 86 | TM | p-Isopropyltoluene | | 2.715 | 2.617 | 2.700 | 2.962 | 2.987 | 3.129 | 3.514 | 3.634 | | 3.0 | 12 | TM | |
| 87 | TM | Benzyl Chloride | | 1.762 | 1.525 | 1.544 | 1.414 | 1.329 | 1.218 | 1.261 | 1.410 | | 1.4 | 12 | TM | |
| 88 | TM | 1,3-DCB | | 2.364 | 2.050 | 1.990 | 2.205 | 2.092 | 1.968 | 2.040 | 2.066 | | 2.1 | 6.2 | TM | |
| 89 | TM | 1,4-DCB | | 2.664 | 2.248 | 2.280 | 2.401 | 2.212 | 2.068 | 2.104 | 2.144 | | 2.3 | 8.5 | TM | |
| 90 | TM | n-Butylbenzene | | 2.462 | 2.605 | 2.528 | 2.571 | 2.683 | 2.715 | 3.326 | 3.496 | | 2.8 | 14 | TM | |
| 91 | TM | 1,2-DCB | | 2.305 | 2.143 | 2.175 | 2.113 | 1.911 | 1.831 | 1.909 | 2.072 | | 2.1 | 7.8 | TM | |
| 92 | TML | Hexachloroethane | | 0.9871 | 0.8350 | 0.9429 | 0.7460 | 0.6848 | 0.6049 | 0.6336 | 0.6600 | | 0.76 | 19 | TML | 0.999 |
| 93 | TML | 1,2-Dibromo-3-chloropropane | | | 0.1752 | 0.1865 | 0.1491 | 0.1319 | 0.1290 | 0.1271 | | | 0.15 | 17 | TML | 1.000 |
| 94 | TM | 1,2,4-Trichlorobenzene | | 1.695 | 1.495 | 1.322 | 1.261 | 1.210 | 1.150 | 1.384 | 1.633 | | 1.4 | 14 | TM | |
| 95 | TM | Hexachlorobutadiene | | | 0.9785 | 0.9462 | 0.8644 | 0.7818 | 0.7054 | 0.7638 | 0.8589 | | 0.84 | 12 | TM | |
| 96 | TM | Naphthalene | | 1.639 | 1.511 | 1.338 | 1.441 | 1.413 | 1.441 | 1.968 | | | 1.5 | 14 | TM | |
| 97 | TM | 1,2,3-Trichlorobenzene | | 1.505 | 1.470 | 1.323 | 1.239 | 1.245 | 1.192 | 1.468 | 1.567 | | 1.4 | 10 | TM | |
| 98 | | | | | | | | | | | | | | | | |
| 99 | | | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | | | | | |
| 103 | | | | | | | | | | | | | | | | |
| 104 | | | | | | | | | | | | | | | | |
| 105 | | | | | | | | | | | | | | | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L05.D
Acq On : 24 Oct 14 12:19
Sample : 0.1ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:17:45 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 313664 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 292352 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 149568 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 1545 | 0.22607 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 0.843% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 1721 | 0.23774 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 0.883% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 3487 | 0.16829 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 0.650% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 1803 | 0.22829 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 0.870% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 519 | 0.31693 ppb | # | 81 |
| 3) Freon 114 | 1.10 | 85 | 299 | 0.08391 ppb | | 97 |
| 4) Chloromethane | 1.14 | 50 | 1919 | -0.07904 ppb | # | 82 |
| 5) Vinyl chloride | 1.21 | 62 | 1350 | 0.18739 ppb | # | 73 |
| 6) Bromomethane | 1.46 | 94 | 1272 | -0.13290 ppb | | 79 |
| 7) Chloroethane | 1.54 | 64 | 629 | -0.33712 ppb | | 87 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 1653 | 0.13118 ppb | | 90 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 1041 | 0.11111 ppb | # | 72 |
| 10) Acrolein | 2.10 | 56 | 4570 | 6.49747 ppb | # | 97 |
| 11) Acetone | 2.25 | 43 | 2046 | 0.23474 ppb | # | 80 |
| 12) Freon-113 | 2.20 | 101 | 736 | 0.13627 ppb | # | 40 |
| 13) 1,1-DCE | 2.18 | 61 | 865 | 0.09864 ppb | # | 55 |
| 14) t-Butanol | 2.87 | 59 | 1197 | 6.19721 ppb | | 93 |
| 15) Acetonitrile | 2.52 | 41 | 5254 | 6.64886 ppb | # | 17 |
| 16) Methyl Acetate | 2.60 | 43 | 1180 | -0.34153 ppb | # | 54 |
| 17) Iodomethane | 2.32 | 142 | 340 | 0.17672 ppb | # | 44 |
| 18) Acrylonitrile | 2.97 | 52 | 144 | 0.08590 ppb | | 74 |
| 19) Methylene chloride | 2.67 | 84 | 1643 | -0.10981 ppb | # | 73 |
| 20) Carbon disulfide | 2.36 | 76 | 2213 | 0.44232 ppb | | 95 |
| 21) Methyl t-butyl ether (MtBE | 3.03 | 73 | 1349 | 0.09658 ppb | # | 61 |
| 22) Trans-1,2-DCE | 2.98 | 96 | 888 | 0.14500 ppb | # | 62 |
| 23) Diisopropyl Ether | 3.73 | 45 | 1630 | 0.09950 ppb | # | 57 |
| 24) 1,1-DCA | 3.54 | 63 | 1817 | 0.15540 ppb | # | 70 |
| 25) Hexane | 3.37 | 57 | 374 | 0.08105 ppb | # | 40 |
| 26) Vinyl Acetate | 3.72 | 43 | 592 | 0.16374 ppb | # | 97 |
| 27) Ethyl tert Butyl Ether | 4.30 | 59 | 1216 | 0.08804 ppb | # | 40 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 44 | -0.14434 ppb | # | 47 |
| 29) Cis-1,2-DCE | 4.41 | 96 | 835 | 0.12531 ppb | # | 53 |
| 31) Chloroform | 4.90 | 83 | 1243 | 0.10452 ppb | | 95 |
| 32) Bromochloromethane | 4.76 | 128 | 306 | 0.08896 ppb | # | 46 |
| 34) 1,1,1-TCA | 5.10 | 97 | 888 | 0.09026 ppb | # | 79 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 609 | 0.08832 ppb | # | 65 |
| 39) Carbon Tetrachloride | 5.33 | 117 | 407 | 0.35571 ppb | # | 53 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 1199 | 0.08758 ppb | # | 49 |
| 41) 1,2-DCA | 5.62 | 62 | 1042 | 0.11597 ppb | # | 71 |
| 42) Benzene | 5.58 | 78 | 2996 | 0.12522 ppb | # | 81 |
| 43) TCE | 6.38 | 95 | 595 | 0.09537 ppb | # | 65 |
| 44) 2-Pentanone | 6.64 | 43 | 20973 | 5.23283 ppb | | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 1012 | 0.14119 ppb | # | 86 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L05.D
Acq On : 24 Oct 14 12:19
Sample : 0.1ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:17:45 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 46) Bromodichloromethane | 6.96 | 83 | 943 | 0.10296 ppb | # | 97 |
| 47) Methyl Cyclohexane | 6.57 | 83 | 576 | 0.08327 ppb | # | 65 |
| 48) Dibromomethane | 6.75 | 93 | 602 | 0.14099 ppb | # | 60 |
| 50) MIBK (methyl isobutyl ket | 7.65 | 43 | 853 | 0.17909 ppb | # | 44 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 492 | 0.09194 ppb | # | 45 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 1878 | 0.18791 ppb | # | 58 |
| 53) Toluene | 7.78 | 91 | 2093 | 0.09040 ppb | | 96 |
| 54) Trans-1,3-Dichloropropene | 8.05 | 75 | 1396 | 0.15936 ppb | | 93 |
| 55) 1,1,2-TCA | 8.22 | 83 | 494 | 0.09751 ppb | # | 50 |
| 56) 2-Hexanone | 8.51 | 43 | 439 | 0.14404 ppb | # | 38 |
| 59) 1,2-EDB | 8.69 | 107 | 586 | 0.09749 ppb | # | 79 |
| 60) Tetrachloroethene | 8.35 | 166 | 916 | 0.10795 ppb | | 84 |
| 61) 1-Chlorohexane | 9.23 | 91 | 548 | 0.08340 ppb | # | 49 |
| 63) m&p-Xylene | 9.46 | 106 | 1741 | 0.17320 ppb | | 92 |
| 64) o-Xylene | 9.84 | 106 | 857 | 0.09046 ppb | | 69 |
| 65) Styrene | 9.86 | 104 | 1488 | 0.09825 ppb | # | 83 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 1130 | 0.11351 ppb | # | 79 |
| 68) Dibromochloromethane | 8.60 | 129 | 942 | 0.12661 ppb | | 91 |
| 69) Chlorobenzene | 9.20 | 112 | 2557 | 0.13777 ppb | | 97 |
| 70) Ethylbenzene | 9.34 | 91 | 2090 | 0.08215 ppb | | 97 |
| 73) Isopropylbenzene | 10.22 | 105 | 1904 | 0.10035 ppb | | 97 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 859 | -0.21448 ppb | # | 77 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 174 | 0.14531 ppb | # | 21 |
| 77) Bromobenzene | 10.49 | 156 | 734 | 0.11357 ppb | | 86 |
| 78) n-Propylbenzene | 10.63 | 91 | 2485 | 0.10704 ppb | # | 80 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 1718 | 0.08423 ppb | | 93 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 1790 | 0.12016 ppb | | 85 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 1564 | 0.08741 ppb | | 89 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 1836 | 0.10366 ppb | # | 75 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 1345 | 0.09377 ppb | # | 59 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 1834 | 0.10590 ppb | | 96 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 1874 | 0.08862 ppb | # | 83 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 2120 | 0.11686 ppb | # | 72 |
| 87) Benzyl Chloride | 11.67 | 91 | 1119 | 0.13053 ppb | # | 59 |
| 88) 1,3-DCB | 11.43 | 146 | 1562 | 0.12451 ppb | # | 85 |
| 89) 1,4-DCB | 11.52 | 146 | 1671 | 0.12330 ppb | # | 65 |
| 90) n-Butylbenzene | 11.90 | 91 | 1878 | 0.11218 ppb | | 95 |
| 91) 1,2-DCB | 11.89 | 146 | 1460 | 0.11861 ppb | | 88 |
| 92) Hexachloroethane | 12.16 | 117 | 401 | 0.14387 ppb | # | 68 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 1199 | 0.14380 ppb | # | 65 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 807 | 0.16007 ppb | # | 58 |
| 96) Naphthalene | 13.74 | 128 | 1140 | 0.12406 ppb | | 95 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 950 | 0.11538 ppb | # | 92 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L06.D
Acq On : 24 Oct 14 12:47
Sample : 0.3ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 311104 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 284736 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 147904 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 4605 | 0.67937 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 2.531% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 5228 | 0.72814 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 2.700% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 10552 | 0.52288 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 2.024% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 4196 | 0.54549 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 2.080% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 1669 | 0.60722 ppb | | 95 |
| 3) Freon 114 | 1.10 | 85 | 1203 | 0.34037 ppb | | 96 |
| 4) Chloromethane | 1.14 | 50 | 3773 | 0.23216 ppb | | 86 |
| 5) Vinyl chloride | 1.22 | 62 | 2778 | 0.38877 ppb | | 84 |
| 6) Bromomethane | 1.45 | 94 | 2548 | 0.19666 ppb | | 91 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 5162 | 0.41303 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 3516 | 0.37836 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 7281 | 10.43707 ppb | # | 85 |
| 11) Acetone | 2.26 | 43 | 2814 | 0.74847 ppb | | 87 |
| 12) Freon-113 | 2.20 | 101 | 1573 | 0.29363 ppb | # | 68 |
| 13) 1,1-DCE | 2.18 | 61 | 2979 | 0.34250 ppb | | 88 |
| 14) t-Butanol | 2.88 | 59 | 2408 | 12.56949 ppb | | 96 |
| 15) Acetonitrile | 2.52 | 41 | 9816 | 12.52423 ppb | # | 1 |
| 17) Iodomethane | 2.30 | 142 | 730 | 0.38255 ppb | # | 55 |
| 18) Acrylonitrile | 2.96 | 52 | 541 | 0.32538 ppb | # | 64 |
| 19) Methylene chloride | 2.68 | 84 | 3329 | 0.16838 ppb | | 98 |
| 20) Carbon disulfide | 2.37 | 76 | 5939 | 0.70119 ppb | | 95 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 4239 | 0.30599 ppb | # | 89 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 2214 | 0.36450 ppb | | 90 |
| 23) Diisopropyl Ether | 3.71 | 45 | 5150 | 0.31695 ppb | # | 83 |
| 24) 1,1-DCA | 3.53 | 63 | 4471 | 0.38553 ppb | # | 80 |
| 25) Hexane | 3.37 | 57 | 1439 | 0.31442 ppb | # | 70 |
| 26) Vinyl Acetate | 3.70 | 43 | 1266 | 0.35305 ppb | # | 73 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 4109 | 0.29995 ppb | # | 88 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 1072 | 0.33949 ppb | # | 47 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 2030 | 0.30715 ppb | | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 1044 | 0.27854 ppb | | 91 |
| 31) Chloroform | 4.90 | 83 | 4032 | 0.34182 ppb | | 95 |
| 32) Bromochloromethane | 4.76 | 128 | 999 | 0.29281 ppb | | 86 |
| 34) 1,1,1-TCA | 5.10 | 97 | 3994 | 0.40932 ppb | | 95 |
| 35) Cyclohexane | 5.16 | 41 | 1558 | 0.38137 ppb | # | 58 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 2111 | 0.30865 ppb | # | 86 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 3535 | 0.28132 ppb | # | 19 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 1989 | 0.54581 ppb | | 90 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 3865 | 0.28463 ppb | # | 90 |
| 41) 1,2-DCA | 5.63 | 62 | 3279 | 0.36795 ppb | # | 71 |
| 42) Benzene | 5.58 | 78 | 7425 | 0.31288 ppb | | 93 |
| 43) TCE | 6.37 | 95 | 1931 | 0.31205 ppb | | 95 |
| 44) 2-Pentanone | 6.64 | 43 | 37032 | 9.31564 ppb | | 91 |

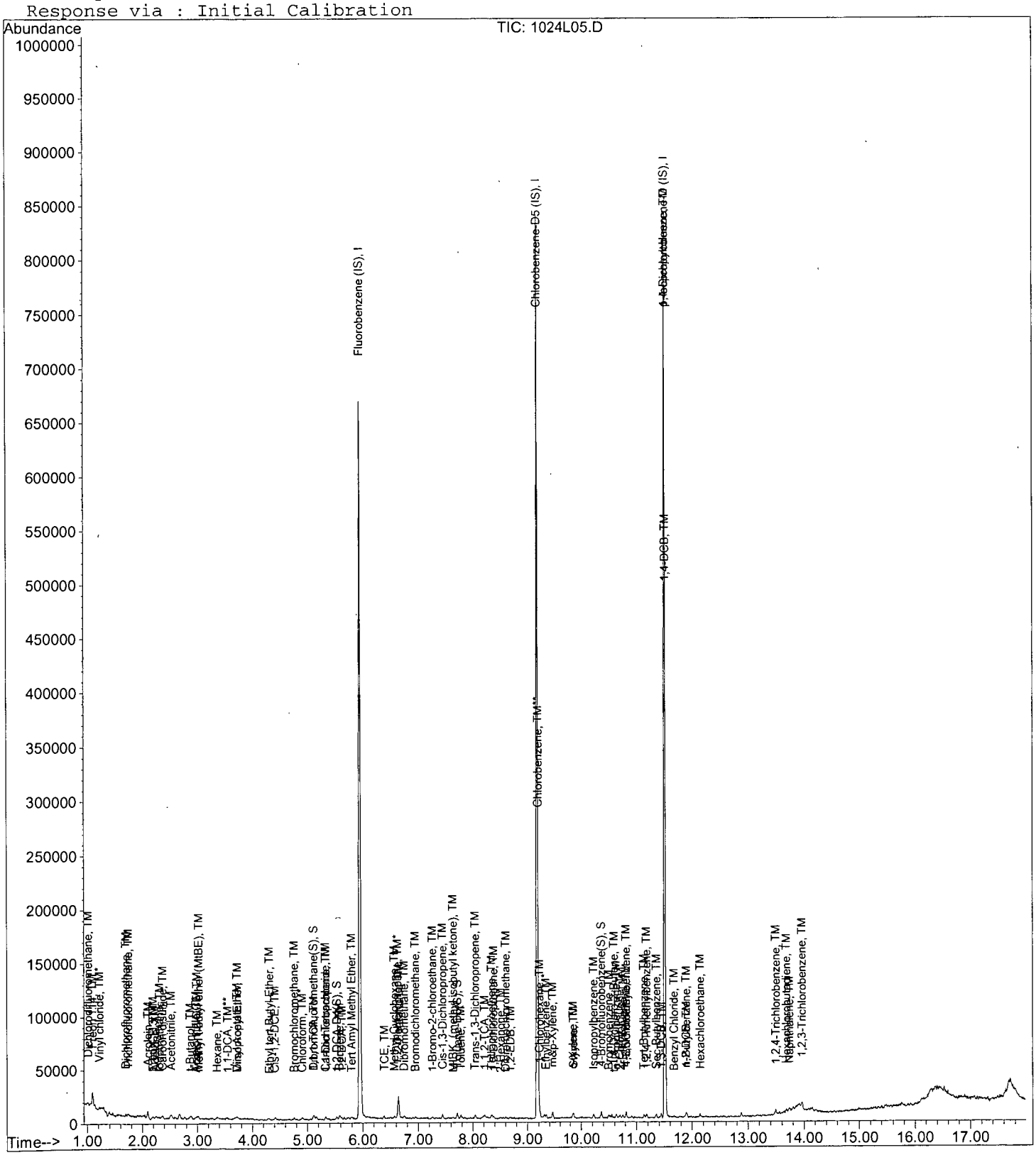
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L05.D  Vial: 4
Acq On : 24 Oct 14 12:19  Operator: DG,SV,RS
Sample : 0.1ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L06.D
Acq On : 24 Oct 14 12:47
Sample : 0.3ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 45) 1,2-Dichloropropane | 6.62 | 63 | 2611 | 0.36728 | ppb | # | 86 |
| 46) Bromodichloromethane | 6.95 | 83 | 3061 | 0.33695 | ppb | # | 92 |
| 47) Methyl Cyclohexane | 6.57 | 83 | 2020 | 0.29442 | ppb | # | 68 |
| 48) Dibromomethane | 6.75 | 93 | 1520 | 0.35892 | ppb | # | 85 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 150 | 0.23923 | ppb | # | 1 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 1698 | 0.35943 | ppb | # | 85 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 1962 | 0.36967 | ppb | | 87 |
| 52) Cis-1,3-Dichloropropene | 7.45 | 75 | 3446 | 0.34764 | ppb | # | 66 |
| 53) Toluene | 7.79 | 91 | 6766 | 0.29463 | ppb | | 81 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 3170 | 0.36485 | ppb | | 85 |
| 55) 1,1,2-TCA | 8.22 | 83 | 1583 | 0.31504 | ppb | | 97 |
| 56) 2-Hexanone | 8.51 | 43 | 1033 | 0.34171 | ppb | | 93 |
| 59) 1,2-EDB | 8.69 | 107 | 1905 | 0.32542 | ppb | | 95 |
| 60) Tetrachloroethene | 8.34 | 166 | 2752 | 0.33299 | ppb | | 85 |
| 61) 1-Chlorohexane | 9.22 | 91 | 1557 | 0.24330 | ppb | | 89 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 2906 | 0.37489 | ppb | | 90 |
| 63) m&p-Xylene | 9.46 | 106 | 5389 | 0.55047 | ppb | | 100 |
| 64) o-Xylene | 9.85 | 106 | 2462 | 0.26681 | ppb | | 74 |
| 65) Styrene | 9.87 | 104 | 3845 | 0.26067 | ppb | | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 3359 | 0.34643 | ppb | # | 80 |
| 68) Dibromochloromethane | 8.60 | 129 | 1999 | 0.27587 | ppb | | 86 |
| 69) Chlorobenzene | 9.21 | 112 | 6175 | 0.34161 | ppb | | 87 |
| 70) Ethylbenzene | 9.34 | 91 | 6685 | 0.26978 | ppb | | 99 |
| 71) Bromoform | 10.02 | 173 | 1344 | 0.25677 | ppb | # | 79 |
| 73) Isopropylbenzene | 10.22 | 105 | 5891 | 0.31397 | ppb | | 91 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 2759 | 0.12115 | ppb | # | 78 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 774 | 0.40396 | ppb | | 82 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 490 | 0.41382 | ppb | # | 21 |
| 77) Bromobenzene | 10.50 | 156 | 2030 | 0.31762 | ppb | | 93 |
| 78) n-Propylbenzene | 10.63 | 91 | 6883 | 0.29981 | ppb | | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 5959 | 0.29545 | ppb | | 92 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 4594 | 0.31186 | ppb | | 96 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 5230 | 0.29557 | ppb | | 91 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 5236 | 0.29895 | ppb | | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 4231 | 0.29830 | ppb | | 85 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 4881 | 0.28502 | ppb | | 96 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 6324 | 0.30242 | ppb | | 91 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 4818 | 0.26857 | ppb | # | 80 |
| 87) Benzyl Chloride | 11.67 | 91 | 3128 | 0.36897 | ppb | | 90 |
| 88) 1,3-DCB | 11.44 | 146 | 4195 | 0.33816 | ppb | | 94 |
| 89) 1,4-DCB | 11.53 | 146 | 4729 | 0.35287 | ppb | | 96 |
| 90) n-Butylbenzene | 11.91 | 91 | 4370 | 0.26397 | ppb | | 90 |
| 91) 1,2-DCB | 11.89 | 146 | 4091 | 0.33610 | ppb | | 83 |
| 92) Hexachloroethane | 12.15 | 117 | 1752 | 0.49339 | ppb | | 91 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 439 | 0.07042 | ppb | # | 61 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 3009 | 0.36493 | ppb | | 82 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 2132 | 0.42763 | ppb | | 93 |
| 96) Naphthalene | 13.72 | 128 | 2909 | 0.32013 | ppb | | 95 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 2671 | 0.32805 | ppb | # | 84 |

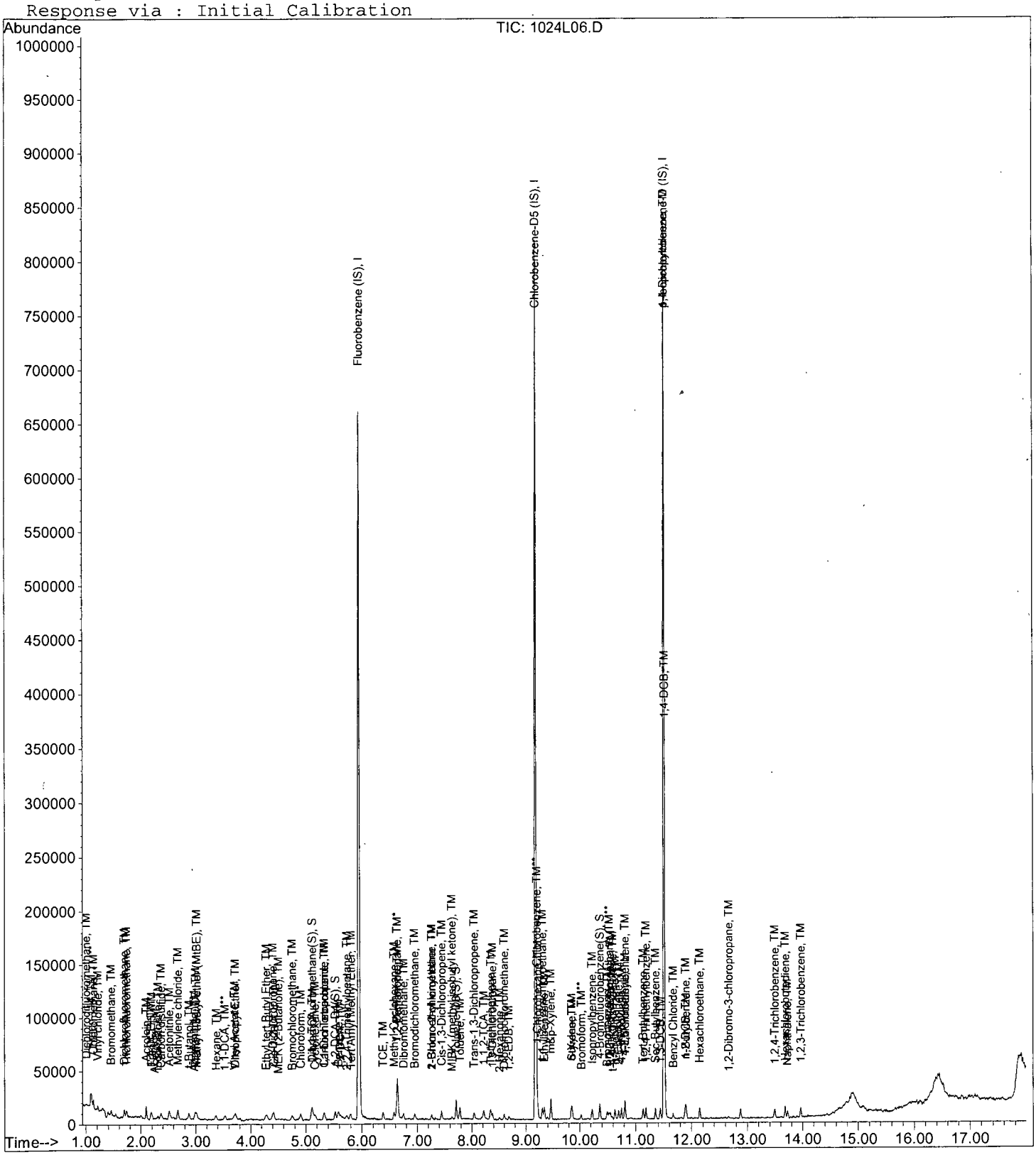
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L06.D  Vial: 5
Acq On : 24 Oct 14 12:47  Operator: DG,SV,RS
Sample : 0.3ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L07.D
Acq On : 24 Oct 14 13:16
Sample : 0.5ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 330048 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 295360 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 156416 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 8376 | 1.16478 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 4.343% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 8586 | 1.12719 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 4.180% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 20972 | 1.00185 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 3.878% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 7190 | 0.90110 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 3.438% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 3517 | 1.02121 ppb | | 83 |
| 3) Freon 114 | 1.10 | 85 | 2023 | 0.53953 ppb | | 93 |
| 4) Chloromethane | 1.14 | 50 | 5673 | 0.49421 ppb | | 91 |
| 5) Vinyl chloride | 1.21 | 62 | 4961 | 0.65442 ppb | | 98 |
| 6) Bromomethane | 1.45 | 94 | 3497 | 0.38837 ppb | | 88 |
| 7) Chloroethane | 1.53 | 64 | 2370 | 0.24053 ppb | | 89 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 8364 | 0.63083 ppb | | 94 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 6027 | 0.61134 ppb | | 95 |
| 10) Acrolein | 2.10 | 56 | 19851 | 26.82244 ppb | # | 95 |
| 11) Acetone | 2.25 | 43 | 3072 | 0.80194 ppb | | 95 |
| 12) Freon-113 | 2.20 | 101 | 3455 | 0.60793 ppb | | 94 |
| 13) 1,1-DCE | 2.18 | 61 | 5523 | 0.59853 ppb | | 96 |
| 14) t-Butanol | 2.88 | 59 | 5707 | 28.08004 ppb | | 100 |
| 15) Acetonitrile | 2.52 | 41 | 24765 | 29.78401 ppb | # | 62 |
| 16) Methyl Acetate | 2.60 | 43 | 3863 | 0.19895 ppb | | 86 |
| 17) Iodomethane | 2.30 | 142 | 1126 | 0.55620 ppb | | 89 |
| 18) Acrylonitrile | 2.96 | 52 | 1001 | 0.56748 ppb | | 79 |
| 19) Methylene chloride | 2.68 | 84 | 4932 | 0.38444 ppb | | 88 |
| 20) Carbon disulfide | 2.36 | 76 | 10537 | 0.97729 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 7938 | 0.54011 ppb | | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 3703 | 0.57464 ppb | | 94 |
| 23) Diisopropyl Ether | 3.72 | 45 | 8347 | 0.48421 ppb | # | 85 |
| 24) 1,1-DCA | 3.53 | 63 | 6630 | 0.53889 ppb | # | 90 |
| 25) Hexane | 3.37 | 57 | 2443 | 0.50316 ppb | # | 73 |
| 26) Vinyl Acetate | 3.72 | 43 | 2309 | 0.60695 ppb | # | 97 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 6748 | 0.46433 ppb | | 98 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 1797 | 0.63206 ppb | # | 83 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 3988 | 0.56878 ppb | | 90 |
| 30) 2,2-Dichloropropane | 4.41 | 77 | 2086 | 0.61158 ppb | | 96 |
| 31) Chloroform | 4.90 | 83 | 7118 | 0.56880 ppb | | 92 |
| 32) Bromochloromethane | 4.76 | 128 | 1971 | 0.54455 ppb | | 67 |
| 34) 1,1,1-TCA | 5.11 | 97 | 5462 | 0.52763 ppb | | 98 |
| 35) Cyclohexane | 5.16 | 41 | 2371 | 0.54706 ppb | | 79 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 3481 | 0.47975 ppb | | 95 |
| 37) 2,2,4-Trimethylpentane | 5.72 | 57 | 6258 | 0.46944 ppb | # | 89 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 4317 | 0.79525 ppb | # | 73 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 6770 | 0.46995 ppb | # | 90 |
| 41) 1,2-DCA | 5.62 | 62 | 4871 | 0.51522 ppb | # | 86 |
| 42) Benzene | 5.58 | 78 | 12924 | 0.51334 ppb | | 92 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L07.D
Acq On : 24 Oct 14 13:16
Sample : 0.5ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.39 | 95 | 3532 | 0.53801 | ppb | | 89 |
| 44) 2-Pentanone | 6.64 | 43 | 92144 | 21.84897 | ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 4148 | 0.55000 | ppb | # | 91 |
| 46) Bromodichloromethane | 6.95 | 83 | 5481 | 0.56870 | ppb | # | 96 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 3782 | 0.51960 | ppb | | 96 |
| 48) Dibromomethane | 6.75 | 93 | 2534 | 0.56402 | ppb | | 89 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 335 | 0.50361 | ppb | # | 36 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 2569 | 0.51259 | ppb | # | 85 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 3084 | 0.54772 | ppb | | 98 |
| 52) Cis-1,3-Dichloropropene | 7.45 | 75 | 5824 | 0.55381 | ppb | # | 84 |
| 53) Toluene | 7.78 | 91 | 11272 | 0.46268 | ppb | | 97 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 4995 | 0.54190 | ppb | | 89 |
| 55) 1,1,2-TCA | 8.21 | 83 | 3243 | 0.60837 | ppb | | 78 |
| 56) 2-Hexanone | 8.51 | 43 | 1521 | 0.47426 | ppb | # | 84 |
| 59) 1,2-EDB | 8.70 | 107 | 3141 | 0.51725 | ppb | # | 76 |
| 60) Tetrachloroethene | 8.34 | 166 | 4707 | 0.54906 | ppb | | 89 |
| 61) 1-Chlorohexane | 9.22 | 91 | 2862 | 0.43114 | ppb | | 98 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 4316 | 0.53676 | ppb | | 80 |
| 63) m&p-Xylene | 9.46 | 106 | 8866 | 0.87305 | ppb | | 92 |
| 64) o-Xylene | 9.85 | 106 | 4183 | 0.43702 | ppb | | 86 |
| 65) Styrene | 9.87 | 104 | 6778 | 0.44299 | ppb | # | 88 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 4596 | 0.45696 | ppb | | 89 |
| 68) Dibromochloromethane | 8.60 | 129 | 3945 | 0.52484 | ppb | | 80 |
| 69) Chlorobenzene | 9.21 | 112 | 9367 | 0.49955 | ppb | | 96 |
| 70) Ethylbenzene | 9.34 | 91 | 11506 | 0.44764 | ppb | | 93 |
| 71) Bromoform | 10.02 | 173 | 2730 | 0.50279 | ppb | | 88 |
| 73) Isopropylbenzene | 10.22 | 105 | 9702 | 0.48895 | ppb | | 90 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 4629 | 0.40555 | ppb | # | 94 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 1047 | 0.51671 | ppb | | 90 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 719 | 0.57417 | ppb | | 92 |
| 77) Bromobenzene | 10.49 | 156 | 3448 | 0.51012 | ppb | | 91 |
| 78) n-Propylbenzene | 10.63 | 91 | 11556 | 0.47597 | ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 9976 | 0.46770 | ppb | | 88 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 7861 | 0.50460 | ppb | | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 8046 | 0.42997 | ppb | | 98 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 8178 | 0.44151 | ppb | | 89 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 7297 | 0.48647 | ppb | | 91 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 7819 | 0.43173 | ppb | | 100 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 9766 | 0.44161 | ppb | | 90 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 8188 | 0.43158 | ppb | | 94 |
| 87) Benzyl Chloride | 11.67 | 91 | 4770 | 0.53204 | ppb | | 90 |
| 88) 1,3-DCB | 11.44 | 146 | 6414 | 0.48890 | ppb | | 97 |
| 89) 1,4-DCB | 11.53 | 146 | 7033 | 0.49623 | ppb | | 91 |
| 90) n-Butylbenzene | 11.91 | 91 | 8148 | 0.46539 | ppb | | 90 |
| 91) 1,2-DCB | 11.89 | 146 | 6703 | 0.52072 | ppb | | 88 |
| 92) Hexachloroethane | 12.14 | 117 | 2612 | 0.67849 | ppb | | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 548 | 0.17693 | ppb | | 93 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 4676 | 0.53625 | ppb | | 92 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 3061 | 0.58056 | ppb | | 89 |
| 96) Naphthalene | 13.72 | 128 | 4728 | 0.49199 | ppb | | 93 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 4599 | 0.53411 | ppb | | 95 |

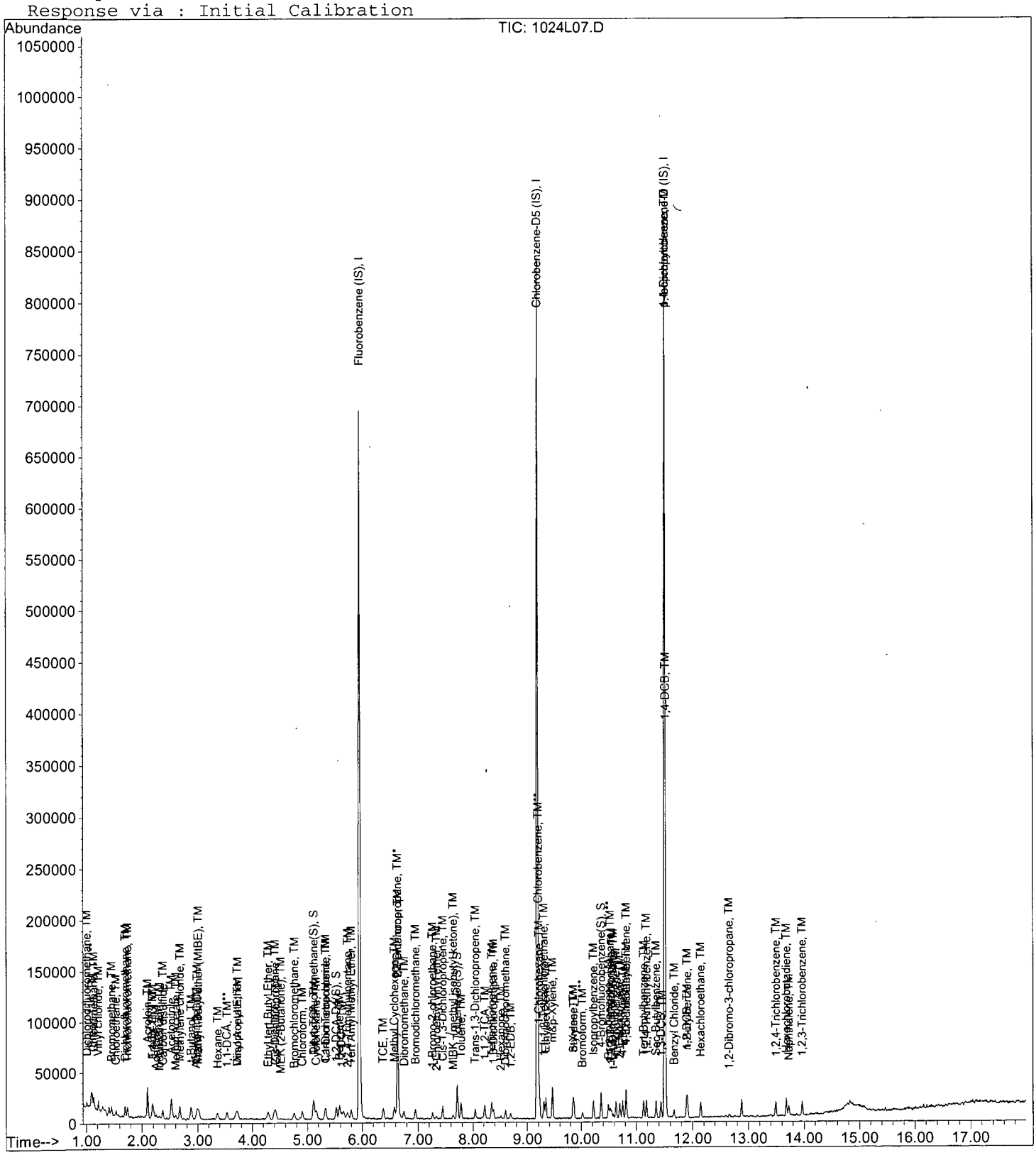
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L07.D  Vial: 6
Acq On : 24 Oct 14 13:16  Operator: DG,SV,RS
Sample : 0.5ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L08.D
Acq On : 24 Oct 14 13:44
Sample : 1.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 324928 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 295232 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 165952 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 15242 | 2.15298 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 8.027% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 16273 | 2.17002 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 8.048% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 39353 | 1.88074 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 7.281% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 13408 | 1.68111 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 6.414% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 5908 | 1.61009 ppb | | 95 |
| 3) Freon 114 | 1.10 | 85 | 4564 | 1.23639 ppb | | 86 |
| 4) Chloromethane | 1.14 | 50 | 11102 | 1.37343 ppb | | 97 |
| 5) Vinyl chloride | 1.21 | 62 | 8790 | 1.17779 ppb | | 99 |
| 6) Bromomethane | 1.45 | 94 | 6575 | 1.15670 ppb | | 95 |
| 7) Chloroethane | 1.53 | 64 | 4822 | 1.09542 ppb | | 97 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 14740 | 1.12923 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 11668 | 1.20218 ppb | | 95 |
| 10) Acrolein | 2.10 | 56 | 40856 | 56.07402 ppb | # | 87 |
| 11) Acetone | 2.25 | 43 | 3347 | 1.00419 ppb | | 84 |
| 12) Freon-113 | 2.20 | 101 | 6637 | 1.18622 ppb | | 85 |
| 13) 1,1-DCE | 2.18 | 61 | 10520 | 1.15803 ppb | | 92 |
| 14) t-Butanol | 2.88 | 59 | 10458 | 52.26710 ppb | | 97 |
| 15) Acetonitrile | 2.52 | 41 | 47693 | 58.26254 ppb | | 91 |
| 16) Methyl Acetate | 2.60 | 43 | 6315 | 0.72503 ppb | # | 82 |
| 17) Iodomethane | 2.31 | 142 | 2194 | 1.10082 ppb | | 90 |
| 18) Acrylonitrile | 2.97 | 52 | 2057 | 1.18452 ppb | | 73 |
| 19) Methylene chloride | 2.67 | 84 | 8793 | 1.00158 ppb | # | 71 |
| 20) Carbon disulfide | 2.36 | 76 | 19209 | 1.56220 ppb | | 95 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 14170 | 0.97934 ppb | | 96 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 7029 | 1.10797 ppb | | 94 |
| 23) Diisopropyl Ether | 3.72 | 45 | 16521 | 0.97349 ppb | # | 93 |
| 24) 1,1-DCA | 3.53 | 63 | 13280 | 1.09641 ppb | | 96 |
| 25) Hexane | 3.36 | 57 | 4880 | 1.02092 ppb | | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 4196 | 1.12035 ppb | # | 97 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 13071 | 0.91358 ppb | | 91 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 2610 | 1.01085 ppb | | 94 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 7089 | 1.02698 ppb | | 96 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 4055 | 1.30354 ppb | # | 86 |
| 31) Chloroform | 4.91 | 83 | 13688 | 1.11104 ppb | | 98 |
| 32) Bromochloromethane | 4.76 | 128 | 4455 | 1.25023 ppb | | 87 |
| 34) 1,1,1-TCA | 5.10 | 97 | 12727 | 1.24880 ppb | | 88 |
| 35) Cyclohexane | 5.17 | 41 | 4631 | 1.08534 ppb | | 84 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 7005 | 0.98063 ppb | | 88 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 11786 | 0.89806 ppb | # | 70 |
| 39) Carbon Tetrachloride | 5.33 | 117 | 8713 | 1.30765 ppb | | 92 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 12800 | 0.90254 ppb | # | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 9716 | 1.04388 ppb | | 95 |
| 42) Benzene | 5.58 | 78 | 24143 | 0.97407 ppb | | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L08.D Vial: 7
Acq On : 24 Oct 14 13:44 Operator: DG,SV,RS
Sample : 1.0ug/L Vol Std 10-24-14 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 7145 | 1.10551 | ppb | | 95 |
| 44) 2-Pentanone | 6.64 | 43 | 205042 | 49.38519 | ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 8458 | 1.13914 | ppb | # | 86 |
| 46) Bromodichloromethane | 6.95 | 83 | 10733 | 1.13119 | ppb | # | 97 |
| 47) Methyl Cyclohexane | 6.57 | 83 | 6582 | 0.91854 | ppb | | 95 |
| 48) Dibromomethane | 6.74 | 93 | 4795 | 1.08409 | ppb | | 91 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 662 | 1.01087 | ppb | # | 37 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 6194 | 1.25535 | ppb | # | 92 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 5958 | 1.07481 | ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 10948 | 1.05747 | ppb | | 95 |
| 53) Toluene | 7.78 | 91 | 22241 | 0.92731 | ppb | | 93 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 8899 | 0.98065 | ppb | | 92 |
| 55) 1,1,2-TCA | 8.22 | 83 | 5857 | 1.11605 | ppb | | 89 |
| 56) 2-Hexanone | 8.51 | 43 | 3131 | 0.99166 | ppb | | 96 |
| 59) 1,2-EDB | 8.69 | 107 | 6009 | 0.98998 | ppb | | 82 |
| 60) Tetrachloroethene | 8.34 | 166 | 9403 | 1.09732 | ppb | | 96 |
| 61) 1-Chlorohexane | 9.22 | 91 | 5804 | 0.87471 | ppb | | 96 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 8022 | 0.99809 | ppb | | 93 |
| 63) m&p-Xylene | 9.46 | 106 | 16826 | 1.65761 | ppb | | 90 |
| 64) o-Xylene | 9.84 | 106 | 8772 | 0.91685 | ppb | | 83 |
| 65) Styrene | 9.86 | 104 | 13584 | 0.88819 | ppb | # | 96 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 9735 | 0.96832 | ppb | | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 7904 | 1.05199 | ppb | | 96 |
| 69) Chlorobenzene | 9.21 | 112 | 17667 | 0.94260 | ppb | # | 82 |
| 70) Ethylbenzene | 9.34 | 91 | 23694 | 0.92221 | ppb | | 95 |
| 71) Bromoform | 10.03 | 173 | 5999 | 1.10534 | ppb | | 88 |
| 73) Isopropylbenzene | 10.23 | 105 | 19495 | 0.92603 | ppb | | 98 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 8961 | 1.03995 | ppb | | 84 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 2560 | 1.19080 | ppb | | 88 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 1280 | 0.96343 | ppb | | 84 |
| 77) Bromobenzene | 10.50 | 156 | 7281 | 1.01531 | ppb | | 95 |
| 78) n-Propylbenzene | 10.63 | 91 | 22522 | 0.87433 | ppb | | 93 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 18559 | 0.82010 | ppb | | 89 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 14060 | 0.85066 | ppb | | 89 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 15940 | 0.80287 | ppb | | 97 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 17550 | 0.89304 | ppb | | 96 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 14379 | 0.90353 | ppb | | 92 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 15858 | 0.82529 | ppb | | 93 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 20348 | 0.86724 | ppb | | 96 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 17925 | 0.89052 | ppb | # | 89 |
| 87) Benzyl Chloride | 11.67 | 91 | 10248 | 1.07736 | ppb | # | 89 |
| 88) 1,3-DCB | 11.44 | 146 | 13211 | 0.94912 | ppb | | 99 |
| 89) 1,4-DCB | 11.53 | 146 | 15132 | 1.00633 | ppb | | 88 |
| 90) n-Butylbenzene | 11.91 | 91 | 16779 | 0.90329 | ppb | | 90 |
| 91) 1,2-DCB | 11.89 | 146 | 14439 | 1.05724 | ppb | | 96 |
| 92) Hexachloroethane | 12.14 | 117 | 6259 | 1.48003 | ppb | | 91 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 1238 | 0.96415 | ppb | # | 78 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 8774 | 0.94839 | ppb | | 93 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 6281 | 1.12282 | ppb | | 85 |
| 96) Naphthalene | 13.72 | 128 | 8881 | 0.87104 | ppb | | 93 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 8784 | 0.96151 | ppb | | 94 |

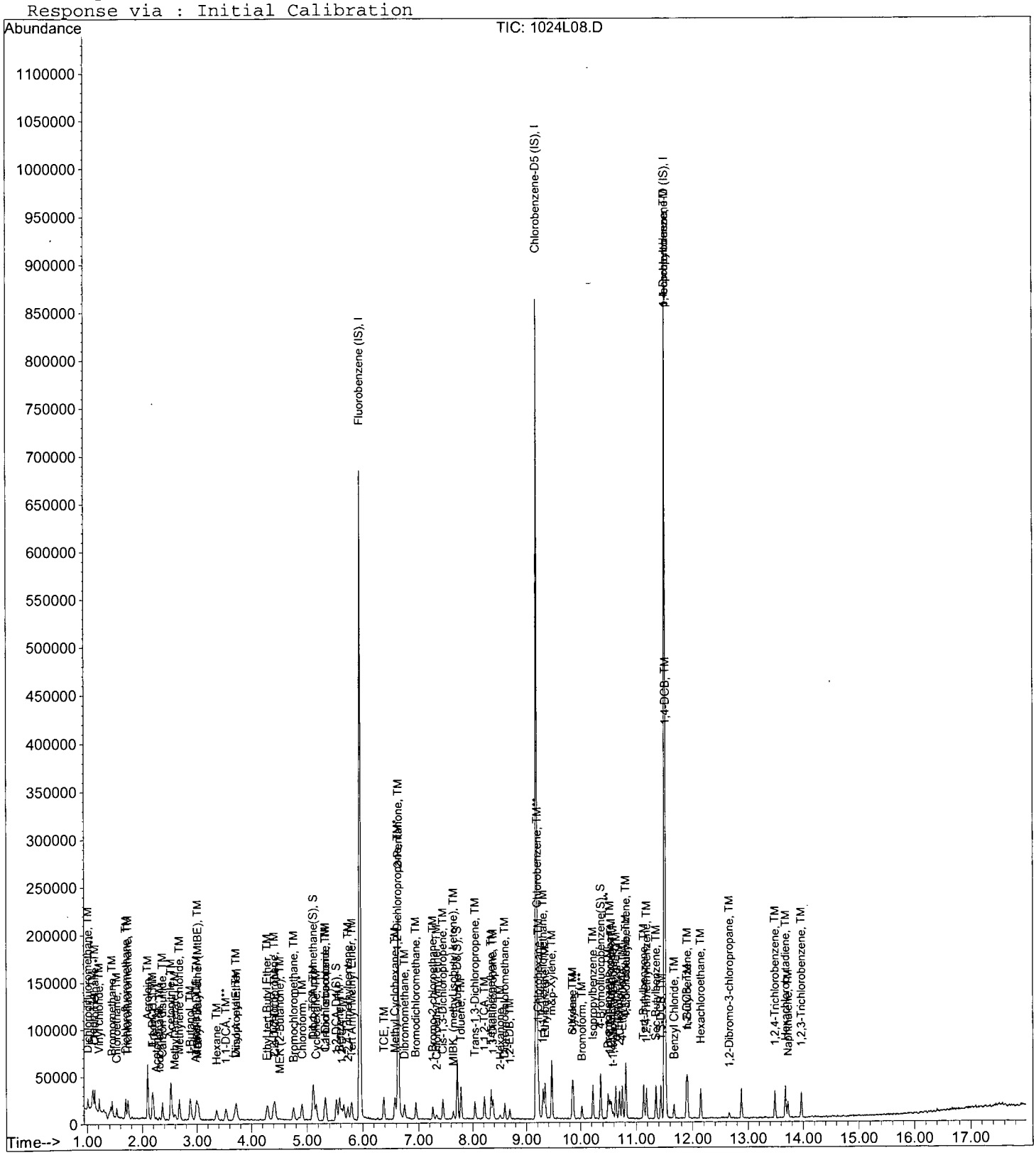
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L08.D  Vial: 7
Acq On : 24 Oct 14 13:44  Operator: DG,SV,RS
Sample : 1.0ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L09.D
Acq On : 24 Oct 14 14:12
Sample : 5.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 363648 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 308544 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 200320 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 79943 | 10.08984 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 37.617% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 81143 | 9.66837 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 35.855% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 208916 | 9.55363 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 36.979% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 78439 | 9.41044 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 35.907% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 22298 | 4.98502 ppb | 94 |
| 3) Freon 114 | 1.10 | 85 | 18532 | 4.48578 ppb | 93 |
| 4) Chloromethane | 1.14 | 50 | 40042 | 5.30598 ppb | 97 |
| 5) Vinyl chloride | 1.21 | 62 | 36583 | 4.37991 ppb | 98 |
| 6) Bromomethane | 1.45 | 94 | 25489 | 5.13051 ppb | 94 |
| 7) Chloroethane | 1.53 | 64 | 19016 | 5.27556 ppb | 99 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 73699 | 5.04492 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 49593 | 4.56561 ppb | 94 |
| 10) Acrolein | 2.10 | 56 | 81570 | 100.03276 ppb # | 95 |
| 11) Acetone | 2.25 | 43 | 12098 | 5.68212 ppb | 89 |
| 12) Freon-113 | 2.20 | 101 | 30418 | 4.85770 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 46018 | 4.52624 ppb | 97 |
| 14) t-Butanol | 2.88 | 59 | 20272 | 90.52788 ppb | 99 |
| 15) Acetonitrile | 2.52 | 41 | 95445 | 104.18229 ppb | 95 |
| 16) Methyl Acetate | 2.60 | 43 | 32045 | 5.39912 ppb | 96 |
| 17) Iodomethane | 2.31 | 142 | 10158 | 4.55401 ppb | 97 |
| 18) Acrylonitrile | 2.97 | 52 | 9610 | 4.94468 ppb | 88 |
| 19) Methylene chloride | 2.67 | 84 | 41566 | 5.44452 ppb | 98 |
| 20) Carbon disulfide | 2.36 | 76 | 89461 | 5.58229 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 75946 | 4.69001 ppb | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 33887 | 4.77281 ppb | 96 |
| 23) Diisopropyl Ether | 3.71 | 45 | 81850 | 4.30945 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 65962 | 4.86604 ppb | 97 |
| 25) Hexane | 3.36 | 57 | 21861 | 4.08645 ppb # | 97 |
| 26) Vinyl Acetate | 3.71 | 43 | 19528 | 4.65889 ppb # | 98 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 75430 | 4.71073 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 14051 | 5.49070 ppb | 87 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 35829 | 4.63786 ppb | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 17600 | 5.33876 ppb | 98 |
| 31) Chloroform | 4.90 | 83 | 70107 | 5.08462 ppb | 94 |
| 32) Bromochloromethane | 4.75 | 128 | 20714 | 5.19411 ppb | 96 |
| 34) 1,1,1-TCA | 5.10 | 97 | 58343 | 5.11520 ppb | 100 |
| 35) Cyclohexane | 5.16 | 41 | 21473 | 4.49667 ppb | 88 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 37438 | 4.68293 ppb | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 62913 | 4.28335 ppb | 95 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 47875 | 5.21866 ppb | 98 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 73698 | 4.64320 ppb # | 95 |
| 41) 1,2-DCA | 5.62 | 62 | 51085 | 4.90414 ppb | 97 |
| 42) Benzene | 5.58 | 78 | 130596 | 4.70796 ppb | 100 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L09.D
Acq On : 24 Oct 14 14:12
Sample : 5.0ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 35702 | 4.93583 | ppb | | 94 |
| 44) 2-Pentanone | 6.63 | 43 | 455993 | 98.13366 | ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 39822 | 4.79225 | ppb | # | 96 |
| 46) Bromodichloromethane | 6.95 | 83 | 53847 | 5.07087 | ppb | | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 33448 | 4.17077 | ppb | | 96 |
| 48) Dibromomethane | 6.75 | 93 | 25442 | 5.13966 | ppb | | 97 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 3508 | 4.78634 | ppb | # | 51 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 25943 | 4.69805 | ppb | | 100 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 29328 | 4.72738 | ppb | | 96 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 51878 | 4.47736 | ppb | | 95 |
| 53) Toluene | 7.78 | 91 | 131931 | 4.91500 | ppb | | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 47937 | 4.72007 | ppb | | 96 |
| 55) 1,1,2-TCA | 8.21 | 83 | 29559 | 5.03274 | ppb | | 96 |
| 56) 2-Hexanone | 8.51 | 43 | 16923 | 4.78922 | ppb | | 94 |
| 59) 1,2-EDB | 8.69 | 107 | 32831 | 5.17551 | ppb | | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 44183 | 4.93365 | ppb | | 95 |
| 61) 1-Chlorohexane | 9.22 | 91 | 31806 | 4.58664 | ppb | | 97 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 43658 | 5.19755 | ppb | | 96 |
| 63) m&p-Xylene | 9.46 | 106 | 104356 | 9.83707 | ppb | | 98 |
| 64) o-Xylene | 9.85 | 106 | 47808 | 4.78131 | ppb | | 100 |
| 65) Styrene | 9.86 | 104 | 81050 | 5.07083 | ppb | | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 55129 | 5.24700 | ppb | | 93 |
| 68) Dibromochloromethane | 8.60 | 129 | 41998 | 5.34860 | ppb | | 99 |
| 69) Chlorobenzene | 9.21 | 112 | 100193 | 5.11506 | ppb | | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 134211 | 4.99833 | ppb | | 98 |
| 71) Bromoform | 10.02 | 173 | 31006 | 5.46649 | ppb | | 99 |
| 73) Isopropylbenzene | 10.23 | 105 | 119443 | 4.70022 | ppb | | 96 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 46540 | 5.67591 | ppb | | 91 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 13654 | 5.26160 | ppb | | 86 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 7512 | 4.68406 | ppb | | 98 |
| 77) Bromobenzene | 10.50 | 156 | 44379 | 5.12674 | ppb | | 99 |
| 78) n-Propylbenzene | 10.63 | 91 | 141780 | 4.55975 | ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 123639 | 4.52611 | ppb | | 96 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 94209 | 4.72194 | ppb | | 96 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 115248 | 4.80896 | ppb | | 96 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 118744 | 5.00568 | ppb | | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 91873 | 4.78254 | ppb | | 97 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 106855 | 4.60693 | ppb | | 96 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 132752 | 4.68725 | ppb | | 99 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 118676 | 4.88432 | ppb | | 96 |
| 87) Benzyl Chloride | 11.67 | 91 | 56667 | 4.93528 | ppb | | 98 |
| 88) 1,3-DCB | 11.44 | 146 | 88350 | 5.25838 | ppb | | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 96202 | 5.30014 | ppb | | 99 |
| 90) n-Butylbenzene | 11.91 | 91 | 103016 | 4.59437 | ppb | | 100 |
| 91) 1,2-DCB | 11.89 | 146 | 84662 | 5.13550 | ppb | | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 29889 | 5.73210 | ppb | | 93 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 5972 | 5.41155 | ppb | | 95 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 50506 | 4.52261 | ppb | | 95 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 34630 | 5.12853 | ppb | | 95 |
| 96) Naphthalene | 13.72 | 128 | 57752 | 4.69245 | ppb | | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 49658 | 4.50308 | ppb | | 94 |

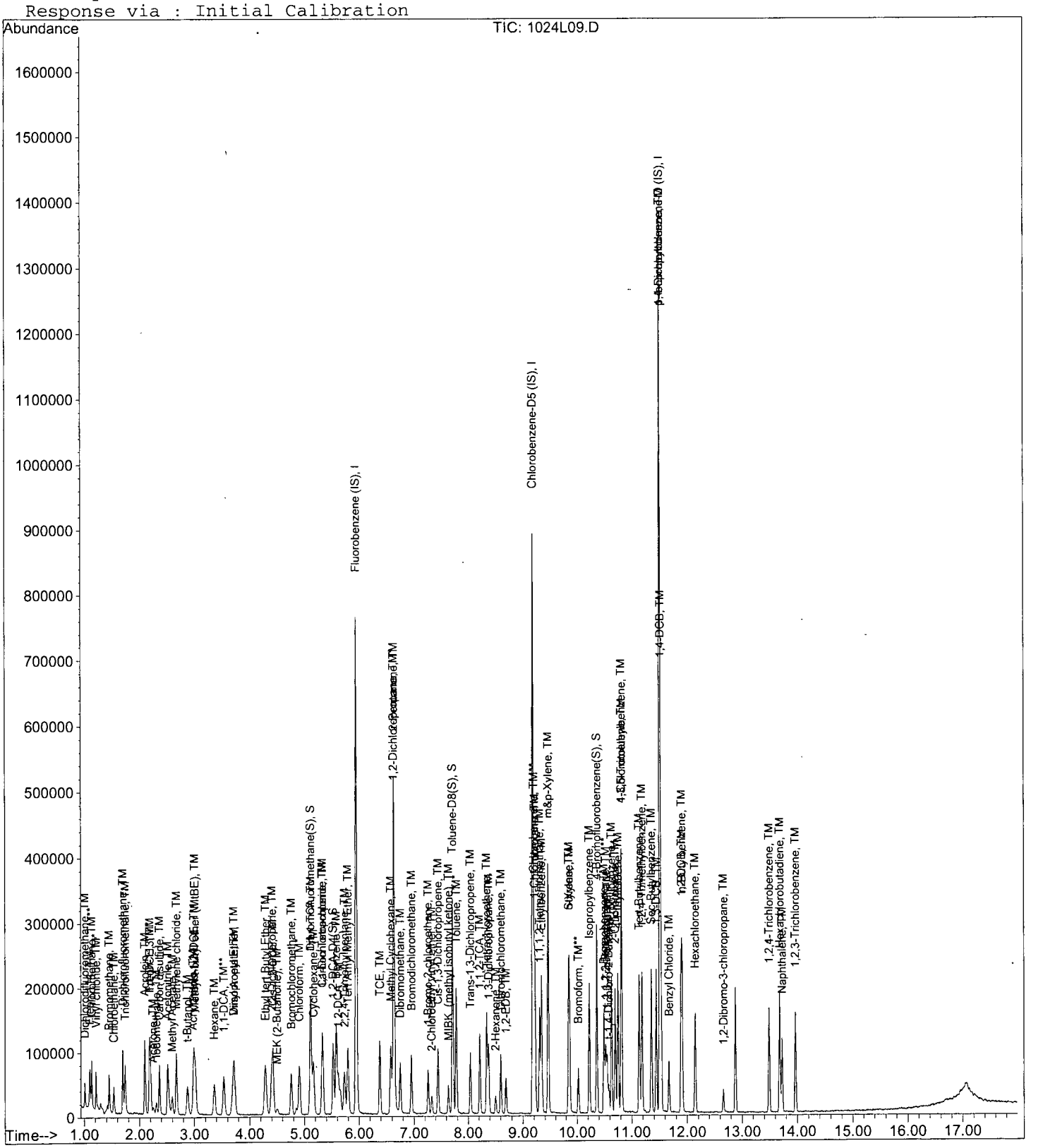
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L09.D  Vial: 8
Acq On : 24 Oct 14 14:12  Operator: DG,SV,RS
Sample : 5.0ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L10.D Vial: 9
Acq On : 24 Oct 14 14:41 Operator: DG,SV,RS
Sample : 10ug/L Vol Std 10-24-14 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 389312 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 329920 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 225088 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 200030 | 23.58209 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery = 87.918% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 213255 | 23.73475 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery = 88.025% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 606847 | 25.95281 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery = 100.453% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 235657 | 26.44033 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery = 100.892% | | |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.01 | 85 | 47382 | 9.70995 ppb | 100 |
| 3) Freon 114 | 1.10 | 85 | 39788 | 8.99604 ppb | 100 |
| 4) Chloromethane | 1.14 | 50 | 79794 | 10.21748 ppb | 100 |
| 5) Vinyl chloride | 1.21 | 62 | 76161 | 8.51731 ppb | 100 |
| 6) Bromomethane | 1.44 | 94 | 50720 | 9.92776 ppb | 100 |
| 7) Chloroethane | 1.53 | 64 | 37216 | 10.10862 ppb | 100 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 146492 | 9.36677 ppb | 100 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 106683 | 9.17396 ppb | 100 |
| 10) Acrolein | 2.10 | 56 | 107276 | 122.88469 ppb | 100 |
| 11) Acetone | 2.25 | 43 | 22731 | 10.79825 ppb | 100 |
| 12) Freon-113 | 2.20 | 101 | 60285 | 8.99276 ppb | 100 |
| 13) 1,1-DCE | 2.18 | 61 | 98975 | 9.09324 ppb | 100 |
| 14) t-Butanol | 2.87 | 59 | 28496 | 118.86474 ppb | 100 |
| 15) Acetonitrile | 2.52 | 41 | 117988 | 120.29899 ppb | 100 |
| 16) Methyl Acetate | 2.60 | 43 | 64492 | 10.67542 ppb | 100 |
| 17) Iodomethane | 2.31 | 142 | 21400 | 8.96155 ppb | 100 |
| 18) Acrylonitrile | 2.97 | 52 | 18992 | 9.12785 ppb | 100 |
| 19) Methylene chloride | 2.67 | 84 | 83670 | 10.56852 ppb | 100 |
| 20) Carbon disulfide | 2.36 | 76 | 179100 | 10.18618 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 159872 | 9.22199 ppb | 100 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 67064 | 8.82296 ppb | 100 |
| 23) Diisopropyl Ether | 3.71 | 45 | 187660 | 9.22908 ppb | 100 |
| 24) 1,1-DCA | 3.53 | 63 | 134789 | 9.28794 ppb | 100 |
| 25) Hexane | 3.36 | 57 | 50710 | 8.85429 ppb | 100 |
| 26) Vinyl Acetate | 3.71 | 43 | 41640 | 9.27937 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 160384 | 9.35595 ppb | 100 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 28566 | 10.57507 ppb | 100 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 77981 | 9.42878 ppb | 100 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 36176 | 10.34078 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 138104 | 9.35593 ppb | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 41625 | 9.74956 ppb | 100 |
| 34) 1,1,1-TCA | 5.10 | 97 | 115841 | 9.48680 ppb | 100 |
| 35) Cyclohexane | 5.16 | 41 | 45902 | 8.97869 ppb | 100 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 82854 | 9.68059 ppb | 100 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 150636 | 9.57977 ppb | 100 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 99874 | 9.87767 ppb | 100 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 168641 | 9.92448 ppb | 100 |
| 41) 1,2-DCA | 5.62 | 62 | 105999 | 9.50505 ppb | 100 |
| 42) Benzene | 5.58 | 78 | 277473 | 9.34345 ppb | 100 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L10.D
Acq On : 24 Oct 14 14:41
Sample : 10ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 74854 | 9.66643 | ppb | 100 |
| 44) 2-Pentanone | 6.63 | 43 | 623814 | 125.40024 | ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 79705 | 8.95953 | ppb | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 106770 | 9.39190 | ppb | 100 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 75611 | 8.80673 | ppb | 100 |
| 48) Dibromomethane | 6.75 | 93 | 51278 | 9.67604 | ppb | 100 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 6292 | 8.01893 | ppb | 100 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 51978 | 8.79227 | ppb | 100 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 62160 | 9.35906 | ppb | 100 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 111511 | 8.98960 | ppb | 100 |
| 53) Toluene | 7.78 | 91 | 298493 | 10.38709 | ppb | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 99332 | 9.13588 | ppb | 100 |
| 55) 1,1,2-TCA | 8.21 | 83 | 59472 | 9.45824 | ppb | 100 |
| 56) 2-Hexanone | 8.50 | 43 | 33386 | 8.82542 | ppb | 100 |
| 59) 1,2-EDB | 8.69 | 107 | 67800 | 9.99557 | ppb | 100 |
| 60) Tetrachloroethene | 8.34 | 166 | 94607 | 9.87973 | ppb | 100 |
| 61) 1-Chlorohexane | 9.22 | 91 | 69330 | 9.35007 | ppb | 100 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 88112 | 9.81021 | ppb | 100 |
| 63) m&p-Xylene | 9.46 | 106 | 244095 | 21.51868 | ppb | 100 |
| 64) o-Xylene | 9.85 | 106 | 110715 | 10.35526 | ppb | 100 |
| 65) Styrene | 9.86 | 104 | 196730 | 11.51079 | ppb | 100 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 114058 | 10.15232 | ppb | 100 |
| 68) Dibromochloromethane | 8.60 | 129 | 85617 | 10.19718 | ppb | 100 |
| 69) Chlorobenzene | 9.21 | 112 | 211163 | 10.08183 | ppb | 100 |
| 70) Ethylbenzene | 9.34 | 91 | 304196 | 10.59495 | ppb | 100 |
| 71) Bromoform | 10.02 | 173 | 63247 | 10.42824 | ppb | 100 |
| 73) Isopropylbenzene | 10.22 | 105 | 259151 | 9.07575 | ppb | 100 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 93196 | 10.39983 | ppb | 100 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 28255 | 9.69003 | ppb | 100 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 18313 | 10.16245 | ppb | 100 |
| 77) Bromobenzene | 10.49 | 156 | 95934 | 9.86298 | ppb | 100 |
| 78) n-Propylbenzene | 10.63 | 91 | 339693 | 9.72265 | ppb | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 307221 | 10.00904 | ppb | 100 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 225832 | 10.07362 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 288244 | 10.70409 | ppb | 100 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 279352 | 10.48034 | ppb | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 203064 | 9.40752 | ppb | 100 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 260036 | 9.97752 | ppb | 100 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 316493 | 9.94519 | ppb | 100 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 268893 | 9.84900 | ppb | 100 |
| 87) Benzyl Chloride | 11.67 | 91 | 119641 | 9.27329 | ppb | 100 |
| 88) 1,3-DCB | 11.44 | 146 | 188321 | 9.97507 | ppb | 100 |
| 89) 1,4-DCB | 11.53 | 146 | 199125 | 9.76341 | ppb | 100 |
| 90) n-Butylbenzene | 11.91 | 91 | 241590 | 9.58897 | ppb | 100 |
| 91) 1,2-DCB | 11.89 | 146 | 172076 | 9.28937 | ppb | 100 |
| 92) Hexachloroethane | 12.14 | 117 | 61656 | 10.48845 | ppb | 100 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 11878 | 9.97950 | ppb | 100 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 108949 | 8.68244 | ppb | 100 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 70391 | 9.27747 | ppb | 100 |
| 96) Naphthalene | 13.72 | 128 | 127208 | 9.19855 | ppb | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 112084 | 9.04558 | ppb | 100 |

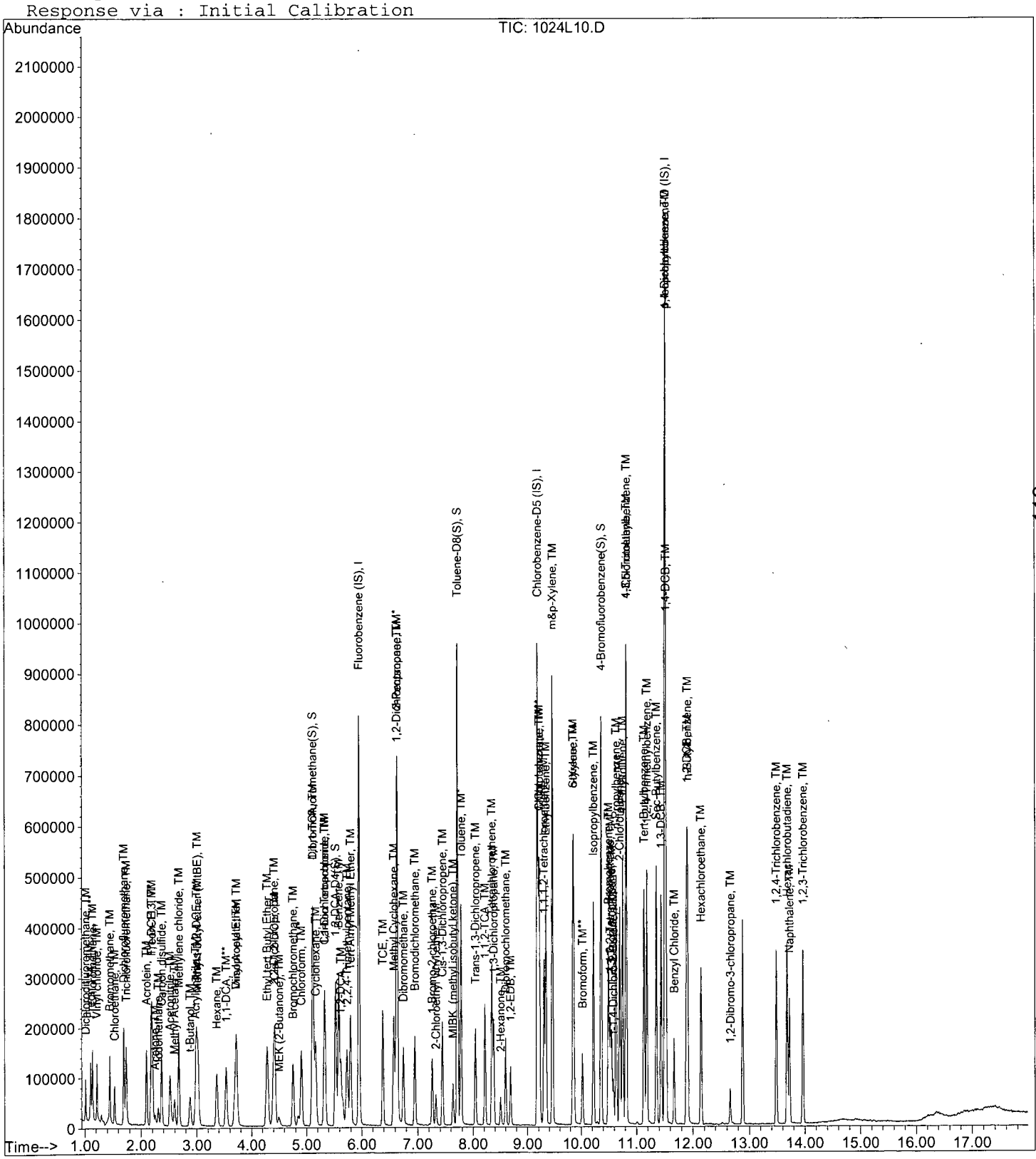
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L10.D  Vial: 9
Acq On : 24 Oct 14 14:41  Operator: DG,SV,RS
Sample : 10ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L11.D
Acq On : 24 Oct 14 15:09
Sample : 20ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 423488 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 363136 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 248000 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 332363 | 36.02106 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 134.293% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 345862 | 35.38711 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 131.238% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 1063658 | 41.32820 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 159.963% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 420905 | 42.90520 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 163.720% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 107916 | 20.12535 ppb | 94 |
| 3) Freon 114 | 1.10 | 85 | 83055 | 17.26322 ppb | 99 |
| 4) Chloromethane | 1.14 | 50 | 162541 | 19.47887 ppb | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 159785 | 16.42716 ppb | 98 |
| 6) Bromomethane | 1.44 | 94 | 97171 | 17.83220 ppb | 97 |
| 7) Chloroethane | 1.53 | 64 | 76804 | 19.68123 ppb | 93 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 284812 | 16.74137 ppb | 95 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 224845 | 17.77467 ppb | 98 |
| 10) Acrolein | 2.10 | 56 | 133758 | 140.85480 ppb | 93 |
| 11) Acetone | 2.25 | 43 | 42580 | 19.38481 ppb | 96 |
| 12) Freon-113 | 2.20 | 101 | 126371 | 17.32957 ppb | 95 |
| 13) 1,1-DCE | 2.18 | 61 | 202921 | 17.13866 ppb | 98 |
| 14) t-Butanol | 2.88 | 59 | 35056 | 134.42752 ppb | 96 |
| 15) Acetonitrile | 2.52 | 41 | 143899 | 134.87721 ppb | 92 |
| 16) Methyl Acetate | 2.60 | 43 | 128305 | 20.01978 ppb | 98 |
| 17) Iodomethane | 2.31 | 142 | 47648 | 18.34301 ppb | 96 |
| 18) Acrylonitrile | 2.97 | 52 | 39902 | 17.62987 ppb | 92 |
| 19) Methylene chloride | 2.67 | 84 | 158553 | 18.69036 ppb | 96 |
| 20) Carbon disulfide | 2.36 | 76 | 358837 | 18.51697 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 341621 | 18.11563 ppb | 99 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 137757 | 16.66077 ppb | 97 |
| 23) Diisopropyl Ether | 3.72 | 45 | 412993 | 18.67180 ppb | 93 |
| 24) 1,1-DCA | 3.53 | 63 | 270752 | 17.15116 ppb | 98 |
| 25) Hexane | 3.36 | 57 | 110073 | 17.66841 ppb | 97 |
| 26) Vinyl Acetate | 3.71 | 43 | 84876 | 17.38800 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 352823 | 18.92085 ppb | 97 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 52221 | 17.88417 ppb | 93 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 165237 | 18.36667 ppb | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 71999 | 19.00145 ppb | 96 |
| 31) Chloroform | 4.91 | 83 | 271413 | 16.90317 ppb | 99 |
| 32) Bromochloromethane | 4.76 | 128 | 81642 | 17.57929 ppb | 100 |
| 34) 1,1,1-TCA | 5.11 | 97 | 233171 | 17.55451 ppb | 99 |
| 35) Cyclohexane | 5.17 | 41 | 99145 | 17.82825 ppb | 97 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 178787 | 19.20353 ppb | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 341331 | 19.95533 ppb # | 87 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 204666 | 18.33659 ppb | 98 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 363843 | 19.68409 ppb | 98 |
| 41) 1,2-DCA | 5.62 | 62 | 206847 | 17.05135 ppb | 94 |
| 42) Benzene | 5.58 | 78 | 575501 | 17.81513 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L11.D
Acq On : 24 Oct 14 15:09
Sample : 20ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 147496 | 17.51008 ppb | 93 |
| 44) 2-Pentanone | 6.63 | 43 | 810243 | 149.73220 ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 162962 | 16.84002 ppb | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 206503 | 16.69887 ppb | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 174412 | 18.67509 ppb | 97 |
| 48) Dibromomethane | 6.75 | 93 | 97533 | 16.91901 ppb | 97 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 15546 | 18.21391 ppb | 82 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 112865 | 17.55081 ppb | 96 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 121248 | 16.78234 ppb | 100 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 232231 | 17.21074 ppb | 96 |
| 53) Toluene | 7.78 | 91 | 633135 | 20.25410 ppb | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 204144 | 17.26055 ppb | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 115896 | 16.94427 ppb | 99 |
| 56) 2-Hexanone | 8.50 | 43 | 75222 | 18.27985 ppb | 92 |
| 59) 1,2-EDB | 8.69 | 107 | 135222 | 18.11192 ppb | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 186005 | 17.64761 ppb | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 160887 | 19.71305 ppb | 92 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 173827 | 17.58327 ppb | 94 |
| 63) m&p-Xylene | 9.46 | 106 | 541422 | 43.36426 ppb | 96 |
| 64) o-Xylene | 9.85 | 106 | 244069 | 20.73990 ppb | 97 |
| 65) Styrene | 9.86 | 104 | 448346 | 23.83346 ppb | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 225496 | 18.23551 ppb | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 174498 | 18.88208 ppb | 98 |
| 69) Chlorobenzene | 9.21 | 112 | 423758 | 18.38141 ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 666722 | 21.09742 ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 125221 | 18.75804 ppb | 95 |
| 73) Isopropylbenzene | 10.23 | 105 | 593458 | 18.86342 ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 182174 | 18.73246 ppb | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 57474 | 17.88965 ppb | 96 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 34815 | 17.53501 ppb | 95 |
| 77) Bromobenzene | 10.49 | 156 | 199979 | 18.66040 ppb | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 769113 | 19.97970 ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 703050 | 20.78875 ppb | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 489636 | 19.82322 ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 624420 | 21.04587 ppb | 95 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 598641 | 20.38406 ppb | 98 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 453143 | 19.05365 ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 604853 | 21.06394 ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 703296 | 20.05801 ppb | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 620880 | 20.64054 ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 241646 | 16.99941 ppb | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 390441 | 18.77038 ppb | 96 |
| 89) 1,4-DCB | 11.53 | 146 | 410308 | 18.25939 ppb | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 538677 | 19.40537 ppb | 96 |
| 91) 1,2-DCB | 11.89 | 146 | 363212 | 17.79618 ppb | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 120014 | 18.49780 ppb | 93 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 25600 | 20.01850 ppb | 87 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 228074 | 16.49661 ppb | 95 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 139943 | 16.74034 ppb | 94 |
| 96) Naphthalene | 13.72 | 128 | 285952 | 18.76717 ppb | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 236546 | 17.32643 ppb | 98 |

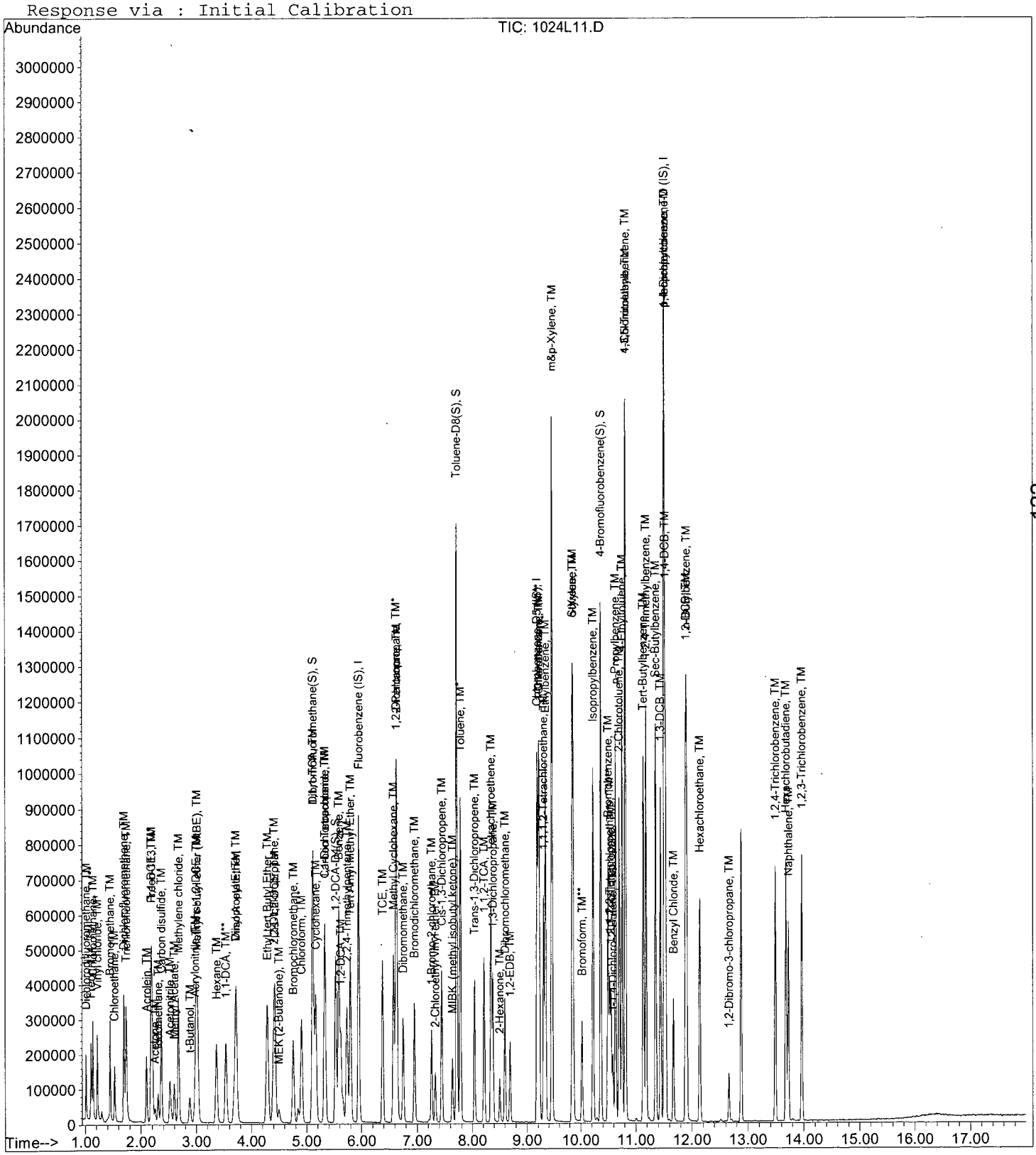
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L11.D  Vial: 10
Acq On : 24 Oct 14 15:09  Operator: DG,SV,RS
Sample : 20ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L12.D
Acq On : 24 Oct 14 15:37
Sample : 40ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 419648 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 366784 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 246336 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 643513 | 70.38128 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 262.393% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 679334 | 70.14254 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 260.136% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 2235138 | 85.98204 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 332.799% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 886475 | 89.46461 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 341.387% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 202327 | 37.91019 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 175330 | 36.77632 ppb | 97 |
| 4) Chloromethane | 1.14 | 50 | 322432 | 39.39031 ppb | 98 |
| 5) Vinyl chloride | 1.22 | 62 | 316941 | 32.88220 ppb | 98 |
| 6) Bromomethane | 1.44 | 94 | 188291 | 35.30595 ppb | 100 |
| 7) Chloroethane | 1.52 | 64 | 152874 | 40.09864 ppb | 93 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 617525 | 36.63052 ppb | 97 |
| 9) Trichlorofluoromethane | 1.73 | 101 | 462405 | 36.88900 ppb | 99 |
| 10) Acrolein | 2.10 | 56 | 144994 | 154.08411 ppb # | 93 |
| 11) Acetone | 2.25 | 43 | 80621 | 38.03522 ppb | 98 |
| 12) Freon-113 | 2.19 | 101 | 270007 | 37.36555 ppb | 97 |
| 13) 1,1-DCE | 2.18 | 61 | 420381 | 35.83017 ppb | 94 |
| 14) t-Butanol | 2.89 | 59 | 42152 | 163.11728 ppb | 98 |
| 15) Acetonitrile | 2.52 | 41 | 147368 | 139.39267 ppb | 89 |
| 16) Methyl Acetate | 2.60 | 43 | 249024 | 39.78427 ppb | 98 |
| 17) Iodomethane | 2.30 | 142 | 109416 | 42.50721 ppb | 100 |
| 18) Acrylonitrile | 2.96 | 52 | 85379 | 38.06813 ppb | 92 |
| 19) Methylene chloride | 2.67 | 84 | 335831 | 40.37862 ppb | 96 |
| 20) Carbon disulfide | 2.36 | 76 | 756304 | 39.05703 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 772883 | 41.35982 ppb | 98 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 294308 | 35.92026 ppb | 97 |
| 23) Diisopropyl Ether | 3.71 | 45 | 965157 | 44.03493 ppb | 92 |
| 24) 1,1-DCA | 3.53 | 63 | 559018 | 35.73580 ppb | 98 |
| 25) Hexane | 3.36 | 57 | 265032 | 42.93098 ppb | 91 |
| 26) Vinyl Acetate | 3.71 | 43 | 186549 | 38.56680 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 824317 | 44.61018 ppb | 98 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 117863 | 40.94466 ppb | 98 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 355596 | 39.88742 ppb | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 148416 | 39.63364 ppb | 96 |
| 31) Chloroform | 4.90 | 83 | 569748 | 35.80768 ppb | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 162291 | 35.26452 ppb | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 484394 | 36.80178 ppb | 99 |
| 35) Cyclohexane | 5.16 | 41 | 239294 | 43.42360 ppb | 100 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 392336 | 42.52645 ppb | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 749001 | 44.18975 ppb # | 89 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 449017 | 40.22372 ppb | 99 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 817029 | 44.60615 ppb | 94 |
| 41) 1,2-DCA | 5.62 | 62 | 421965 | 35.10281 ppb | 98 |
| 42) Benzene | 5.58 | 78 | 1226253 | 38.30708 ppb | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L12.D Vial: 11
Acq On : 24 Oct 14 15:37 Operator: DG,SV,RS
Sample : 40ug/L Vol Std 10-24-14 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 319899 | 38.32452 | ppb | 95 |
| 44) 2-Pentanone | 6.63 | 43 | 1014403 | 189.17615 | ppb | 98 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 357044 | 37.23350 | ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 448927 | 36.63468 | ppb | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 416804 | 45.03750 | ppb | 95 |
| 48) Dibromomethane | 6.75 | 93 | 206915 | 36.22191 | ppb | 94 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 35247 | 41.67375 | ppb | 95 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 244280 | 38.33380 | ppb | 97 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 267264 | 37.33140 | ppb | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 528032 | 39.49075 | ppb | 95 |
| 53) Toluene | 7.78 | 91 | 1379210 | 44.52490 | ppb | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 457845 | 39.06541 | ppb | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 247503 | 36.51665 | ppb | 98 |
| 56) 2-Hexanone | 8.50 | 43 | 164406 | 40.31823 | ppb | 93 |
| 59) 1,2-EDB | 8.69 | 107 | 296007 | 39.25348 | ppb | 95 |
| 60) Tetrachloroethene | 8.34 | 166 | 379634 | 35.66032 | ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 390431 | 47.36267 | ppb | 91 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 362844 | 36.33802 | ppb | 94 |
| 63) m&p-Xylene | 9.46 | 106 | 1202949 | 95.38986 | ppb | 96 |
| 64) o-Xylene | 9.85 | 106 | 552117 | 46.44982 | ppb | 97 |
| 65) Styrene | 9.86 | 104 | 1017870 | 53.57041 | ppb | 100 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 497162 | 39.80484 | ppb | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 365224 | 39.12709 | ppb | 99 |
| 69) Chlorobenzene | 9.21 | 112 | 921644 | 39.58067 | ppb | 97 |
| 70) Ethylbenzene | 9.34 | 91 | 1511890 | 47.36568 | ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 256270 | 38.00729 | ppb | 94 |
| 73) Isopropylbenzene | 10.23 | 105 | 1385171 | 44.32590 | ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 383528 | 40.11081 | ppb | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 119373 | 37.40764 | ppb | 94 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 79710 | 40.41812 | ppb | 94 |
| 77) Bromobenzene | 10.49 | 156 | 420428 | 39.49589 | ppb | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 1759068 | 46.00502 | ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 1565615 | 46.60697 | ppb | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 1076232 | 43.86625 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 1355063 | 45.98046 | ppb | 95 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 1277007 | 43.77652 | ppb | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 1054924 | 44.65683 | ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 1366317 | 47.90326 | ppb | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 1580211 | 45.37207 | ppb | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 1385087 | 46.35689 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 497080 | 35.20500 | ppb | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 803976 | 38.91210 | ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 829457 | 37.16155 | ppb | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 1310935 | 47.54431 | ppb | 96 |
| 91) 1,2-DCB | 11.89 | 146 | 752590 | 37.12349 | ppb | 99 |
| 92) Hexachloroethane | 12.15 | 117 | 249706 | 38.70170 | ppb | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 50104 | 39.94937 | ppb | 95 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 545532 | 39.72492 | ppb | 98 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 301028 | 36.25298 | ppb | 96 |
| 96) Naphthalene | 13.72 | 128 | 775616 | 51.24791 | ppb | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 578634 | 42.66985 | ppb | 95 |

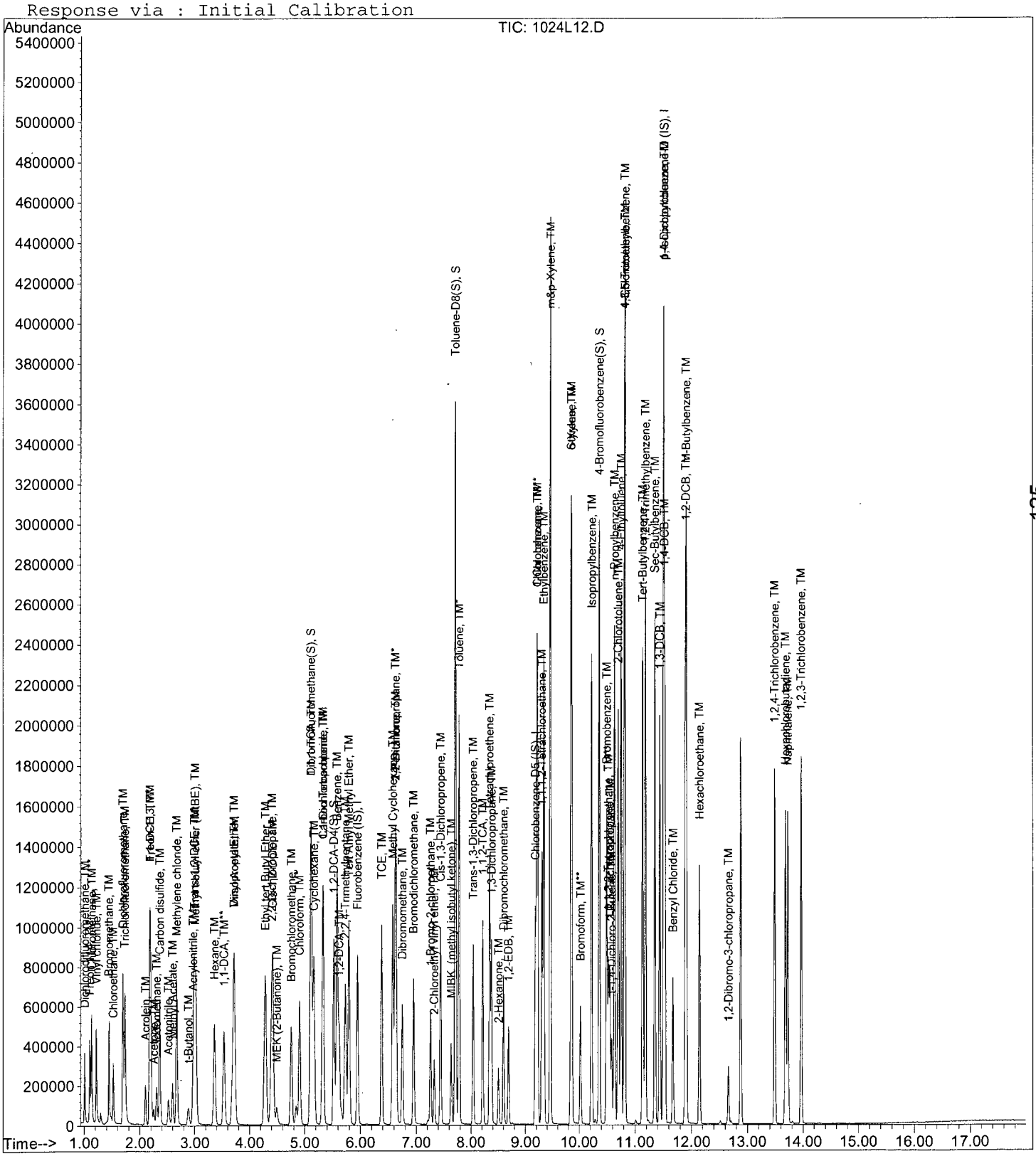
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L12.D  Vial: 11
Acq On : 24 Oct 14 15:37  Operator: DG,SV,RS
Sample : 40ug/L Vol Std 10-24-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L13.D
Acq On : 24 Oct 14 16:05
Sample : 100ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 422272 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 373568 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 259840 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 822405 | 89.38784 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 333.255% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 873744 | 89.65515 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 332.499% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 2872279 | 108.48526 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 419.899% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 1170260 | 115.95990 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 442.489% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 543180 | 100.83098 ppb | | 98 |
| 3) Freon 114 | 1.10 | 85 | 465641 | 97.06355 ppb | | 94 |
| 4) Chloromethane | 1.13 | 50 | 821216 | 100.30755 ppb | | 100 |
| 5) Vinyl chloride | 1.22 | 62 | 820847 | 84.63256 ppb | | 96 |
| 6) Bromomethane | 1.44 | 94 | 448832 | 84.26073 ppb | | 97 |
| 7) Chloroethane | 1.52 | 64 | 293651 | 77.05548 ppb | | 95 |
| 8) Dichlorofluoromethane | 1.69 | 67 | 1544246 | 91.03280 ppb | | 97 |
| 9) Trichlorofluoromethane | 1.72 | 101 | 1177668 | 93.36629 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 181613 | 191.79957 ppb | # | 97 |
| 11) Acetone | 2.26 | 43 | 211240 | 100.79347 ppb | | 99 |
| 12) Freon-113 | 2.19 | 101 | 689106 | 94.77097 ppb | | 98 |
| 13) 1,1-DCE | 2.17 | 61 | 1121109 | 94.96128 ppb | | 99 |
| 14) t-Butanol | 2.91 | 59 | 46287 | 178.00561 ppb | | 96 |
| 15) Acetonitrile | 2.53 | 41 | 200736 | 188.69261 ppb | | 92 |
| 16) Methyl Acetate | 2.60 | 43 | 721054 | 115.60221 ppb | | 99 |
| 17) Iodomethane | 2.30 | 142 | 278528 | 107.53343 ppb | | 98 |
| 18) Acrylonitrile | 2.97 | 52 | 213404 | 94.55966 ppb | | 94 |
| 19) Methylene chloride | 2.67 | 84 | 832560 | 100.03196 ppb | | 95 |
| 20) Carbon disulfide | 2.35 | 76 | 1969551 | 100.61805 ppb | | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 2106933 | 112.04912 ppb | | 96 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 791352 | 95.98426 ppb | | 94 |
| 23) Diisopropyl Ether | 3.72 | 45 | 2607623 | 118.23255 ppb | | 88 |
| 24) 1,1-DCA | 3.53 | 63 | 1397389 | 88.77443 ppb | | 98 |
| 25) Hexane | 3.36 | 57 | 785998 | 126.52806 ppb | | 88 |
| 26) Vinyl Acetate | 3.72 | 43 | 473326 | 97.24647 ppb | # | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 2266362 | 121.88826 ppb | | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 288865 | 99.96249 ppb | | 98 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 920086 | 102.56529 ppb | | 99 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 377344 | 100.29171 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 1399239 | 87.39331 ppb | | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 421537 | 91.02741 ppb | | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 1227034 | 92.64449 ppb | | 99 |
| 35) Cyclohexane | 5.16 | 41 | 580209 | 104.63363 ppb | | 88 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 1024001 | 110.30476 ppb | | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 2231134 | 130.81504 ppb | | 96 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 1131153 | 100.23895 ppb | | 100 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 2190221 | 118.83328 ppb | # | 90 |
| 41) 1,2-DCA | 5.62 | 62 | 1062024 | 87.79962 ppb | | 96 |
| 42) Benzene | 5.58 | 78 | 3156050 | 97.97961 ppb | | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L13.D
Acq On : 24 Oct 14 16:05
Sample : 100ug/L Vol Std 10-24-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

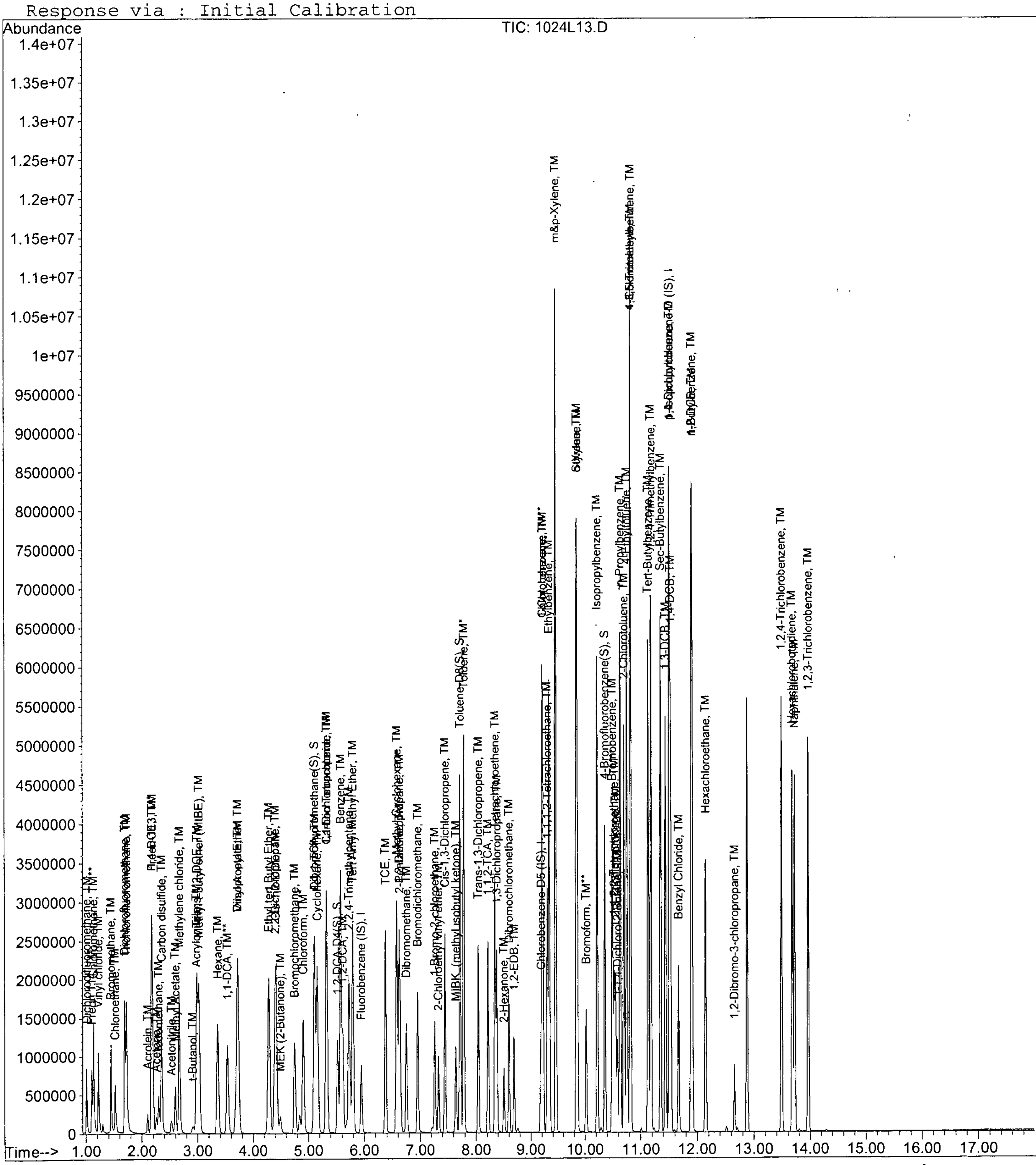
Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

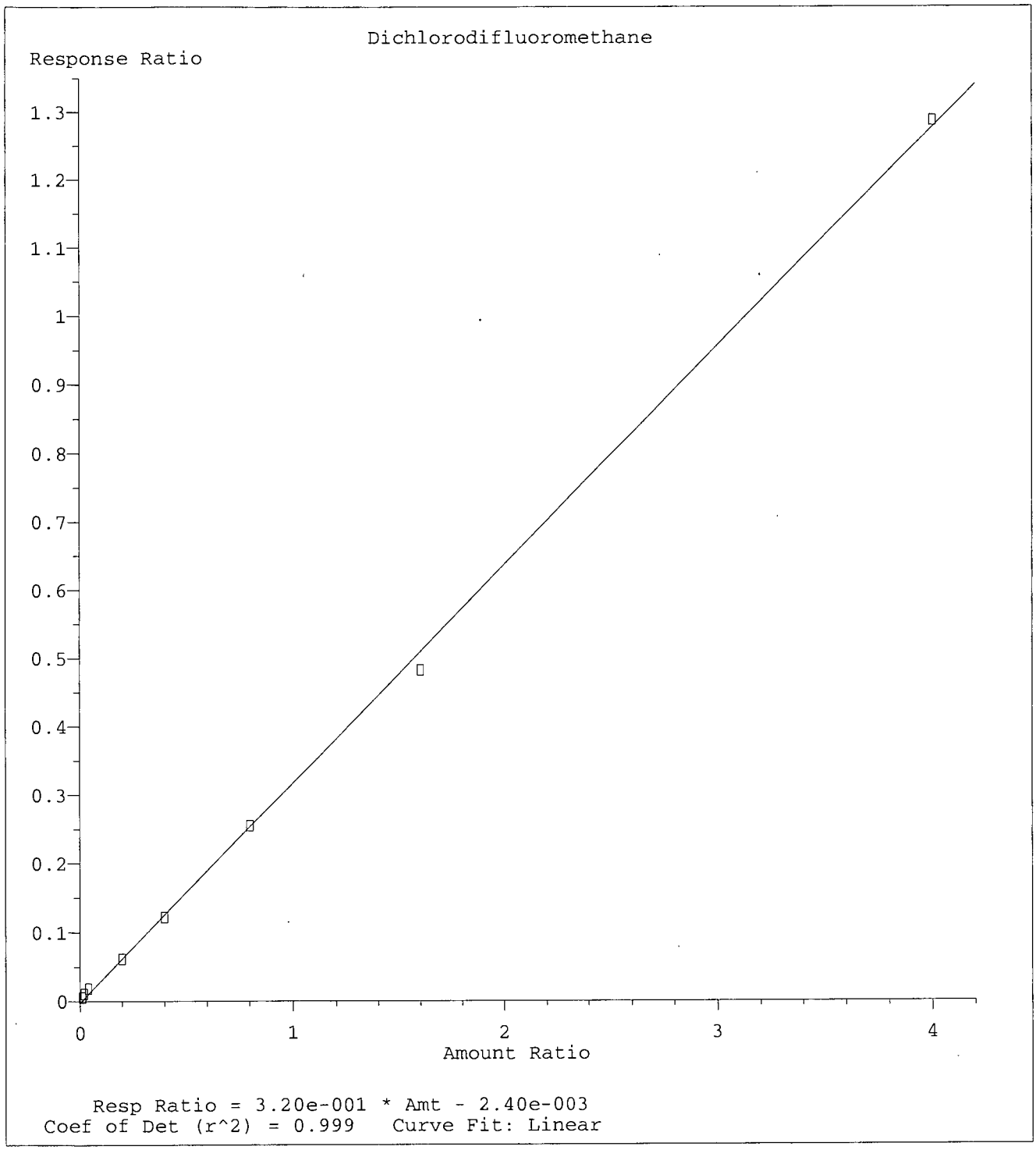
| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 832256 | 99.08632 | ppb | 95 |
| 44) 2-Pentanone | 6.64 | 43 | 1159629 | 214.91553 | ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 877465 | 90.93577 | ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 1114801 | 90.40802 | ppb | 99 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 1197881 | 128.63197 | ppb | 91 |
| 48) Dibromomethane | 6.75 | 93 | 485386 | 84.44218 | ppb | 95 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 108104 | 127.02086 | ppb | 91 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 682367 | 106.41548 | ppb | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 679872 | 94.37432 | ppb | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 1391023 | 103.38615 | ppb | 96 |
| 53) Toluene | 7.78 | 91 | 3471351 | 111.36890 | ppb | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 1205420 | 102.21279 | ppb | 98 |
| 55) 1,1,2-TCA | 8.21 | 83 | 616934 | 90.45696 | ppb | 98 |
| 56) 2-Hexanone | 8.51 | 43 | 475324 | 115.84209 | ppb | 90 |
| 59) 1,2-EDB | 8.69 | 107 | 744386 | 96.92037 | ppb | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 939508 | 86.64856 | ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 1041888 | 124.09482 | ppb | 85 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 885397 | 87.06029 | ppb | 93 |
| 63) m&p-Xylene | 9.46 | 106 | 3027496 | 235.71070 | ppb | 96 |
| 64) o-Xylene | 9.85 | 106 | 1483177 | 122.51426 | ppb | 99 |
| 65) Styrene | 9.86 | 104 | 2609390 | 134.83802 | ppb | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 1261238 | 99.14612 | ppb | 95 |
| 68) Dibromochloromethane | 8.60 | 129 | 919381 | 96.70623 | ppb | 99 |
| 69) Chlorobenzene | 9.21 | 112 | 2323747 | 97.98272 | ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 3782836 | 116.35948 | ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 692906 | 100.89838 | ppb | 96 |
| 73) Isopropylbenzene | 10.23 | 105 | 3792590 | 115.05672 | ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 1004513 | 100.13548 | ppb | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 311288 | 92.47801 | ppb | 95 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 218005 | 104.79768 | ppb | 98 |
| 77) Bromobenzene | 10.49 | 156 | 1093267 | 97.36623 | ppb | 97 |
| 78) n-Propylbenzene | 10.63 | 91 | 4602104 | 114.10400 | ppb | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 4071009 | 114.89202 | ppb | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 2745871 | 106.10274 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 3475213 | 111.79364 | ppb | 94 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 3275976 | 106.46591 | ppb | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 2897512 | 116.28236 | ppb | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 3584073 | 119.12759 | ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 4306678 | 117.22972 | ppb | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 3776924 | 119.83878 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 1465789 | 98.41729 | ppb | 100 |
| 88) 1,3-DCB | 11.44 | 146 | 2147538 | 98.53812 | ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 2228616 | 94.65795 | ppb | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 3633812 | 124.94005 | ppb | 95 |
| 91) 1,2-DCB | 11.89 | 146 | 2153475 | 100.70525 | ppb | 100 |
| 92) Hexachloroethane | 12.15 | 117 | 685986 | 100.72804 | ppb | 95 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 163072 | 124.34950 | ppb | 88 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 1697647 | 117.19581 | ppb | 97 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 892746 | 101.92639 | ppb | 96 |
| 96) Naphthalene | 13.72 | 128 | 2347008 | 147.01642 | ppb | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 1628576 | 113.85368 | ppb | 96 |

(#) = qualifier out of range (m) = manual integration

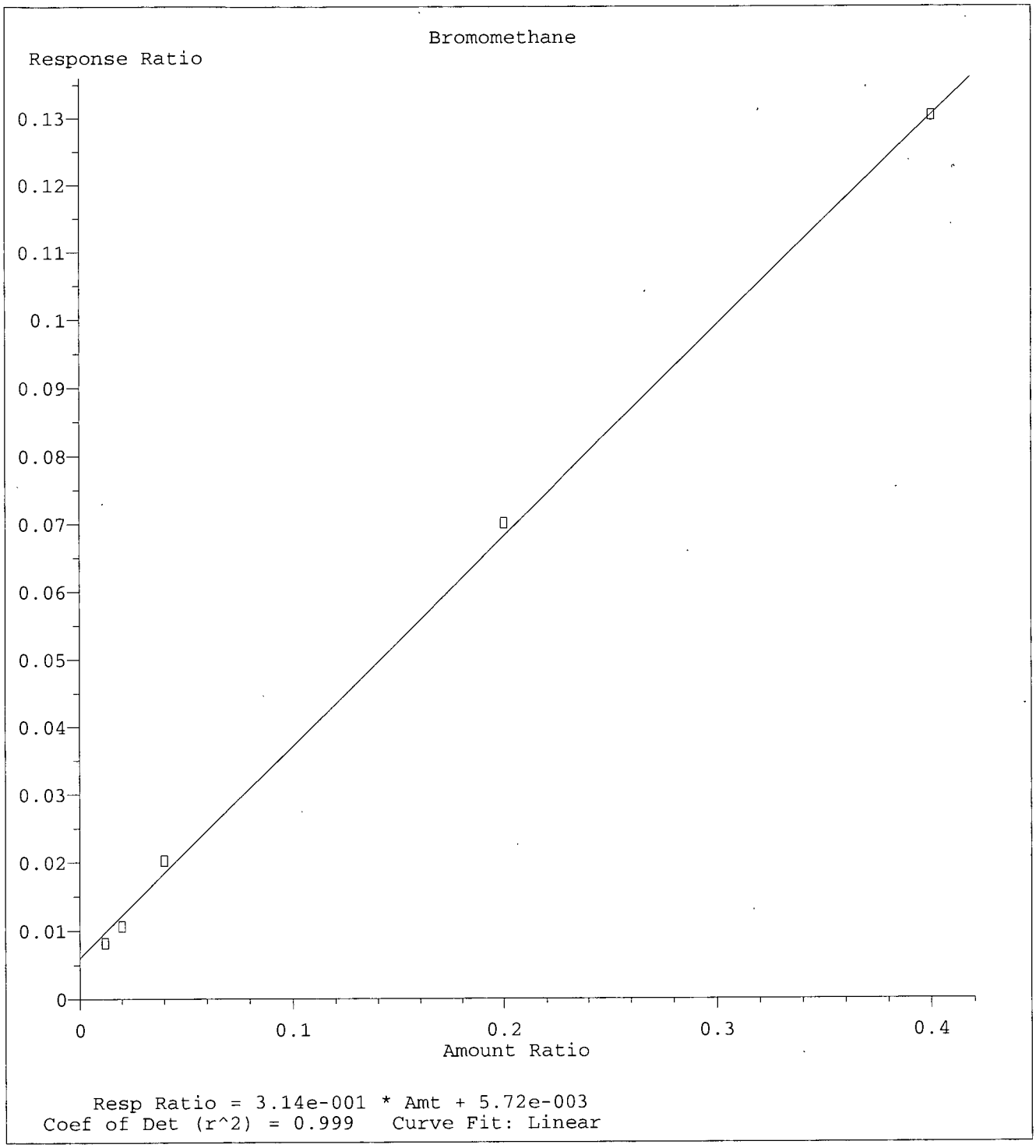
# Quantitation Report

```
Data File : M:\LOKI\DATA\141024\1024L13.D                Vial: 12
Acq On    : 24 Oct 14  16:05                         Operator: DG,SV,RS
Sample    : 100ug/L Vol Std 10-24-14                 Inst     : Loki
Misc      : 10mL w/5uL IS&S:10-06-14                 Multiplr: 1.00

Quant Time: Oct 25 10:30 2014            Quant Results File: LALLW.RES

Method        : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title         : METHOD 8260B
Last Update   : Sat Oct 25 10:29:55 2014
Response via  : Initial Calibration
```

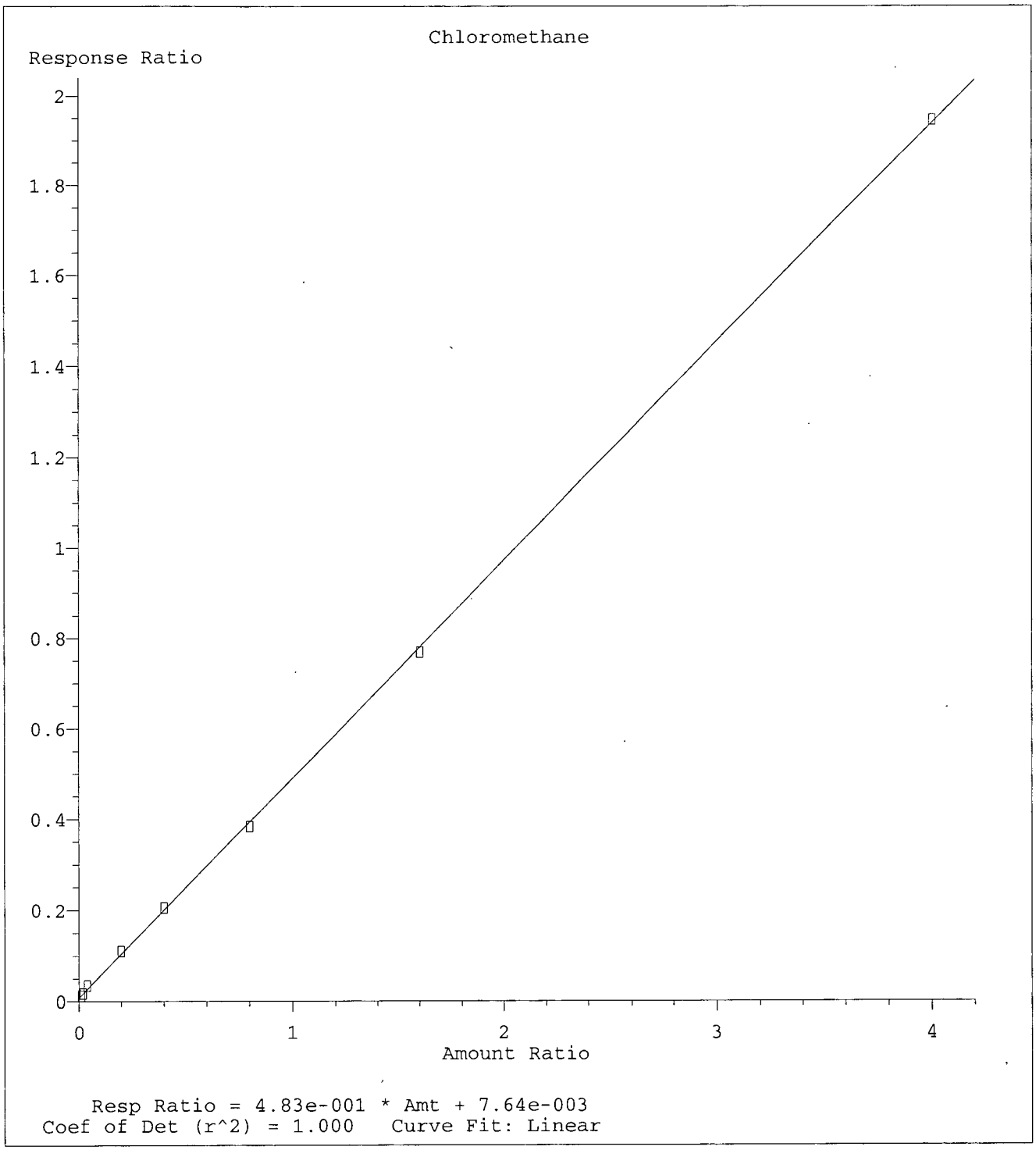




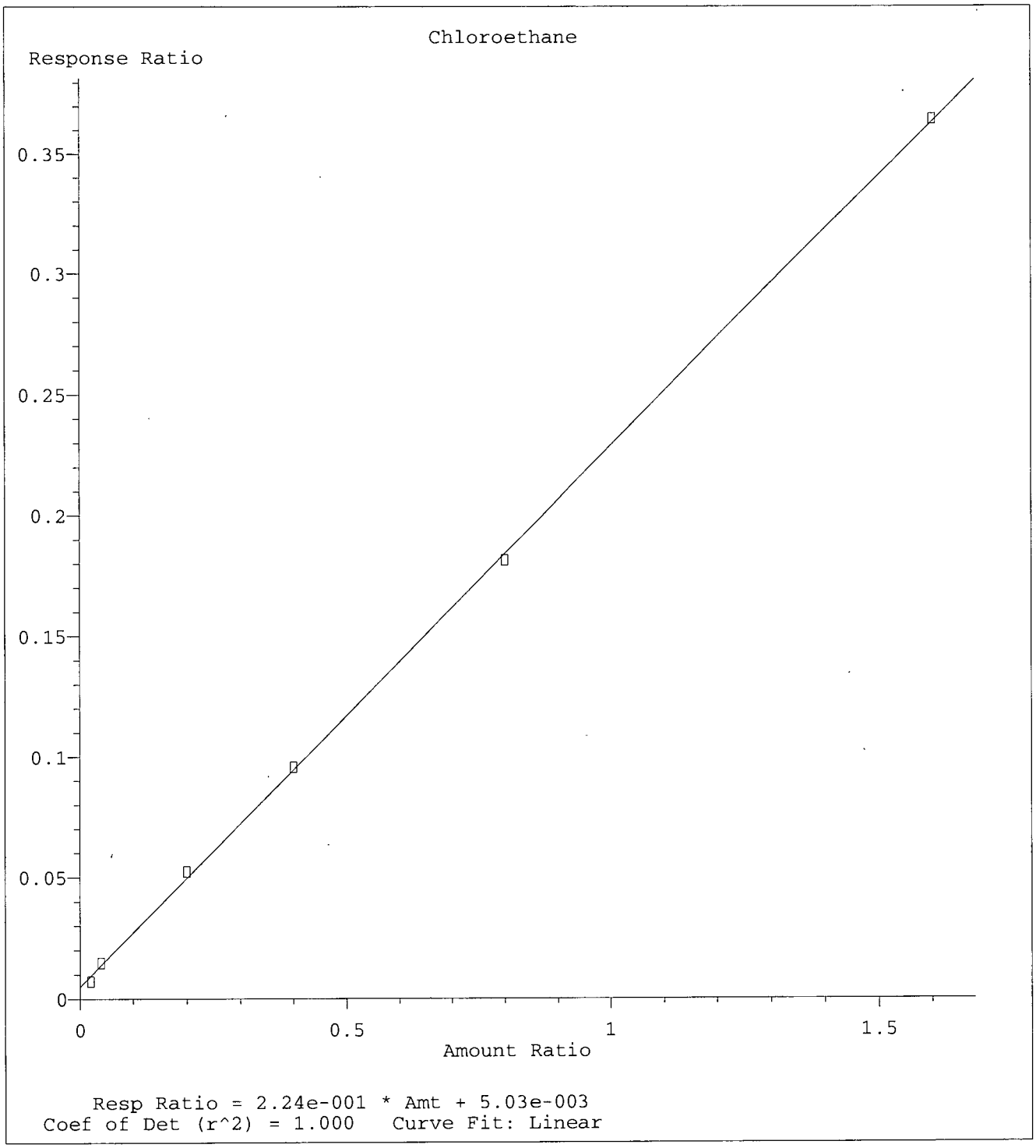

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



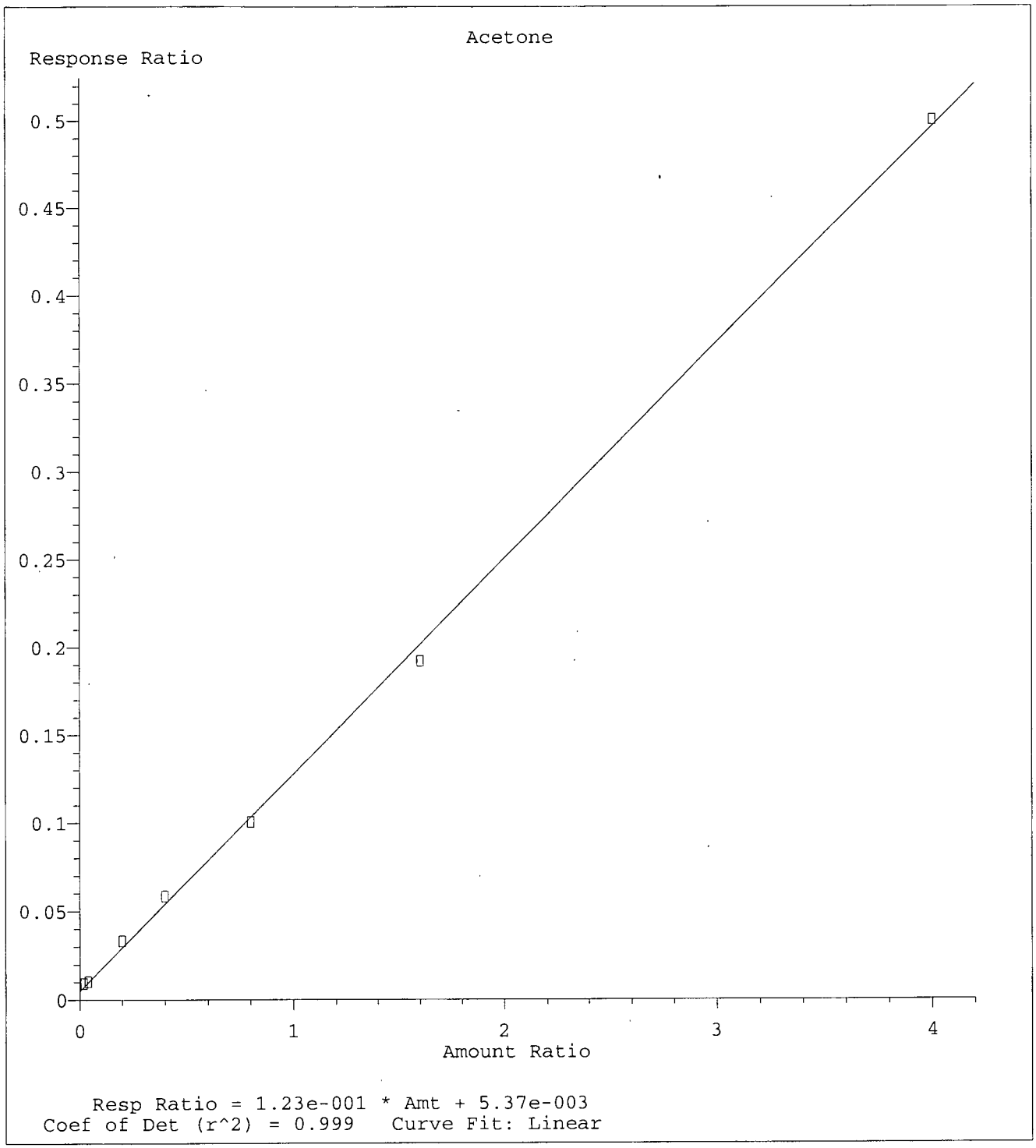

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



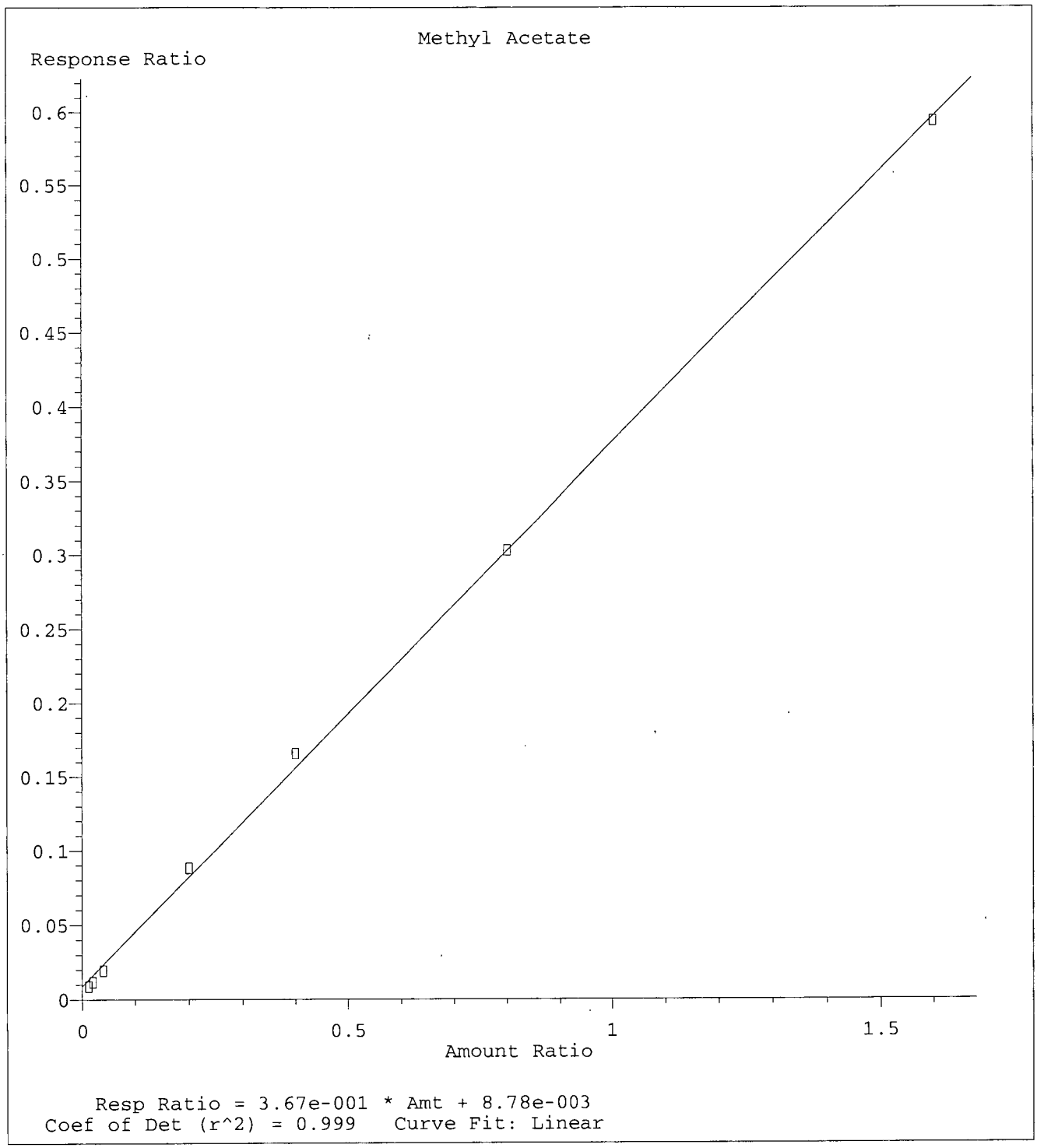

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



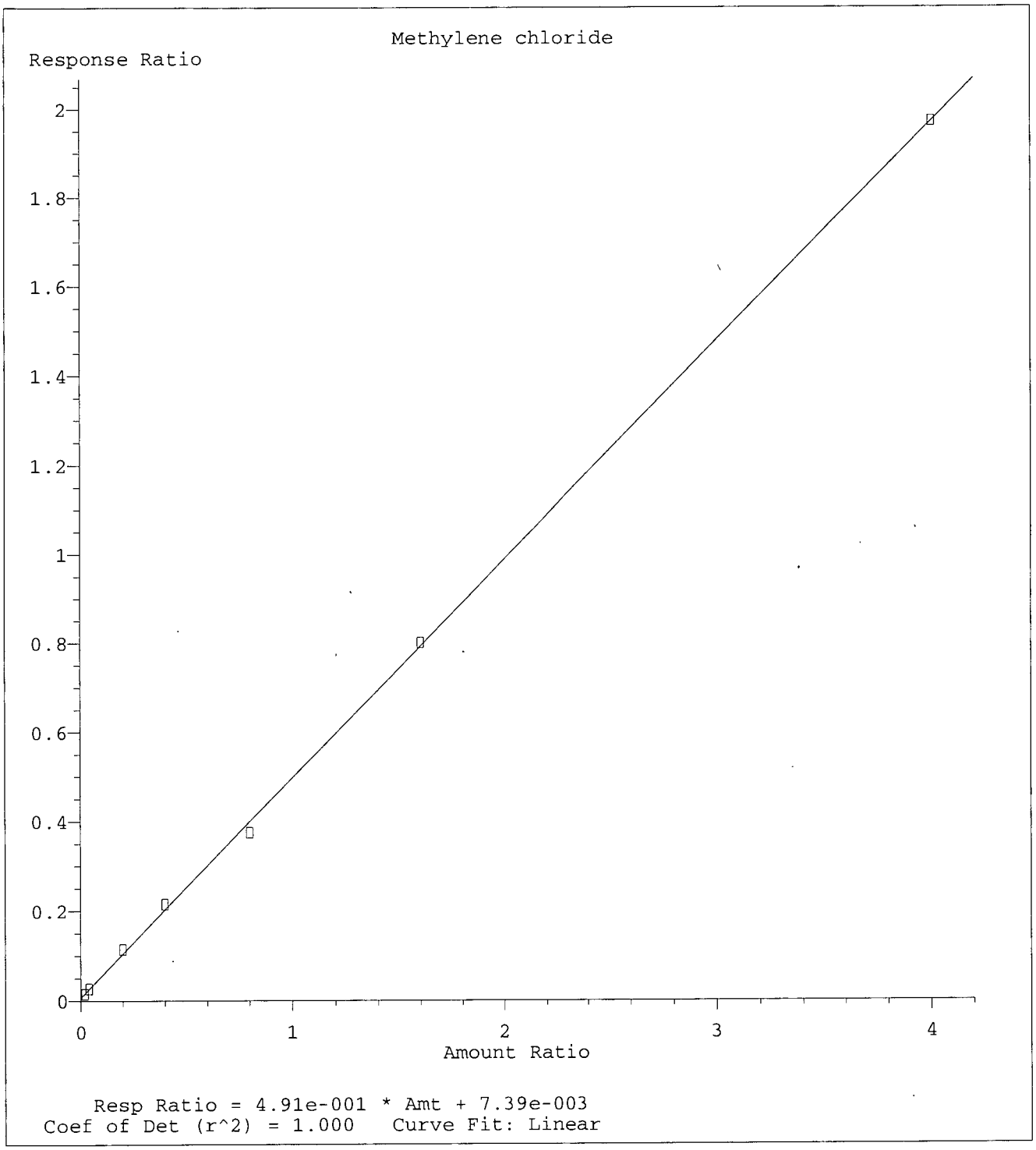

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



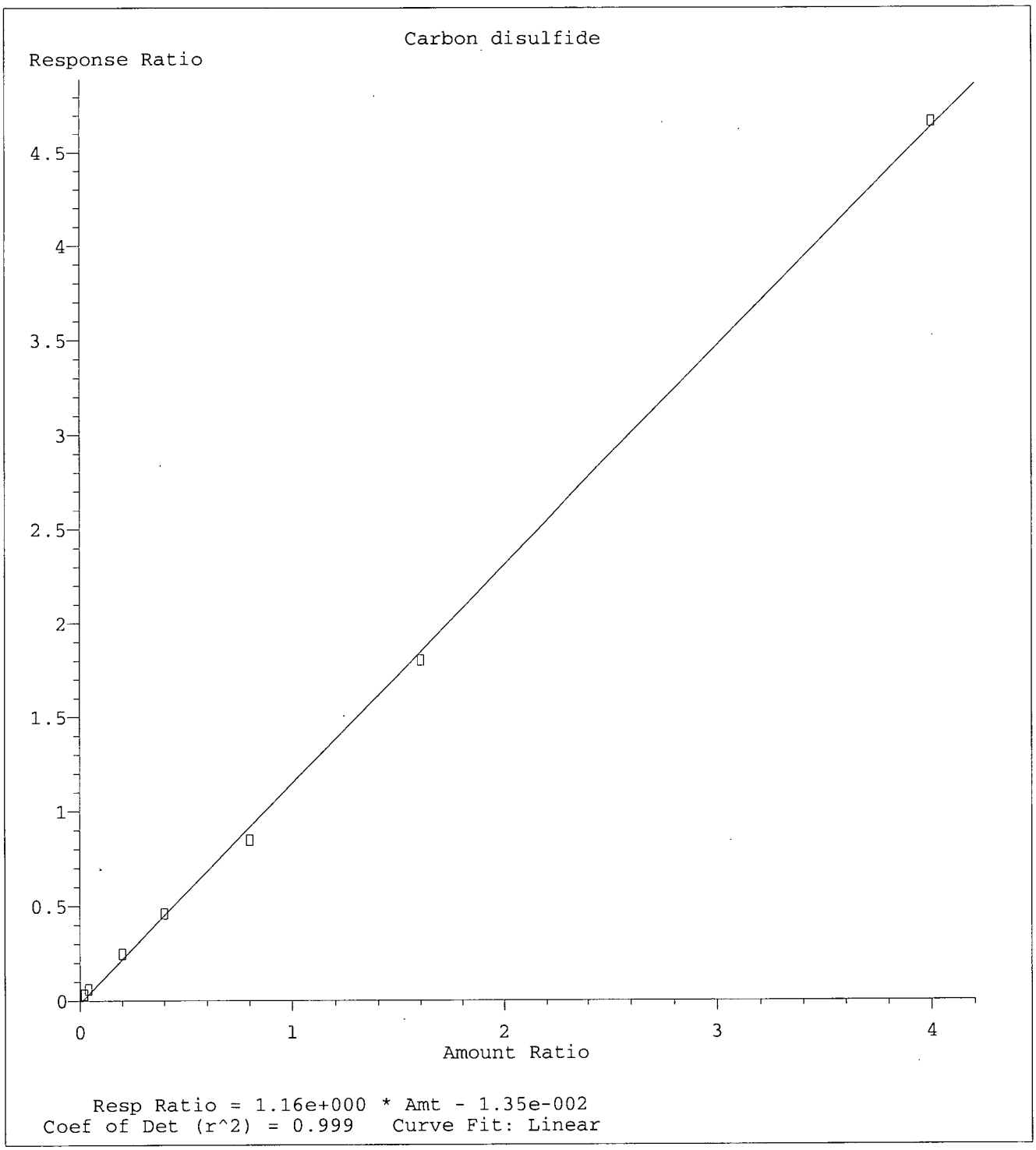

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



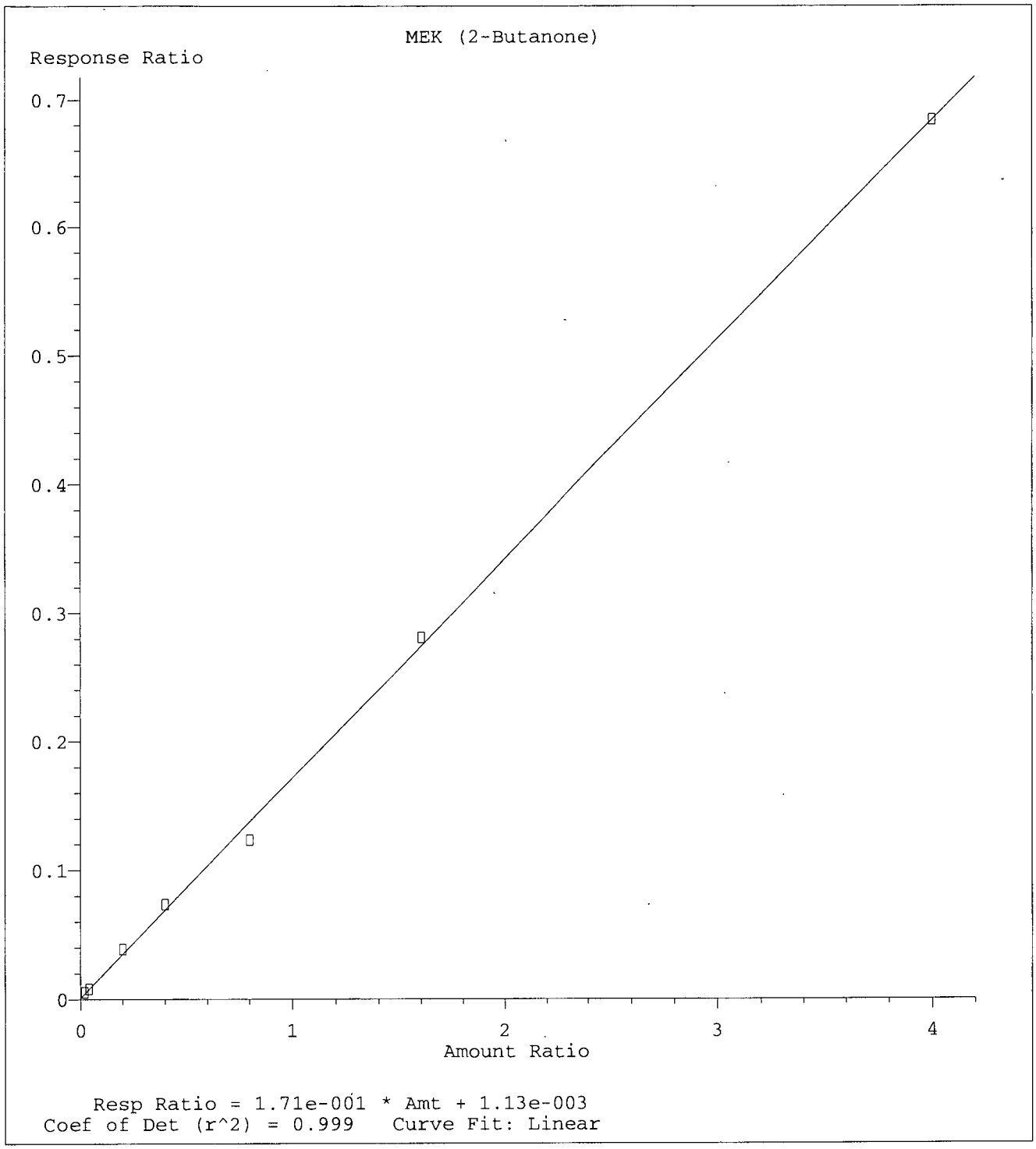

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



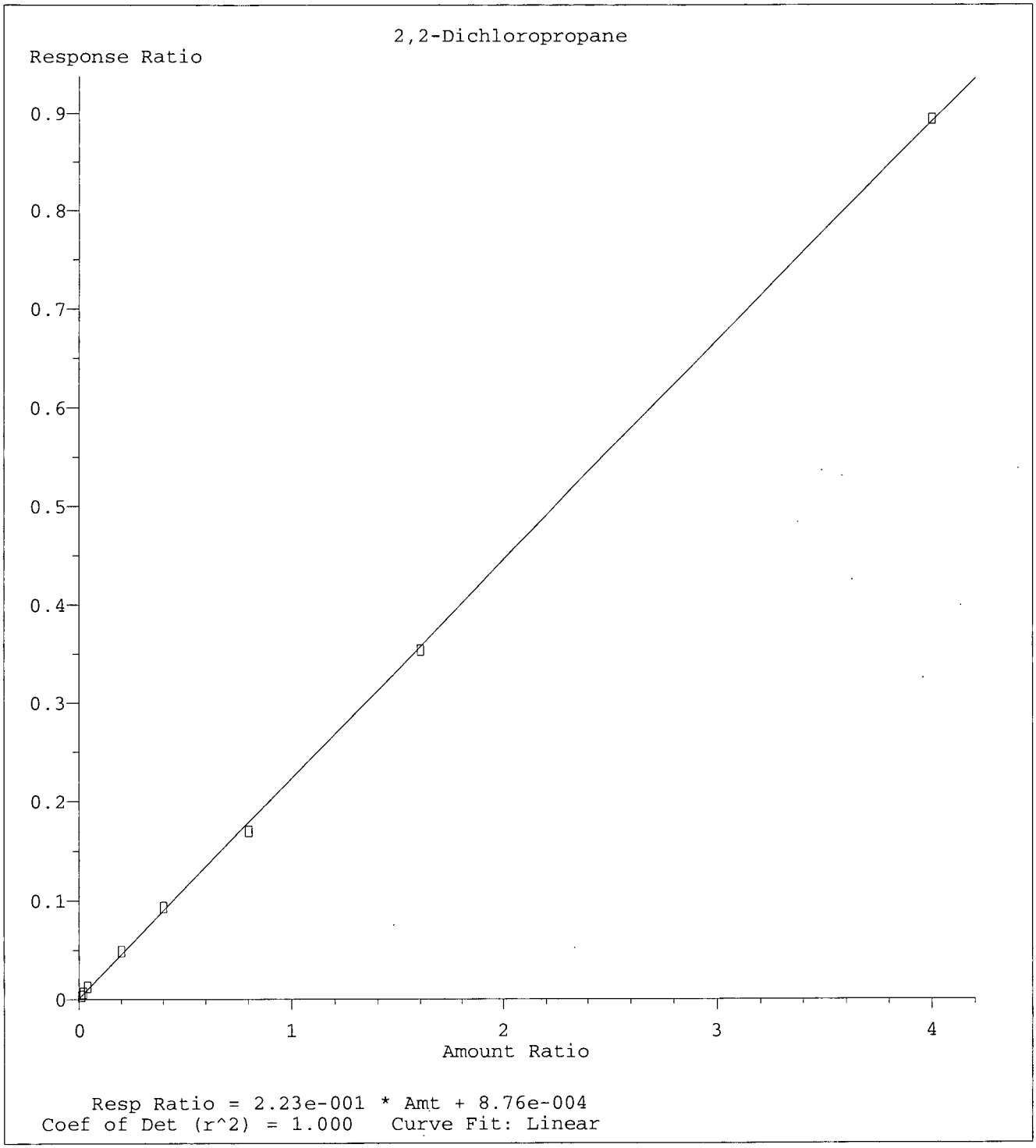

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



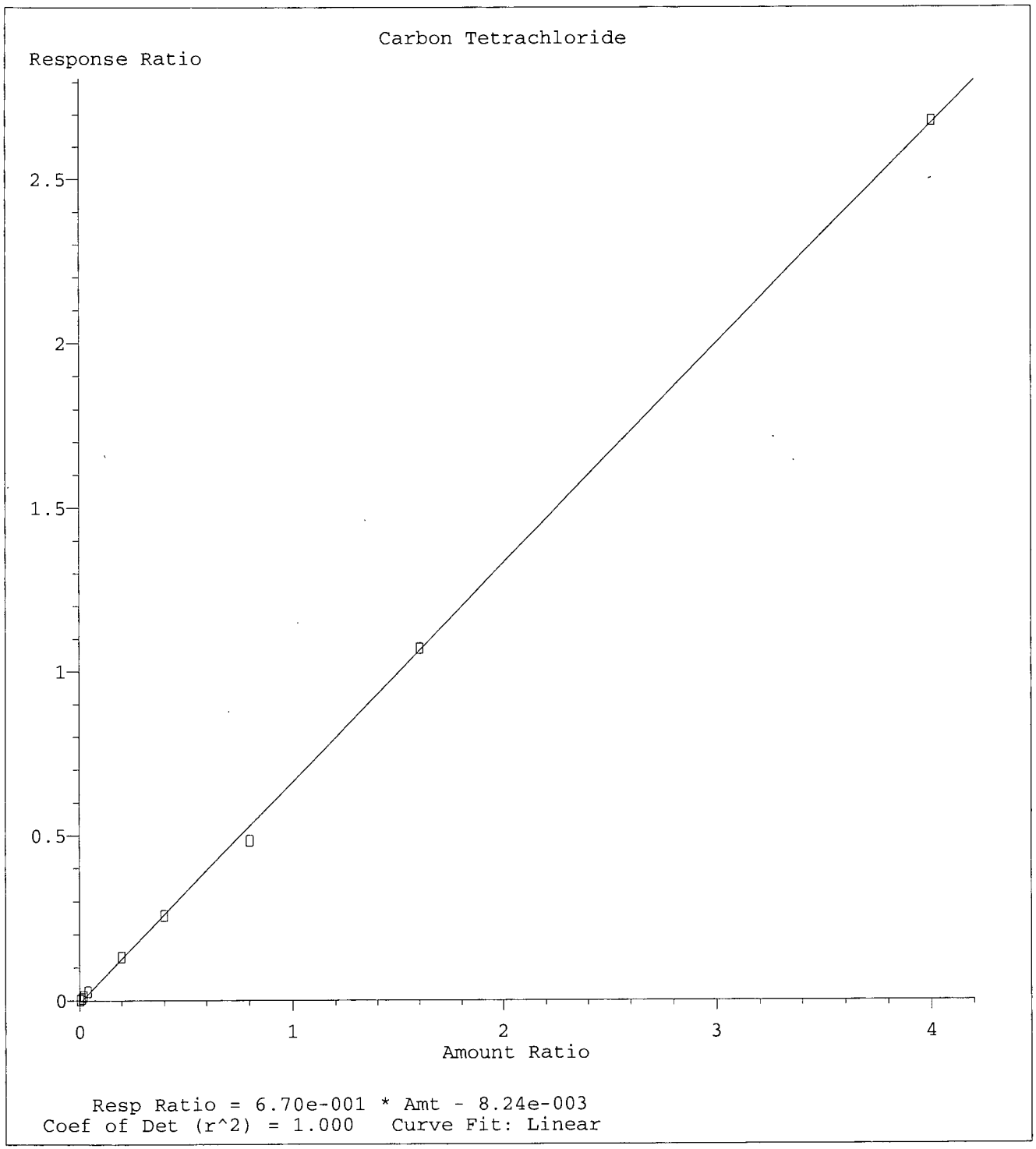

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



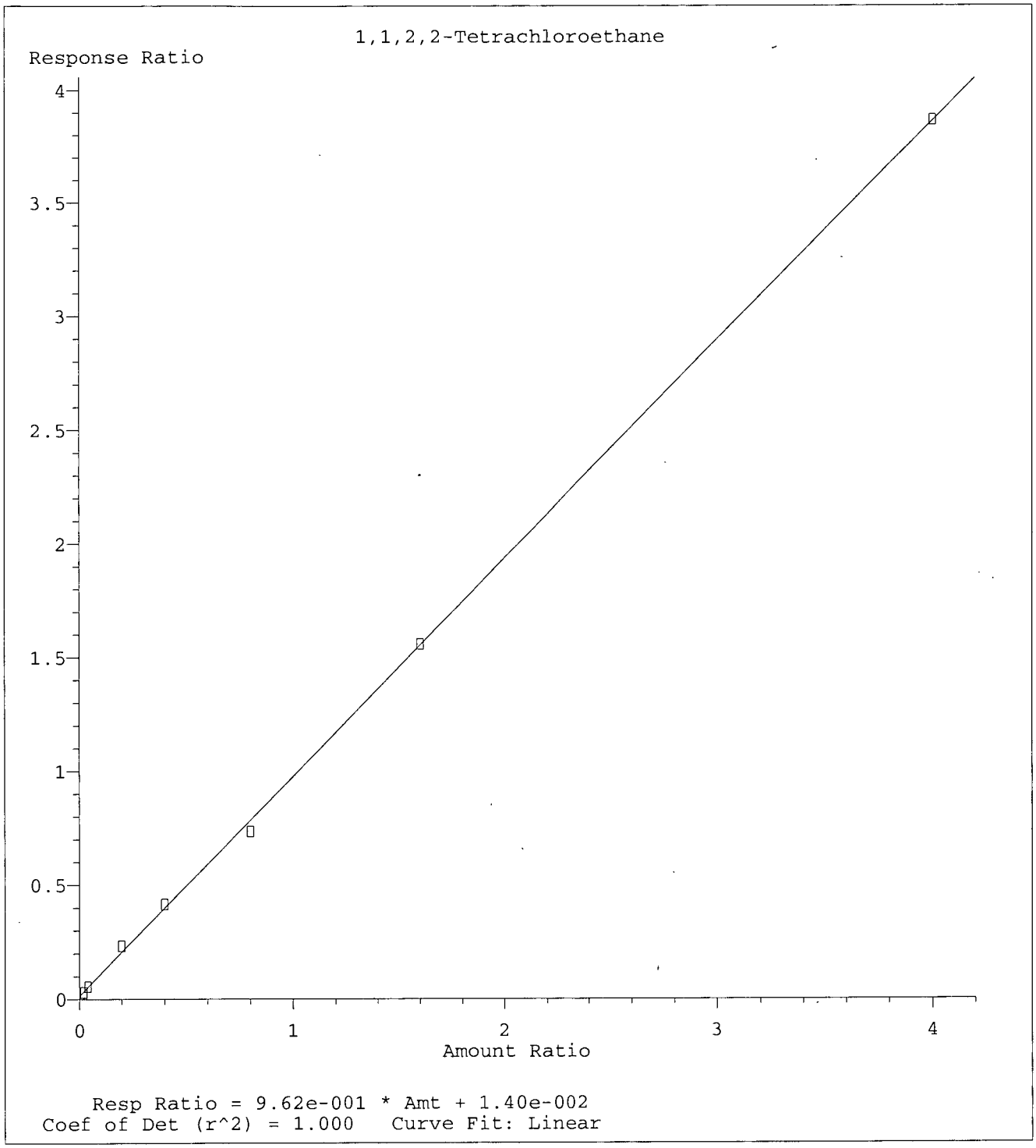

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



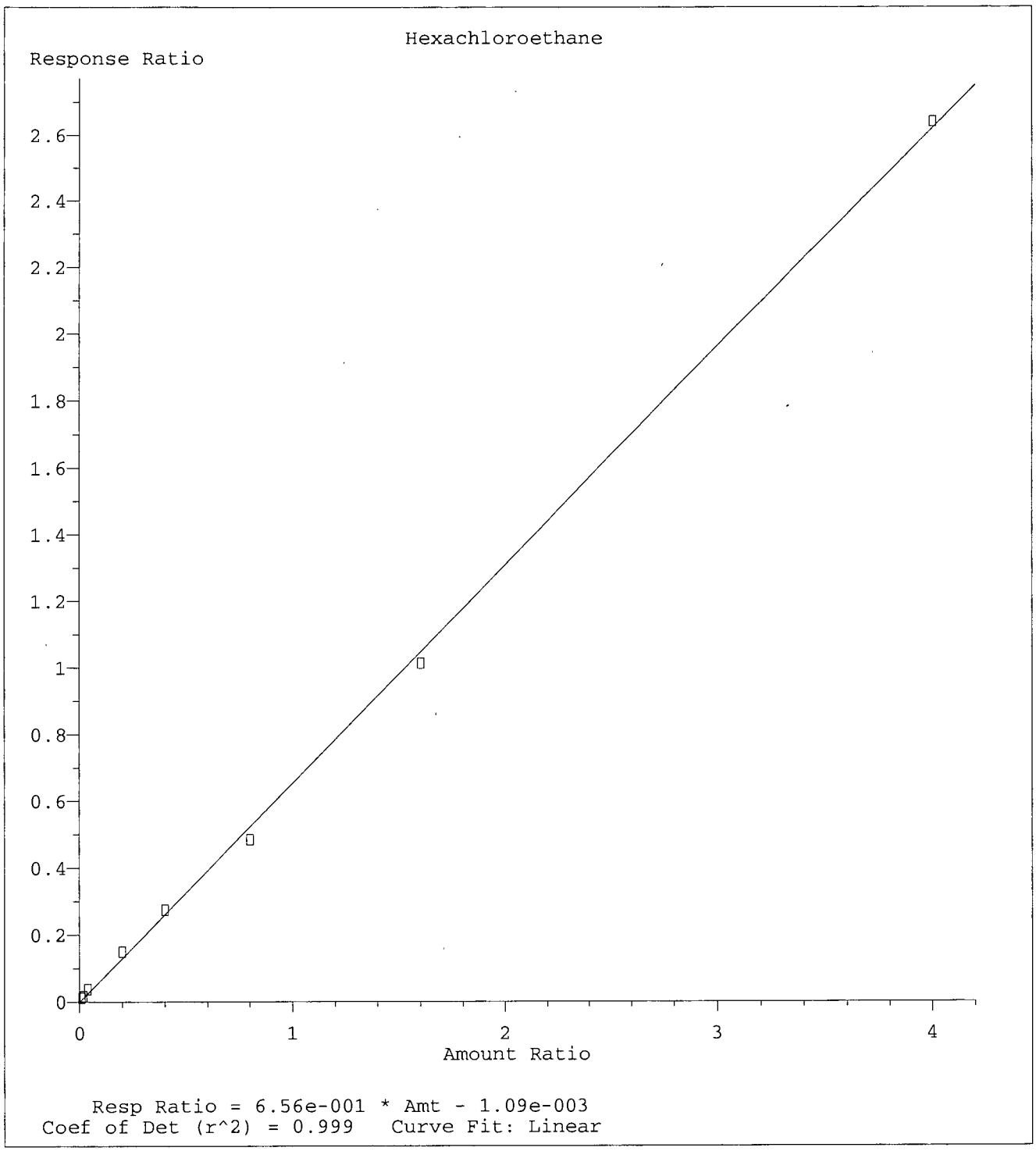

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



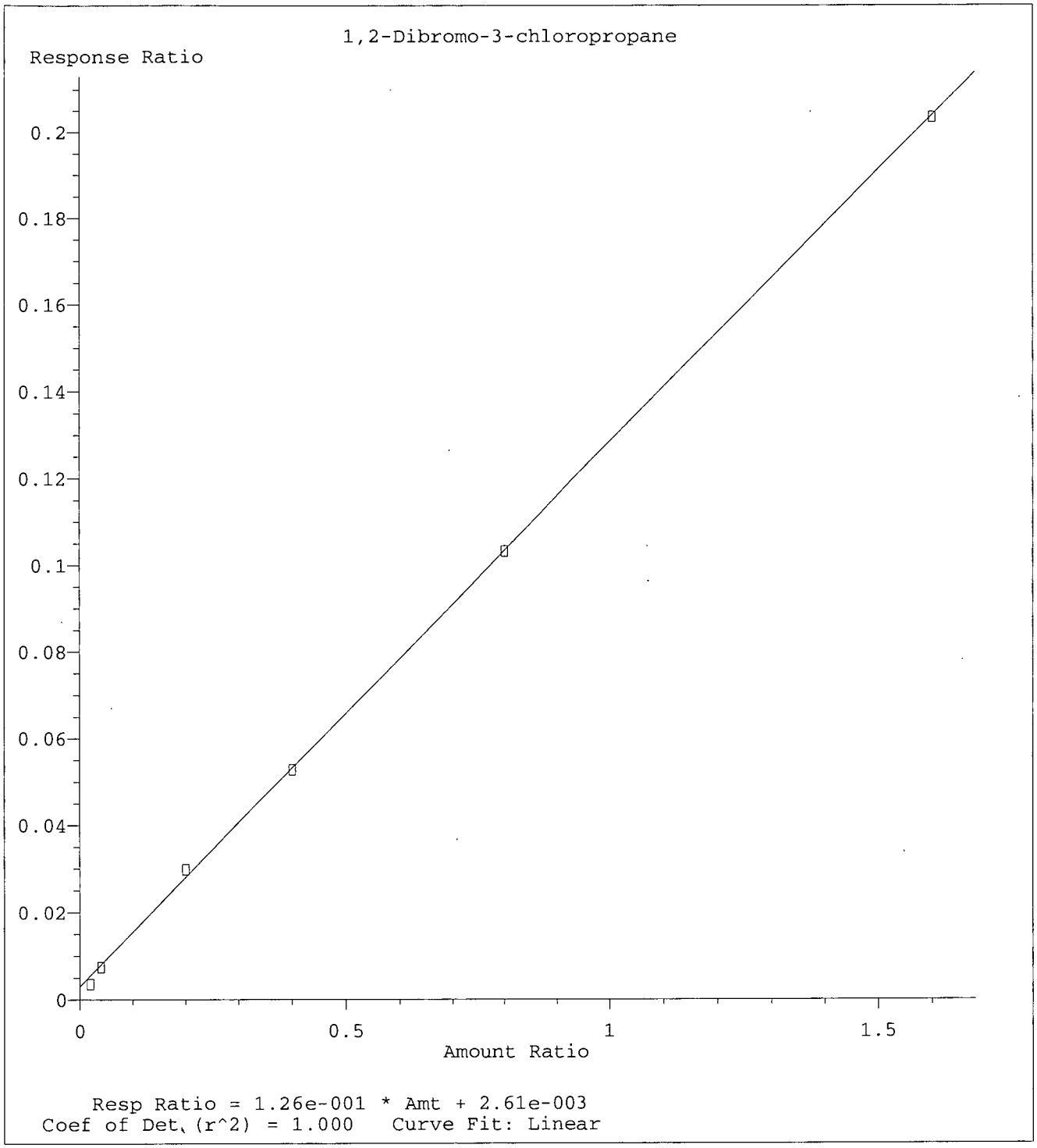

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014




Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014




Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014



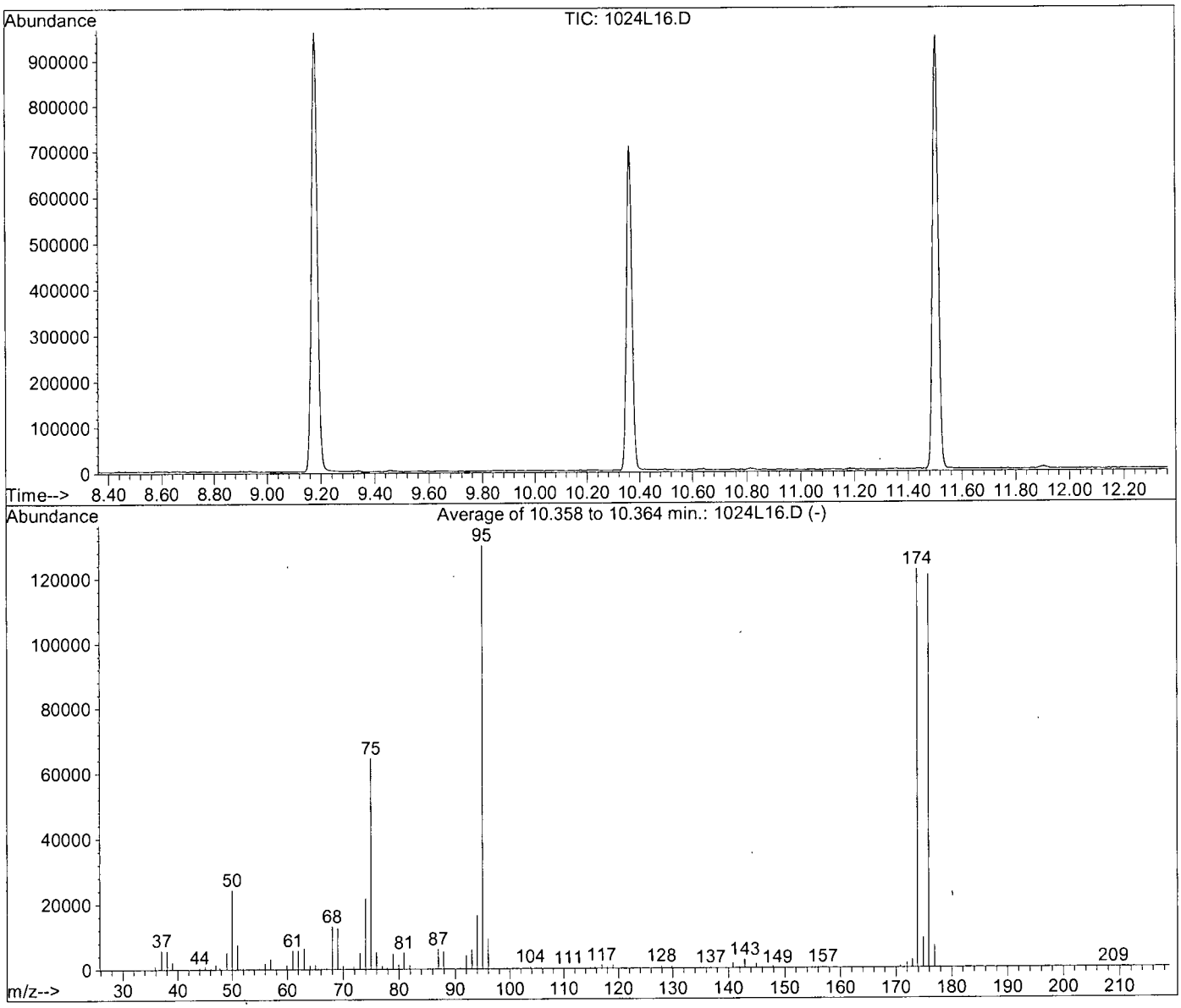

Method Name: M:\LOKI\DATA\141024\LALLW.M
Calibration Table Last Updated: Sat Oct 25 10:29:55 2014

BFB

Data File : M:\LOKI\DATA\141024\1024L16.D
Acq On : 24 Oct 14 17:30
Sample : 25ug/mL BFB Std 09-30-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 15
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2916

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 18.7 | 24299 | PASS |
| 75 | 95 | 30 | 60 | 49.6 | 64541 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 130128 | PASS |
| 96 | 95 | 5 | 9 | 7.2 | 9314 | PASS |
| 173 | 174 | 0.00 | 2 | 2.0 | 2467 | PASS |
| 174 | 95 | 50 | 100 | 94.1 | 122392 | PASS |
| 175 | 174 | 5 | 9 | 7.5 | 9131 | PASS |
| 176 | 174 | 95 | 101 | 98.5 | 120525 | PASS |
| 177 | 176 | 5 | 9 | 5.6 | 6711 | PASS |

1024L16.D LALLW.M Sat Oct 25 09:24:16 2014

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 10/24/14
Instrument: Loki
Initial Cal. Date: 10/24/14
Data File: 1024L17.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TML | Dichlorodifluoromethane | 0.3733 | 0.3143 | 16 | TML | 0.23 |
| 3 | TM | Freon 114 | 0.2840 | 0.2592 | 8.7 | TM | |
| 4 | TM**L | Chloromethane | 0.6542 | 0.4921 | 25 | TM**L | 2.0 |
| 5 | TM* | Vinyl chloride | 0.5742 | 0.5106 | 11 | TM* | |
| 6 | TML | Bromomethane | 0.4789 | 0.3631 | 24 | TML | 11 |
| 7 | TML | Chloroethane | 0.2808 | 0.2589 | 7.8 | TML | 10.0 |
| 8 | TM | Dichlorofluoromethane | 1.004 | 0.9785 | 2.6 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7468 | 0.6777 | 9.2 | TM | |
| 10 | TM | Acrolein | 0.0561 | 0.0560 | 0.02 | TM | |
| 11 | TML | Acetone | 0.2009 | 0.1452 | 28 | TML | 7.3 |
| 12 | TM | Freon-113 | 0.4305 | 0.4140 | 3.8 | TM | |
| 13 | TM* | 1,1-DCE | 0.6990 | 0.6533 | 6.5 | TM* | |
| 14 | TM | t-Butanol | 0.0154 | 0.0148 | 4.0 | TM | |
| 15 | TM | Acetonitrile | 0.0630 | 0.0667 | 5.9 | TM | |
| 16 | TML | Methyl Acetate | 0.4863 | 0.4346 | 11 | TML | 12 |
| 17 | TM | Iodomethane | 0.1533 | 0.1546 | 0.80 | TM | |
| 18 | TM | Acrylonitrile | 0.1336 | 0.1286 | 3.7 | TM | |
| 19 | TML | Methylene chloride | 0.5705 | 0.5244 | 8.1 | TML | 3.1 |
| 20 | TML | Carbon disulfide | 1.258 | 1.199 | 4.7 | TML | 6.0 |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.113 | 1.074 | 3.5 | TM | |
| 22 | TM | Trans-1,2-DCE | 0.4881 | 0.4648 | 4.8 | TM | |
| 23 | TM | Diisopropyl Ether | 1.306 | 1.205 | 7.7 | TM | |
| 24 | TM** | 1,1-DCA | 0.9319 | 0.8839 | 5.2 | TM** | |
| 25 | TM | Hexane | 0.3678 | 0.3455 | 6.0 | TM | |
| 26 | TM | Vinyl Acetate | 0.2882 | 0.2605 | 9.6 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.101 | 1.061 | 3.6 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.1929 | 0.1728 | 10 | TML | 0.45 |
| 29 | TM | Cis-1,2-DCE | 0.5311 | 0.5342 | 0.58 | TM | |
| 30 | TML | 2,2-Dichloropropane | 0.2549 | 0.2319 | 9.0 | TML | 3.2 |
| 31 | TM* | Chloroform | 0.9479 | 0.9098 | 4.0 | TM* | |
| 32 | TM | Bromochloromethane | 0.2742 | 0.2582 | 5.8 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5447 | 0.5337 | 2.0 | S | |
| 34 | TM | 1,1,1-TCA | 0.7841 | 0.7546 | 3.8 | TM | |
| 35 | TM | Cyclohexane | 0.3283 | 0.3299 | 0.48 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5496 | 0.5503 | 0.13 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.010 | 1.055 | 4.5 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.5770 | 0.5827 | 0.99 | S | |
| 39 | TML | Carbon Tetrachloride | 0.6026 | 0.6552 | 8.7 | TML | 0.84 |
| 40 | TM | Tert Amyl Methyl Ether | 1.091 | 1.146 | 5.0 | TM | |
| | | Average | | | 7.1 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/24/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1024L17.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TM | 1,2-DCA | 0.7161 | 0.6910 | 3.5 | TM | |
| 42 | TM | Benzene | 1.907 | 1.884 | 1.2 | TM | |
| 43 | TM | TCE | 0.4973 | 0.4818 | 3.1 | TM | |
| 44 | TM | 2-Pentanone | 0.3194 | 0.3235 | 1.3 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5713 | 0.5263 | 7.9 | TM* | |
| 46 | TM | Bromodichloromethane | 0.7300 | 0.6936 | 5.0 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5513 | 0.5255 | 4.7 | TM | |
| 48 | TM | Dibromomethane | 0.3403 | 0.3266 | 4.0 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | 0.0504 | 0.0491 | 2.6 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3796 | 0.3822 | 0.68 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4265 | 0.4041 | 5.3 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7966 | 0.7518 | 5.6 | TM | |
| 53 | TM* | Toluene | 1.845 | 2.007 | 8.8 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6982 | 0.6574 | 5.8 | TM | |
| 55 | TM | 1,1,2-TCA | 0.4038 | 0.3951 | 2.2 | TM | |
| 56 | TM | 2-Hexanone | 0.2429 | 0.2434 | 0.18 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.772 | 1.958 | 11 | S | |
| 59 | TM | 1,2-EDB | 0.5140 | 0.4993 | 2.8 | TM | |
| 60 | TM | Tetrachloroethene | 0.7256 | 0.6574 | 9.4 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5619 | 0.5569 | 0.89 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6806 | 0.6390 | 6.1 | TM | |
| 63 | TM | m&p-Xylene | 0.8596 | 0.9045 | 5.2 | TM | |
| 64 | TM | o-Xylene | 0.8102 | 0.8392 | 3.6 | TM | |
| 65 | TM | Styrene | 1.295 | 1.457 | 12 | TM | |
| 66 | S | 4-Bromofluorobenzene(S) | 0.6754 | 0.7073 | 4.7 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8513 | 0.8532 | 0.22 | TM | |
| 68 | TM | Dibromochloromethane | 0.6362 | 0.6220 | 2.2 | TM | |
| 69 | TM** | Chlorobenzene | 1.587 | 1.535 | 3.3 | TM** | |
| 70 | TM* | Ethylbenzene | 2.176 | 2.284 | 5.0 | TM* | |
| 71 | TM** | Bromoform | 0.4596 | 0.4583 | 0.27 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.171 | 3.179 | 0.23 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.126 | 1.025 | 9.0 | TM**L | 3.0 |
| 75 | TM | 1,2,3-Trichloropropane | 0.3239 | 0.3336 | 3.0 | TM | |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2001 | 0.1963 | 1.9 | TM | |
| 77 | TM | Bromobenzene | 1.080 | 1.122 | 3.9 | TM | |
| 78 | TM | n-Propylbenzene | 3.881 | 4.142 | 6.7 | TM | |
| 79 | TM | 4-Ethyltoluene | 3.409 | 3.657 | 7.3 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.490 | 2.662 | 6.9 | TM | |
| | | Average | | | 4.4 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/24/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1024L17.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 2.991 | 3.387 | 13 | TM | |
| 82 | TM | 4-Chlorotoluene | 2.960 | 3.332 | 13 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.397 | 2.428 | 1.3 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 2.895 | 3.092 | 6.8 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.535 | 3.736 | 5.7 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.032 | 3.194 | 5.3 | TM | |
| 87 | TM | Benzyl Chloride | 1.433 | 1.343 | 6.3 | TM | |
| 88 | TM | 1,3-DCB | 2.097 | 2.137 | 1.9 | TM | |
| 89 | TM | 1,4-DCB | 2.265 | 2.245 | 0.90 | TM | |
| 90 | TM | n-Butylbenzene | 2.798 | 2.826 | 0.98 | TM | |
| 91 | TM | 1,2-DCB | 2.057 | 1.995 | 3.0 | TM | |
| 92 | TML | Hexachloroethane | 0.7618 | 0.6711 | 12 | TML | 2.8 |
| 93 | TML | 1,2-Dibromo-3-chloropropane | 0.1498 | 0.1382 | 7.8 | TML | 4.7 |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.394 | 1.291 | 7.4 | TM | |
| 95 | TM | Hexachlorobutadiene | 0.8427 | 0.8259 | 2.0 | TM | |
| 96 | TM | Naphthalene | 1.536 | 1.544 | 0.51 | TM | |
| 97 | TM | 1,2,3-Trichlorobenzene | 1.376 | 1.306 | 5.1 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
| 103 | | | | | | | |
| 104 | | | | | | | |
| 105 | | | | | | | |
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| 111 | | | | | | | |
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| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 5.5 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L17.D Vial: 16
Acq On : 24 Oct 14 17:59 Operator: DG,SV,RS
Sample : 10ug/L Std 10-24-14(CCV) Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 387776 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 345920 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 219200 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 206973 | 24.49727 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 91.329% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 225960 | 25.24840 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 93.636% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 677445 | 27.63199 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 106.952% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 244685 | 26.18345 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 99.911% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 48747 | 10.02308 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 40203 | 9.12588 ppb | 97 |
| 4) Chloromethane | 1.14 | 50 | 76328 | 9.79669 ppb | 96 |
| 5) Vinyl chloride | 1.21 | 62 | 79198 | 8.89203 ppb | 95 |
| 6) Bromomethane | 1.44 | 94 | 56320 | 11.11992 ppb | 94 |
| 7) Chloroethane | 1.53 | 64 | 40152 | 10.99594 ppb | 92 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 151781 | 9.74339 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 105125 | 9.07579 ppb | 98 |
| 10) Acrolein | 2.10 | 56 | 108672 | 124.97689 ppb | 86 |
| 11) Acetone | 2.25 | 43 | 22515 | 10.73190 ppb | 93 |
| 12) Freon-113 | 2.20 | 101 | 64210 | 9.61620 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 101327 | 9.34620 ppb | 95 |
| 14) t-Butanol | 2.88 | 59 | 28664 | 120.03912 ppb | 98 |
| 15) Acetonitrile | 2.52 | 41 | 129371 | 132.42742 ppb | 93 |
| 16) Methyl Acetate | 2.60 | 43 | 67404 | 11.23110 ppb | 99 |
| 17) Iodomethane | 2.31 | 142 | 23976 | 10.08005 ppb | 94 |
| 18) Acrylonitrile | 2.97 | 52 | 19950 | 9.62626 ppb | 87 |
| 19) Methylene chloride | 2.67 | 84 | 81345 | 10.30653 ppb | 97 |
| 20) Carbon disulfide | 2.36 | 76 | 185927 | 10.60407 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 166612 | 9.64885 ppb | 95 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 72102 | 9.52333 ppb | 94 |
| 23) Diisopropyl Ether | 3.71 | 45 | 186849 | 9.22559 ppb | 96 |
| 24) 1,1-DCA | 3.53 | 63 | 137105 | 9.48495 ppb | 97 |
| 25) Hexane | 3.36 | 57 | 53595 | 9.39509 ppb | 98 |
| 26) Vinyl Acetate | 3.71 | 43 | 40400 | 9.03871 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 164622 | 9.64122 ppb | 96 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 26810 | 9.95479 ppb | 100 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 82860 | 10.05839 ppb | 99 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 35968 | 10.32187 ppb | 97 |
| 31) Chloroform | 4.90 | 83 | 141113 | 9.59764 ppb | 97 |
| 32) Bromochloromethane | 4.75 | 128 | 40046 | 9.41688 ppb | 100 |
| 34) 1,1,1-TCA | 5.10 | 97 | 117049 | 9.62370 ppb | 98 |
| 35) Cyclohexane | 5.16 | 41 | 51165 | 10.04780 ppb | 91 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 85364 | 10.01336 ppb | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 163687 | 10.45099 ppb | 98 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 101627 | 10.08422 ppb | 97 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 177793 | 10.50452 ppb | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 107188 | 9.64975 ppb | 97 |
| 42) Benzene | 5.58 | 78 | 292264 | 9.88049 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L17.D Vial: 16
Acq On : 24 Oct 14 17:59 Operator: DG,SV,RS
Sample : 10ug/L Std 10-24-14(CCV) Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 74737 | 9.68955 ppb | 92 |
| 44) 2-Pentanone | 6.63 | 43 | 627191 | 126.57849 ppb | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 81642 | 9.21361 ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 107581 | 9.50072 ppb | 96 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 81505 | 9.53083 ppb | 90 |
| 48) Dibromomethane | 6.75 | 93 | 50655 | 9.59635 ppb | 96 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 7609 | 9.73581 ppb | 99 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 59286 | 10.06816 ppb | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 62680 | 9.47473 ppb | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 116613 | 9.43814 ppb | 95 |
| 53) Toluene | 7.78 | 91 | 311328 | 10.87664 ppb | 98 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 101974 | 9.41603 ppb | 95 |
| 55) 1,1,2-TCA | 8.21 | 83 | 61280 | 9.78438 ppb | 98 |
| 56) 2-Hexanone | 8.51 | 43 | 37749 | 10.01829 ppb | 94 |
| 59) 1,2-EDB | 8.69 | 107 | 69093 | 9.71505 ppb | 99 |
| 60) Tetrachloroethene | 8.34 | 166 | 90960 | 9.05952 ppb | 96 |
| 61) 1-Chlorohexane | 9.22 | 91 | 77053 | 9.91097 ppb | 94 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 88422 | 9.38937 ppb | 95 |
| 63) m&p-Xylene | 9.46 | 106 | 250315 | 21.04634 ppb | 93 |
| 64) o-Xylene | 9.85 | 106 | 116119 | 10.35836 ppb | 99 |
| 65) Styrene | 9.86 | 104 | 201536 | 11.24657 ppb | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 118057 | 10.02223 ppb | 95 |
| 68) Dibromochloromethane | 8.60 | 129 | 86070 | 9.77698 ppb | 100 |
| 69) Chlorobenzene | 9.21 | 112 | 212402 | 9.67193 ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 316038 | 10.49827 ppb | 100 |
| 71) Bromoform | 10.02 | 173 | 63418 | 9.97278 ppb | 97 |
| 73) Isopropylbenzene | 10.22 | 105 | 278708 | 10.02284 ppb | 100 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 89906 | 10.29877 ppb | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 29254 | 10.30212 ppb | 96 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 17211 | 9.80747 ppb | 95 |
| 77) Bromobenzene | 10.49 | 156 | 98402 | 10.38847 ppb | 99 |
| 78) n-Propylbenzene | 10.63 | 91 | 363202 | 10.67476 ppb | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 320674 | 10.72796 ppb | 100 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 233430 | 10.69224 ppb | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 296931 | 11.32287 ppb | 98 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 292142 | 11.25458 ppb | 98 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 212929 | 10.12952 ppb | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 271122 | 10.68232 ppb | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 327545 | 10.56895 ppb | 97 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 280089 | 10.53466 ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 117712 | 9.36885 ppb | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 187389 | 10.19232 ppb | 97 |
| 89) 1,4-DCB | 11.53 | 146 | 196820 | 9.90961 ppb | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 247755 | 10.09781 ppb | 97 |
| 91) 1,2-DCB | 11.89 | 146 | 174949 | 9.69816 ppb | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 58842 | 10.27946 ppb | 93 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 12113 | 10.47484 ppb | 94 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 113179 | 9.26181 ppb | 97 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 72413 | 9.80033 ppb | 97 |
| 96) Naphthalene | 13.72 | 128 | 135360 | 10.05095 ppb | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 114477 | 9.48687 ppb | 95 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

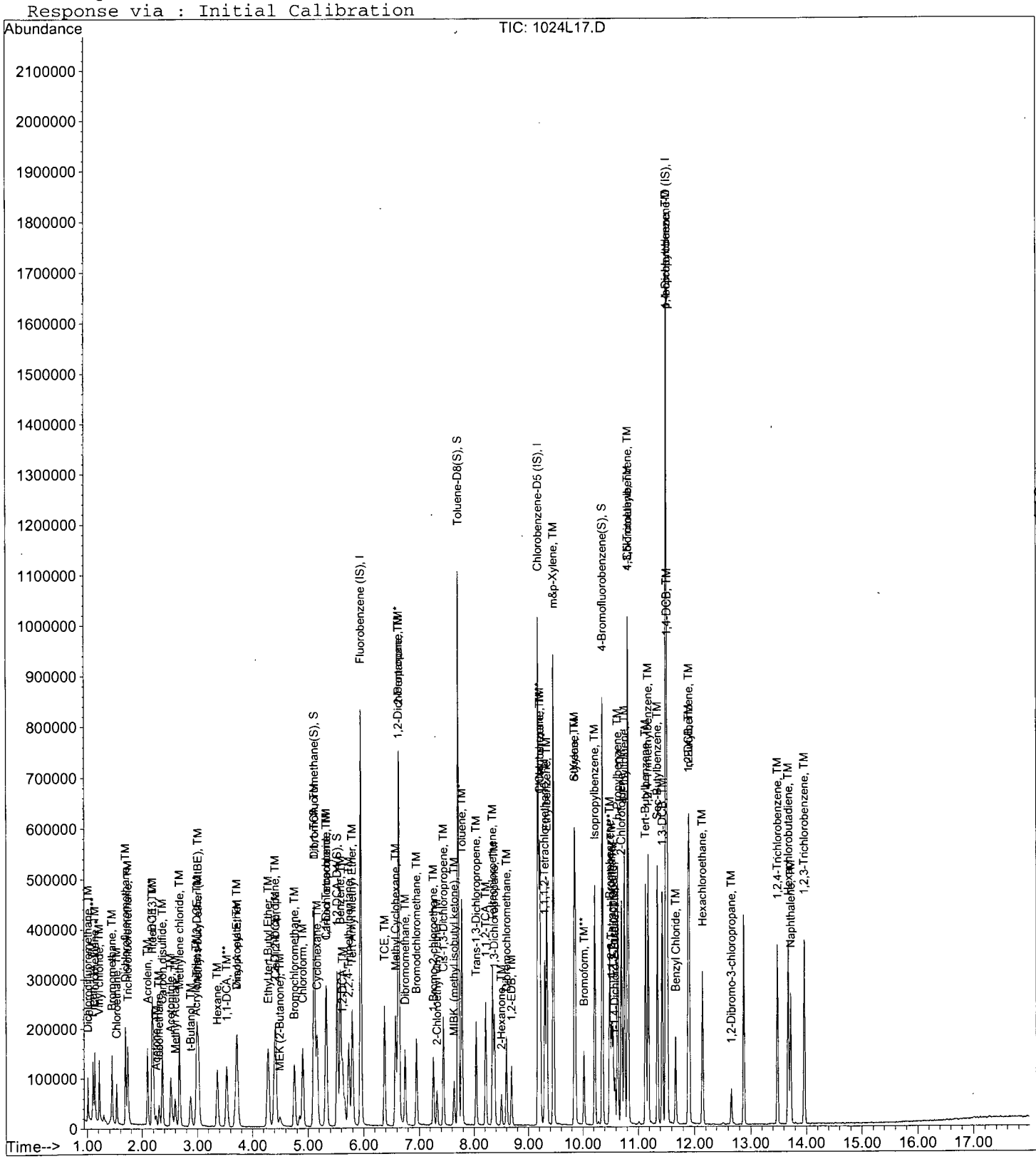
Data File : M:\LOKI\DATA\141024\1024L17.D
Acq On : 24 Oct 14 17:59
Sample : 10ug/L Std 10-24-14(CCV)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration

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VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 10/24/14
Instrument: Loki
Initial Cal. Date: 10/24/14
Data File: 1024L18.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TML | Dichlorodifluoromethane | 0.3733 | 0.3018 | 19 | TML | 3.7 |
| 3 | TM | Freon 114 | 0.2840 | 0.2439 | 14 | TM | |
| 4 | TM**L | Chloromethane | 0.6542 | 0.4915 | 25 | TM**L | 2.2 |
| 5 | TM* | Vinyl chloride | 0.5742 | 0.4871 | 15 | TM* | |
| 6 | TML | Bromomethane | 0.4789 | 0.3376 | 29 | TML | 3.1 |
| 7 | TML | Chloroethane | 0.2808 | 0.2390 | 15 | TML | 1.1 |
| 8 | TM | Dichlorofluoromethane | 1.004 | 0.9347 | 6.9 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7468 | 0.6295 | 16 | TM | |
| 10 | TM | Acrolein | 0.0561 | 0.0546 | 2.6 | TM | |
| 11 | TML | Acetone | 0.2009 | 0.1320 | 34 | TML | 3.4 |
| 12 | TM | Freon-113 | 0.4305 | 0.3930 | 8.7 | TM | |
| 13 | TM* | 1,1-DCE | 0.6990 | 0.5940 | 15 | TM* | |
| 14 | TM | t-Butanol | 0.0154 | 0.0145 | 5.9 | TM | |
| 15 | TM | Acetonitrile | 0.0630 | 0.0590 | 6.4 | TM | |
| 16 | TML | Methyl Acetate | 0.4863 | 0.4027 | 17 | TML | 3.6 |
| 17 | TM | Iodomethane | 0.1533 | 0.1329 | 13 | TM | |
| 18 | TM | Acrylonitrile | 0.1336 | 0.1243 | 7.0 | TM | |
| 19 | TML | Methylene chloride | 0.5705 | 0.5099 | 11 | TML | 0.11 |
| 20 | TML | Carbon disulfide | 1.258 | 1.147 | 8.8 | TML | 1.6 |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.113 | 1.034 | 7.1 | TM | |
| 22 | TM | Trans-1,2-DCE | 0.4881 | 0.4270 | 13 | TM | |
| 23 | TM | Diisopropyl Ether | 1.306 | 1.112 | 15 | TM | |
| 24 | TM** | 1,1-DCA | 0.9319 | 0.8031 | 14 | TM** | |
| 25 | TM | Hexane | 0.3678 | 0.3220 | 12 | TM | |
| 26 | TM | Vinyl Acetate | 0.2882 | 0.2325 | 19 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.101 | 1.018 | 7.6 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.1929 | 0.1665 | 14 | TML | 4.2 |
| 29 | TM | Cis-1,2-DCE | 0.5311 | 0.4937 | 7.0 | TM | |
| 30 | TML | 2,2-Dichloropropane | 0.2549 | 0.2134 | 16 | TML | 5.1 |
| 31 | TM* | Chloroform | 0.9479 | 0.8445 | 11 | TM* | |
| 32 | TM | Bromochloromethane | 0.2742 | 0.2440 | 11 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5447 | 0.5139 | 5.7 | S | |
| 34 | TM | 1,1,1-TCA | 0.7841 | 0.7321 | 6.6 | TM | |
| 35 | TM | Cyclohexane | 0.3283 | 0.3044 | 7.3 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5496 | 0.5297 | 3.6 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.010 | 1.001 | 0.86 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.5770 | 0.5647 | 2.1 | S | |
| 39 | TML | Carbon Tetrachloride | 0.6026 | 0.6251 | 3.7 | TML | 3.6 |
| 40 | TM | Tert Amyl Methyl Ether | 1.091 | 1.094 | 0.27 | TM | |
| | | Average | | | 11.4 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/24/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1024L18.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TM | 1,2-DCA | 0.7161 | 0.6440 | 10 | TM | |
| 42 | TM | Benzene | 1.907 | 1.807 | 5.3 | TM | |
| 43 | TM | TCE | 0.4973 | 0.4787 | 3.7 | TM | |
| 44 | TM | 2-Pentanone | 0.3194 | 0.3291 | 3.0 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5713 | 0.5265 | 7.8 | TM* | |
| 46 | TM | Bromodichloromethane | 0.7300 | 0.6543 | 10 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5513 | 0.4929 | 11 | TM | |
| 48 | TM | Dibromomethane | 0.3403 | 0.3132 | 8.0 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | 0.0504 | 0.0429 | 15 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3796 | 0.3572 | 5.9 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4265 | 0.3863 | 9.4 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7966 | 0.7153 | 10 | TM | |
| 53 | TM* | Toluene | 1.845 | 1.915 | 3.8 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6982 | 0.6357 | 9.0 | TM | |
| 55 | TM | 1,1,2-TCA | 0.4038 | 0.3618 | 10 | TM | |
| 56 | TM | 2-Hexanone | 0.2429 | 0.2276 | 6.3 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.772 | 2.051 | 16 | S | |
| 59 | TM | 1,2-EDB | 0.5140 | 0.4927 | 4.1 | TM | |
| 60 | TM | Tetrachloroethene | 0.7256 | 0.6694 | 7.7 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5619 | 0.5588 | 0.55 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6806 | 0.6301 | 7.4 | TM | |
| 63 | TM | m&p-Xylene | 0.8596 | 0.9322 | 8.4 | TM | |
| 64 | TM | o-Xylene | 0.8102 | 0.8550 | 5.5 | TM | |
| 65 | TM | Styrene | 1.295 | 1.533 | 18 | TM | |
| 66 | S | 4-Bromofluorobenzene(S) | 0.6754 | 0.7322 | 8.4 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8513 | 0.8540 | 0.31 | TM | |
| 68 | TM | Dibromochloromethane | 0.6362 | 0.6334 | 0.45 | TM | |
| 69 | TM** | Chlorobenzene | 1.587 | 1.587 | 0.01 | TM** | |
| 70 | TM* | Ethylbenzene | 2.176 | 2.341 | 7.6 | TM* | |
| 71 | TM** | Bromoform | 0.4596 | 0.4455 | 3.1 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.171 | 3.139 | 1.0 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.126 | 0.9458 | 16 | TM**L | 5.3 |
| 75 | TM | 1,2,3-Trichloropropane | 0.3239 | 0.3147 | 2.8 | TM | |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2001 | 0.1956 | 2.2 | TM | |
| 77 | TM | Bromobenzene | 1.080 | 1.109 | 2.7 | TM | |
| 78 | TM | n-Propylbenzene | 3.881 | 3.979 | 2.5 | TM | |
| 79 | TM | 4-Ethyltoluene | 3.409 | 3.620 | 6.2 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.490 | 2.594 | 4.2 | TM | |
| | | Average | | | 6.7 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/24/14
Instrument: Loki
Cal. Date: 10/24/14
Data File: 1024L18.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 2.991 | 3.247 | 8.6 | TM | |
| 82 | TM | 4-Chlorotoluene | 2.960 | 3.162 | 6.8 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.397 | 2.281 | 4.9 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 2.895 | 2.963 | 2.3 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.535 | 3.606 | 2.0 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.032 | 3.127 | 3.1 | TM | |
| 87 | TM | Benzyl Chloride | 1.433 | 1.259 | 12 | TM | |
| 88 | TM | 1,3-DCB | 2.097 | 2.093 | 0.16 | TM | |
| 89 | TM | 1,4-DCB | 2.265 | 2.156 | 4.8 | TM | |
| 90 | TM | n-Butylbenzene | 2.798 | 2.775 | 0.83 | TM | |
| 91 | TM | 1,2-DCB | 2.057 | 1.946 | 5.4 | TM | |
| 92 | TML | Hexachloroethane | 0.7618 | 0.6789 | 11 | TML | 4.0 |
| 93 | TML | 1,2-Dibromo-3-chloropropane | 0.1498 | 0.1286 | 14 | TML | 2.8 |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.394 | 1.221 | 12 | TM | |
| 95 | TM | Hexachlorobutadiene | 0.8427 | 0.7572 | 10 | TM | |
| 96 | TM | Naphthalene | 1.536 | 1.438 | 6.4 | TM | |
| 97 | TM | 1,2,3-Trichlorobenzene | 1.376 | 1.242 | 9.7 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
| 103 | | | | | | | |
| 104 | | | | | | | |
| 105 | | | | | | | |
| 106 | | | | | | | |
| 107 | | | | | | | |
| 108 | | | | | | | |
| 109 | | | | | | | |
| 110 | | | | | | | |
| 111 | | | | | | | |
| 112 | | | | | | | |
| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 6.7 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L18.D
Acq On : 24 Oct 14 18:27
Sample : 10ug/L Std 10-24-14(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 17
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

$\frac{81933 \times 25}{420480 \times 0.5742} = 8.48$

SV 10/29/14

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 420480 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 345920 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 232832 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 216078 | 23.58578 ppb | 0.00 |
| Spiked Amount 26.823 | | | Recovery | = 87.933% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 237450 | 24.46866 ppb | 0.00 |
| Spiked Amount 26.964 | | | Recovery | = 90.747% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 709354 | 28.93351 ppb | 0.00 |
| Spiked Amount 25.836 | | | Recovery | = 111.991% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 253274 | 27.10255 ppb | 0.00 |
| Spiked Amount 26.206 | | | Recovery | = 103.422% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 50766 | 9.63378 ppb | | 94 |
| 3) Freon 114 | 1.10 | 85 | 41023 | 8.58775 ppb | | 96 |
| 4) Chloromethane | 1.14 | 50 | 82659 | 9.78360 ppb | | 96 |
| 5) Vinyl chloride | 1.22 | 62 | 81933 | 8.48362 ppb | | 100 |
| 6) Bromomethane | 1.44 | 94 | 56782 | 10.30713 ppb | | 98 |
| 7) Chloroethane | 1.53 | 64 | 40200 | 10.10982 ppb | | 95 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 157212 | 9.30709 ppb | | 98 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 105879 | 8.42993 ppb | | 97 |
| 10) Acrolein | 2.10 | 56 | 114800 | 121.75576 ppb | # | 96 |
| 11) Acetone | 2.25 | 43 | 22198 | 9.65857 ppb | | 93 |
| 12) Freon-113 | 2.20 | 101 | 66101 | 9.12944 ppb | | 97 |
| 13) 1,1-DCE | 2.18 | 61 | 99914 | 8.49908 ppb | | 90 |
| 14) t-Butanol | 2.88 | 59 | 30464 | 117.65449 ppb | | 97 |
| 15) Acetonitrile | 2.52 | 41 | 123978 | 117.03647 ppb | | 96 |
| 16) Methyl Acetate | 2.60 | 43 | 67732 | 10.36417 ppb | | 97 |
| 17) Iodomethane | 2.31 | 142 | 22360 | 8.66949 ppb | | 97 |
| 18) Acrylonitrile | 2.96 | 52 | 20899 | 9.29985 ppb | | 92 |
| 19) Methylene chloride | 2.67 | 84 | 85766 | 10.01107 ppb | | 97 |
| 20) Carbon disulfide | 2.36 | 76 | 192888 | 10.15801 ppb | | 98 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 173888 | 9.28698 ppb | | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 71817 | 8.74791 ppb | | 95 |
| 23) Diisopropyl Ether | 3.72 | 45 | 187104 | 8.51966 ppb | | 95 |
| 24) 1,1-DCA | 3.53 | 63 | 135070 | 8.61740 ppb | | 99 |
| 25) Hexane | 3.36 | 57 | 54165 | 8.75651 ppb | | 97 |
| 26) Vinyl Acetate | 3.71 | 43 | 39112 | 8.06994 ppb | | 100 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 171164 | 9.24468 ppb | | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 28008 | 9.58473 ppb | | 93 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 83032 | 9.29532 ppb | | 98 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 35888 | 9.49002 ppb | | 97 |
| 31) Chloroform | 4.90 | 83 | 142044 | 8.90956 ppb | | 99 |
| 32) Bromochloromethane | 4.75 | 128 | 41039 | 8.89980 ppb | | 94 |
| 34) 1,1,1-TCA | 5.10 | 97 | 123135 | 9.33666 ppb | | 97 |
| 35) Cyclohexane | 5.16 | 41 | 51190 | 9.27084 ppb | | 95 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 89092 | 9.63784 ppb | | 96 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 168373 | 9.91406 ppb | # | 86 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 105138 | 9.63529 ppb | | 98 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 184024 | 10.02701 ppb | | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 108312 | 8.99253 ppb | | 95 |
| 42) Benzene | 5.58 | 78 | 303897 | 9.47469 ppb | | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1024L18.D Vial: 17
Acq On : 24 Oct 14 18:27 Operator: DG,SV,RS
Sample : 10ug/L Std 10-24-14(SS) Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 25 10:30 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 80506 | 9.62569 | ppb | 96 |
| 44) 2-Pentanone | 6.63 | 43 | 691875 | 128.77256 | ppb | 98 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 88545 | 9.21544 | ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 110056 | 8.96335 | ppb | 99 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 82908 | 8.94085 | ppb | 99 |
| 48) Dibromomethane | 6.75 | 93 | 52671 | 9.20218 | ppb | 95 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 7210 | 8.50777 | ppb | 88 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 60077 | 9.40897 | ppb | 96 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 64976 | 9.05788 | ppb | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 120306 | 8.97971 | ppb | 93 |
| 53) Toluene | 7.78 | 91 | 322070 | 10.37678 | ppb | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 106916 | 9.10451 | ppb | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 60844 | 8.95917 | ppb | 96 |
| 56) 2-Hexanone | 8.51 | 43 | 38282 | 9.36954 | ppb | 98 |
| 59) 1,2-EDB | 8.69 | 107 | 68171 | 9.58541 | ppb | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 92629 | 9.22575 | ppb | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 77315 | 9.94467 | ppb | 97 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 87189 | 9.25844 | ppb | 92 |
| 63) m&p-Xylene | 9.46 | 106 | 257969 | 21.68988 | ppb | 98 |
| 64) o-Xylene | 9.85 | 106 | 118299 | 10.55282 | ppb | 98 |
| 65) Styrene | 9.86 | 104 | 212130 | 11.83776 | ppb | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 118161 | 10.03106 | ppb | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 87641 | 9.95544 | ppb | 98 |
| 69) Chlorobenzene | 9.21 | 112 | 219585 | 9.99902 | ppb | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 323851 | 10.75780 | ppb | 97 |
| 71) Bromoform | 10.02 | 173 | 61644 | 9.69381 | ppb | 87 |
| 73) Isopropylbenzene | 10.23 | 105 | 292345 | 9.89772 | ppb | 98 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 88082 | 9.47084 | ppb | 97 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 29308 | 9.71685 | ppb | 92 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 18221 | 9.77509 | ppb | 93 |
| 77) Bromobenzene | 10.50 | 156 | 103323 | 10.26934 | ppb | 96 |
| 78) n-Propylbenzene | 10.63 | 91 | 370550 | 10.25309 | ppb | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 337129 | 10.61811 | ppb | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 241604 | 10.41871 | ppb | 98 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 302447 | 10.85796 | ppb | 97 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 294476 | 10.68029 | ppb | 97 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 212395 | 9.51253 | ppb | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 275911 | 10.23453 | ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 335863 | 10.20283 | ppb | 100 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 291202 | 10.31138 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 117229 | 8.78412 | ppb | 98 |
| 88) 1,3-DCB | 11.44 | 146 | 194967 | 9.98362 | ppb | 96 |
| 89) 1,4-DCB | 11.53 | 146 | 200806 | 9.51835 | ppb | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 258451 | 9.91701 | ppb | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 181264 | 9.45991 | ppb | 99 |
| 92) Hexachloroethane | 12.15 | 117 | 63229 | 10.39865 | ppb | 99 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 11980 | 9.71744 | ppb | 97 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 113751 | 8.76361 | ppb | 99 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 70522 | 8.98559 | ppb | 95 |
| 96) Naphthalene | 13.72 | 128 | 133952 | 9.36405 | ppb | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 115688 | 9.02590 | ppb | 94 |

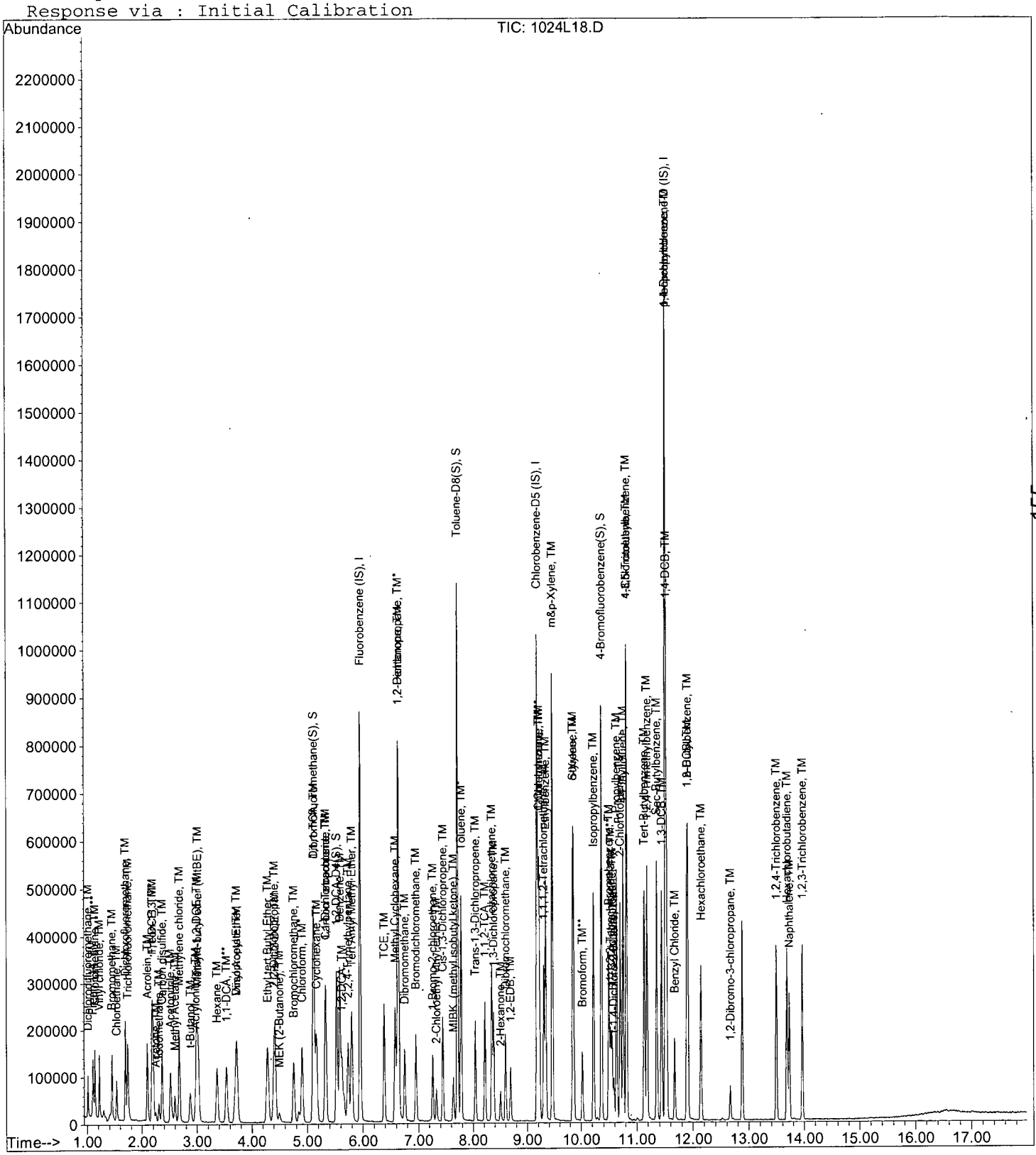
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1024L18.D  Vial: 17
Acq On : 24 Oct 14 18:27  Operator: DG,SV,RS
Sample : 10ug/L Std 10-24-14(SS)  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 25 10:30 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Sat Oct 25 10:29:55 2014
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 10/26/2014
Instrument: Loki
Initial Cal. Date: 10/24/2014
Data File: 1026L04.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TML | Dichlorodifluoromethane | 0.3733 | 0.3052 | 18 | TML | 2.6 |
| 3 | TM | Freon 114 | 0.2840 | 0.2760 | 2.8 | TM | |
| 4 | TM**L | Chloromethane | 0.6542 | 0.4448 | 32 | TM**L | 12 |
| 5 | TM* | Vinyl chloride | 0.6152 | 0.5058 | 18 | TM* | |
| 6 | TML | Bromomethane | 0.4789 | 0.3677 | 23 | TML | 13 |
| 7 | TML | Chloroethane | 0.2808 | 0.2590 | 7.8 | TML | 10 |
| 8 | TM | Dichlorofluoromethane | 1.004 | 0.9722 | 3.2 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7468 | 0.6926 | 7.3 | TM | |
| 10 | TM | Acrolein | 0.0561 | 0.0533 | 4.9 | TM | |
| 11 | TML | Acetone | 0.2009 | 0.1279 | 36 | TML | 6.7 |
| 12 | TM | Freon-113 | 0.4305 | 0.4346 | 0.95 | TM | |
| 13 | TM* | 1,1-DCE | 0.7001 | 0.6428 | 8.2 | TM* | |
| 14 | TM | t-Butanol | 0.0154 | 0.0136 | 12 | TM | |
| 15 | TM | Acetonitrile | 0.0630 | 0.0554 | 12 | TM | |
| 16 | TML | Methyl Acetate | 0.4863 | 0.3900 | 20 | TML | 0.18 |
| 17 | TM | Iodomethane | 0.1533 | 0.1817 | 19 | TM | |
| 18 | TM | Acrylonitrile | 0.1336 | 0.1176 | 12 | TM | |
| 19 | TML | Methylene chloride | 0.5705 | 0.5261 | 7.8 | TML | 3.4 |
| 20 | TML | Carbon disulfide | 1.258 | 1.175 | 6.6 | TML | 4.0 |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.113 | 1.005 | 9.7 | TM | |
| 22 | TM | Trans-1,2-DCE | 0.4881 | 0.4482 | 8.2 | TM | |
| 23 | TM | Diisopropyl Ether | 1.306 | 1.288 | 1.4 | TM | |
| 24 | TM** | 1,1-DCA | 0.9319 | 0.8584 | 7.9 | TM** | |
| 25 | TM | Hexane | 0.3678 | 0.3791 | 3.1 | TM | |
| 26 | TM | Vinyl Acetate | 0.2882 | 0.2962 | 2.8 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.101 | 1.057 | 4.0 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.1929 | 0.1633 | 15 | TML | 6.1 |
| 29 | TM | Cis-1,2-DCE | 0.5311 | 0.5243 | 1.3 | TM | |
| 30 | TML | 2,2-Dichloropropane | 0.2549 | 0.2649 | 3.9 | TML | 18 |
| 31 | TM* | Chloroform | 0.9960 | 0.9063 | 9.0 | TM* | |
| 32 | TM | Bromochloromethane | 0.2742 | 0.2723 | 0.68 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5447 | 0.5195 | 4.6 | S | |
| 34 | TM | 1,1,1-TCA | 0.7841 | 0.7426 | 5.3 | TM | |
| 35 | TM | Cyclohexane | 0.3283 | 0.3388 | 3.2 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5496 | 0.5604 | 2.0 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.010 | 1.168 | 16 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.5770 | 0.5694 | 1.3 | S | |
| 39 | TM | Carbon Tetrachloride | 0.6312 | 0.6598 | 4.5 | TM | |
| 40 | TM | Tert Amyl Methyl Ether | 1.091 | 1.050 | 3.8 | TM | |
| | | Average | | | 9.2 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/26/2014
Instrument: Loki
Cal. Date: 10/24/2014
Data File: 1026L04.D

| | | Compound | MEAN | CCRF | %D | | %Drift | |
|---|---|---|---|---|---|---|---|---|
| 41 | TML | 1,2-DCA | 0.7554 | 0.6667 | 12 | TML | 4.3 | |
| 42 | TML | Benzene | 1.976 | 1.816 | 8.1 | TML | 0.67 | |
| 43 | TM | TCE | 0.4973 | 0.4558 | 8.3 | TM | | |
| 44 | TM | 2-Pentanone | 0.3194 | 0.3001 | 6.1 | TM | | |
| 45 | TM* | 1,2-Dichloropropane | 0.5713 | 0.5198 | 9.0 | TM* | | |
| 46 | TM | Bromodichloromethane | 0.7300 | 0.6787 | 7.0 | TM | | |
| 47 | TM | Methyl Cyclohexane | 0.5513 | 0.5557 | 0.80 | TM | | |
| 48 | TM | Dibromomethane | 0.3403 | 0.3254 | 4.4 | TM | | |
| 49 | TM | 2-Chloroethyl vinyl ether | 0.0504 | 0.0359 | 29 | TM | | * |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3796 | 0.3106 | 18 | TM | | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4265 | 0.3977 | 6.7 | TM | | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7966 | 0.7182 | 9.8 | TM | | |
| 53 | TM* | Toluene | 1.868 | 1.951 | 4.5 | TM* | | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6982 | 0.6318 | 9.5 | TM | | |
| 55 | TM | 1,1,2-TCA | 0.4038 | 0.3503 | 13 | TM | | |
| 56 | TM | 2-Hexanone | 0.2429 | 0.2062 | 15 | TM | | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | | |
| 58 | S | Toluene-D8(S) | 1.772 | 2.060 | 16 | S | | |
| 59 | TM | 1,2-EDB | 0.5140 | 0.4808 | 6.5 | TM | | |
| 60 | TM | Tetrachloroethene | 0.7368 | 0.7314 | 0.74 | TM | | |
| 61 | TM | 1-Chlorohexane | 0.5619 | 0.5842 | 4.0 | TM | | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6806 | 0.6400 | 6.0 | TM | | |
| 63 | TM | m&p-Xylene | 0.8740 | 0.9419 | 7.8 | TM | | |
| 64 | TM | o-Xylene | 0.8198 | 0.8556 | 4.4 | TM | | |
| 65 | TM | Styrene | 1.295 | 1.497 | 16 | TM | | |
| 66 | S | 4-Bromofluorobenzene(S) | 0.6754 | 0.7374 | 9.2 | S | | |
| 67 | TM | 1,3-Dichloropropane | 0.8513 | 0.8279 | 2.8 | TM | | |
| 68 | TM | Dibromochloromethane | 0.6362 | 0.5988 | 5.9 | TM | | |
| 69 | TM** | Chlorobenzene | 1.587 | 1.600 | 0.79 | TM** | | |
| 70 | TM* | Ethylbenzene | 2.224 | 2.381 | 7.1 | TM* | | |
| 71 | TM** | Bromoform | 0.4596 | 0.4321 | 6.0 | TM** | | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | | |
| 73 | TM | Isopropylbenzene | 3.171 | 3.083 | 2.8 | TM | | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.126 | 1.079 | 4.2 | TM**L | 8.6 | |
| 75 | TM | 1,2,3-Trichloropropane | 0.3239 | 0.3028 | 6.5 | TM | | |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2001 | 0.2115 | 5.7 | TM | | |
| 77 | TM | Bromobenzene | 1.080 | 1.063 | 1.6 | TM | | |
| 78 | TM | n-Propylbenzene | 3.881 | 4.050 | 4.4 | TM | | |
| 79 | TM | 4-Ethyltoluene | 3.409 | 3.665 | 7.5 | TM | | |
| 80 | TM | 2-Chlorotoluene | 2.490 | 2.623 | 5.4 | TM | | |
| | | Average | | | 7.7 | | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 10/26/2014
Instrument: Loki
Cal. Date: 10/24/2014
Data File: 1026L04.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 2.991 | 3.300 | 10 | TM | |
| 82 | TM | 4-Chlorotoluene | 2.960 | 3.275 | 11 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.397 | 2.417 | 0.83 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 2.895 | 2.988 | 3.2 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.535 | 3.743 | 5.9 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.032 | 3.236 | 6.7 | TM | |
| 87 | TM | Benzyl Chloride | 1.433 | 1.492 | 4.2 | TM | |
| 88 | TM | 1,3-DCB | 2.097 | 2.085 | 0.56 | TM | |
| 89 | TM | 1,4-DCB | 2.265 | 2.226 | 1.7 | TM | |
| 90 | TM | n-Butylbenzene | 2.798 | 2.923 | 4.4 | TM | |
| 91 | TM | 1,2-DCB | 2.057 | 2.026 | 1.5 | TM | |
| 92 | TML | Hexachloroethane | 0.7618 | 0.7085 | 7.0 | TML | 8.5 |
| 93 | TML | 1,2-Dibromo-3-chloropropane | 0.1498 | 0.1288 | 14 | TML | 2.7 |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.394 | 1.202 | 14 | TM | |
| 95 | TM | Hexachlorobutadiene | 0.8427 | 0.8206 | 2.6 | TM | |
| 96 | TM | Naphthalene | 1.536 | 1.341 | 13 | TM | |
| 97 | TM | 1,2,3-Trichlorobenzene | 1.376 | 1.192 | 13 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
| 103 | | | | | | | |
| 104 | | | | | | | |
| 105 | | | | | | | |
| 106 | | | | | | | |
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| 112 | | | | | | | |
| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 6.7 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L04.D Vial: 3
Acq On : 26 Oct 14 12:07 Operator: DG,SV,RS
Sample : 10ug/L Std 10-26-14(CCV) Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 27 14:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 397248 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 332288 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 219840 | 25.00 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 206369 | 23.84 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery = 87.771% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 226191 | 24.67 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery = 89.084% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 684409 | 29.06 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery = 111.131% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 245025 | 27.30 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery = 122.779% | | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 48497 | 9.74 ppb | 96 |
| 3) Freon 114 | 1.10 | 85 | 43862 | 9.72 ppb | 89 |
| 4) Chloromethane | 1.14 | 50 | 70671 | 8.82 ppb | 97 |
| 5) Vinyl chloride | 1.22 | 62 | 80364 | 8.22 ppb | 98 |
| 6) Bromomethane | 1.44 | 94 | 58427 | 11.27 ppb | 97 |
| 7) Chloroethane | 1.53 | 64 | 41160 | 11.00 ppb | 91 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 154479 | 9.68 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 110051 | 9.27 ppb | 96 |
| 10) Acrolein | 2.10 | 56 | 105866 | 118.85 ppb | 95 |
| 11) Acetone | 2.25 | 43 | 20323 | 9.33 ppb | 93 |
| 12) Freon-113 | 2.20 | 101 | 69052 | 10.09 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 102139 | 9.18 ppb | 97 |
| 14) t-Butanol | 2.88 | 59 | 27024 | 110.47 ppb | 99 |
| 15) Acetonitrile | 2.52 | 41 | 110094 | 110.01 ppb | 96 |
| 16) Methyl Acetate | 2.60 | 43 | 61968 | 10.02 ppb | 92 |
| 17) Iodomethane | 2.31 | 142 | 28880 | 11.85 ppb | 100 |
| 18) Acrylonitrile | 2.97 | 52 | 18692 | 8.80 ppb | 85 |
| 19) Methylene chloride | 2.67 | 84 | 83600 | 10.34 ppb | 95 |
| 20) Carbon disulfide | 2.36 | 76 | 186706 | 10.40 ppb | 97 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 159653 | 9.03 ppb | 99 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 71214 | 9.18 ppb | 94 |
| 23) Diisopropyl Ether | 3.71 | 45 | 204590 | 9.86 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 136393 | 9.21 ppb | 97 |
| 25) Hexane | 3.36 | 57 | 60239 | 10.31 ppb # | 96 |
| 26) Vinyl Acetate | 3.71 | 43 | 47072 | 10.28 ppb # | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 167915 | 9.60 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 25943 | 9.39 ppb | 98 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 83309 | 9.87 ppb | 98 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 42096 | 11.81 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 144005 | 9.10 ppb | 98 |
| 32) Bromochloromethane | 4.76 | 128 | 43267 | 9.93 ppb | 100 |
| 34) 1,1,1-TCA | 5.11 | 97 | 117992 | 9.47 ppb | 98 |
| 35) Cyclohexane | 5.16 | 41 | 53833 | 10.32 ppb | 95 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 89043 | 10.20 ppb | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 185647 | 11.57 ppb | 98 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 104846 | 10.45 ppb | 98 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 166772 | 9.62 ppb | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 105940 | 10.43 ppb | 94 |
| 42) Benzene | 5.58 | 78 | 288506 | 10.07 ppb | 97 |
| 43) TCE | 6.38 | 95 | 72427 | 9.17 ppb | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L04.D Vial: 3
Acq On : 26 Oct 14 12:07 Operator: DG,SV,RS
Sample : 10ug/L Std 10-26-14(CCV) Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 27 14:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 44) 2-Pentanone | 6.63 | 43 | 596028 | 117.42 ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 82599 | 9.10 ppb | | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 107842 | 9.30 ppb | | 97 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 88305 | 10.08 ppb | | 97 |
| 48) Dibromomethane | 6.75 | 93 | 51704 | 9.56 ppb | | 90 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 5706 | 7.13 ppb | | 95 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 49362 | 8.18 ppb | | 99 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 63200 | 9.33 ppb | | 97 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 114121 | 9.02 ppb | | 93 |
| 53) Toluene | 7.78 | 91 | 310067 | 10.45 ppb | | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 100396 | 9.05 ppb | | 95 |
| 55) 1,1,2-TCA | 8.21 | 83 | 55665 | 8.68 ppb | | 96 |
| 56) 2-Hexanone | 8.50 | 43 | 32764 | 8.49 ppb | # | 93 |
| 59) 1,2-EDB | 8.69 | 107 | 63910 | 9.35 ppb | | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 97210 | 9.93 ppb | | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 77645 | 10.40 ppb | | 98 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 85065 | 9.40 ppb | | 97 |
| 63) m&p-Xylene | 9.46 | 106 | 250396 | 21.56 ppb | | 94 |
| 64) o-Xylene | 9.85 | 106 | 113727 | 10.44 ppb | | 96 |
| 65) Styrene | 9.86 | 104 | 198982 | 11.56 ppb | | 96 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 110038 | 9.72 ppb | | 93 |
| 68) Dibromochloromethane | 8.60 | 129 | 79596 | 9.41 ppb | | 93 |
| 69) Chlorobenzene | 9.21 | 112 | 212624 | 10.08 ppb | | 96 |
| 70) Ethylbenzene | 9.34 | 91 | 316495 | 10.71 ppb | | 100 |
| 71) Bromoform | 10.02 | 173 | 57436 | 9.40 ppb | | 94 |
| 73) Isopropylbenzene | 10.22 | 105 | 271082 | 9.72 ppb | | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 94918 | 10.86 ppb | | 93 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 26631 | 9.35 ppb | | 96 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 18595 | 10.57 ppb | | 92 |
| 77) Bromobenzene | 10.49 | 156 | 93515 | 9.84 ppb | | 92 |
| 78) n-Propylbenzene | 10.63 | 91 | 356178 | 10.44 ppb | | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 322309 | 10.75 ppb | | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 230693 | 10.54 ppb | | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 290147 | 11.03 ppb | | 99 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 287961 | 11.06 ppb | | 97 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 212567 | 10.08 ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 262784 | 10.32 ppb | | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 329152 | 10.59 ppb | | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 284575 | 10.67 ppb | | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 131244 | 10.42 ppb | | 98 |
| 88) 1,3-DCB | 11.44 | 146 | 183360 | 9.94 ppb | | 96 |
| 89) 1,4-DCB | 11.53 | 146 | 195723 | 9.83 ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 257003 | 10.44 ppb | | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 178186 | 9.85 ppb | | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 62307 | 10.85 ppb | | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 11324 | 9.73 ppb | | 94 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 105700 | 8.62 ppb | | 97 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 72159 | 9.74 ppb | | 95 |
| 96) Naphthalene | 13.72 | 128 | 117896 | 8.73 ppb | | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 104835 | 8.66 ppb | | 96 |

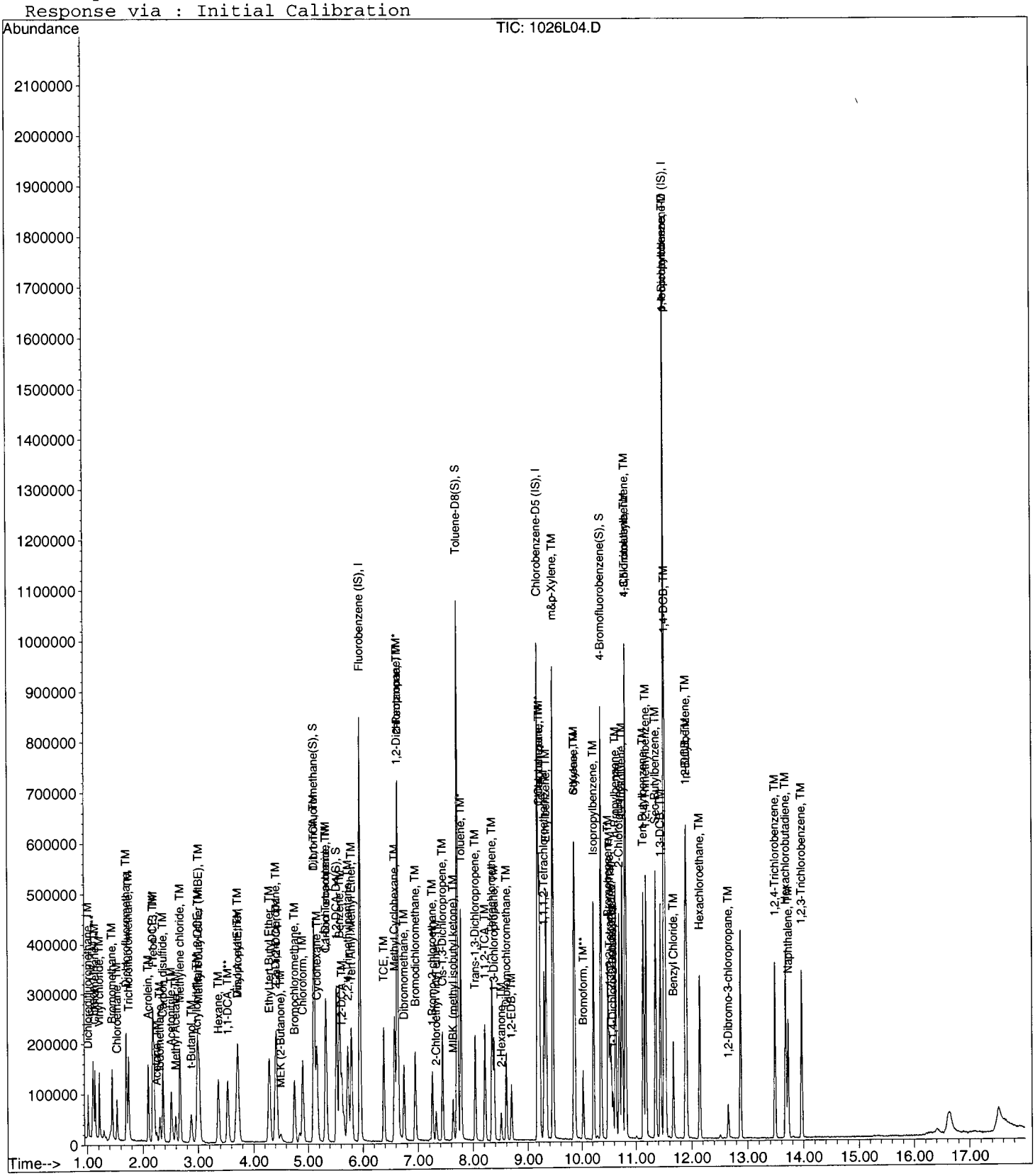
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1026L04.D  Vial: 3
Acq On : 26 Oct 14 12:07  Operator: DG,SV,RS
Sample : 10ug/L Std 10-26-14(CCV)  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 27 14:44 2014  Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 11/10/14
Instrument: Loki

Initials:

| | | Compound | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1110L05.D | 1110L06.D | 1110L07.D | 1110L08.D | 1110L09.D | 1110L10 D | 1110L11 D | 1110L12 D | | | | | | |
| 1 | I | Fluorobenzene (IS) | ISTD | | | | | | | | | | | | | |
| 2 | TM | Dichlorodifluoromethane | 0.4228 | 0.4939 | 0.4658 | 0 3556 | 0.3885 | 0.4031 | 0.4427 | 0.4445 | | | 0.43 | 10 | TM | |
| 3 | TM | Freon 114 | 0.4104 | 0.4458 | 0.4383 | 0 3200 | 0.3670 | 0.3922 | 0.4042 | 0.4264 | | | 0.40 | 10 | TM | |
| 4 | TM**L | Chloromethane | | 1.321 | 1.100 | 0.7985 | 0.7527 | 0.7528 | 0.7685 | 0.7771 | | | 0.90 | 25 | TM**L | 1 000 |
| 5 | TM* | Vinyl chloride | 0.6735 | 0.6488 | 0.6281 | 0.5392 | 0.5512 | 0.5476 | 0.5621 | 0.5800 | | | 0.59 | 8.7 | TM* | |
| 6 | TML | Bromomethane | 0 4309 | 0.3453 | 0.3052 | 0 2485 | 0.2406 | 0.2843 | 0 2595 | 0.2421 | | | 0.29 | 22 | TML | 0.998 |
| 7 | TML | Chloroethane | 0.5814 | 0.5531 | 0.4138 | 0 3188 | 0.3018 | 0.2908 | 0.2585 | 0.2945 | | | 0.38 | 34 | TML | 0.997 |
| 8 | TM | Dichlorofluoromethane | 1.209 | 1.177 | 1.134 | 1.046 | 0.9758 | 0.9623 | 0.9319 | 0.8996 | | | 1.0 | 11 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7692 | 0.8900 | 0.8260 | 0.7000 | 0.6947 | 0.6664 | 0.6723 | 0.6675 | | | 0.74 | 11 | TM | |
| 10 | TML | Acrolein | 0.0436 | 0.0354 | 0.0320 | 0.0296 | 0.0279 | 0.0272 | 0.0262 | 0.0248 | | | 0.03 | 20 | TML | 0.993 |
| 11 | TML | Acetone | 1.046 | 0.8201 | 0.5266 | 0.1809 | 0.1515 | 0.1288 | 0.1166 | 0.1113 | | | 0.39 | 96 | TML | 1.000 |
| 12 | TM | Freon-113 | 0.4672 | 0.5087 | 0.4957 | 0.3969 | 0.4067 | 0.4061 | 0.3906 | 0.3791 | | | 0.43 | 12 | TM | |
| 13 | TM* | 1,1-DCE | 0.8832 | 0.7855 | 0.7605 | 0.6853 | 0.6739 | 0.6536 | 0.6507 | 0.6414 | | | 0.72 | 12 | TM* | |
| 14 | TML | t-Butanol | 0.0202 | 0.0153 | 0.0159 | 0.0125 | 0.0122 | 0.0115 | 0.0113 | | | | 0.01 | 23 | TML | 0.992 |
| 15 | TML | Acetonitrile | 0.0833 | 0.0692 | 0.0641 | 0.0531 | 0.0539 | 0.0513 | 0.0516 | 0.0518 | | | 0.06 | 19 | TML | 0.998 |
| 16 | TML | Methyl Acetate | 0.5494 | 0.4920 | 0.4119 | 0.3454 | 0.3316 | 0.3143 | 0.3159 | 0.3179 | | | 0.38 | 24 | TML | 1.00 |
| 17 | TML | Iodomethane | 0 1298 | 0.1033 | 0.1012 | 0.0734 | 0.0732 | 0.0872 | 0.0931 | 0.1114 | | | 0.10 | 20 | TML | 0.995 |
| 18 | TML | Acrylonitrile | 0 2093 | 0.1327 | 0.1403 | 0.1385 | 0.1204 | 0.1155 | 0.1179 | 0.1157 | | | 0.14 | 23 | TML | 1.000 |
| 19 | TML | Methylene chloride | | 0.8799 | 0.7129 | 0.5786 | 0.5168 | 0.5180 | 0.5011 | 0.4823 | | | 0.60 | 24 | TML | 1.000 |
| 20 | TM | Carbon disulfide | 1.840 | 1.751 | 1.629 | 1.402 | 1.356 | 1.351 | 1.344 | 1.310 | | | 1.5 | 14 | TM | |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1 308 | 1.234 | 1.093 | 1.114 | 1.054 | 1.099 | 1.141 | 1.159 | | | 1.2 | 7.2 | TM | |
| 22 | TM | Trans-1,2-DCE | | 0.7626 | 0.7073 | 0 6287 | 0.6169 | 0.6325 | 0.6381 | 0.6341 | | | 0.66 | 8 2 | TM | |
| 23 | TM | Diisopropyl Ether | 1 430 | 1.408 | 1.332 | 1.307 | 1.333 | 1 442 | 1.546 | 1.563 | | | 1.4 | 6.8 | TM | |
| 24 | TM** | 1,1-DCA | 1.075 | 1.045 | 0.9943 | 0 9134 | 0.8476 | 0.8351 | 0.8105 | 0.7477 | | | 0.91 | 13 | TM** | |
| 25 | TM | Hexane | 0.3849 | 0.4295 | 0.4171 | 0.3348 | 0.3826 | 0.4267 | 0.4725 | 0.5115 | | | 0.42 | 13 | TM | |
| 26 | TM | Vinyl Acetate | 0.3674 | 0.3535 | 0.3448 | 0.2971 | 0.2826 | 0.2904 | 0.2921 | 0.2836 | | | 0.31 | 11 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.345 | 1.178 | 1.091 | 1.098 | 1.098 | 1.173 | 1.254 | 1.315 | | | 1.2 | 8.4 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.3123 | 0.2865 | 0.2241 | 0.1759 | 0.1586 | 0.1562 | 0.1642 | 0 1567 | | | 0.20 | 31 | TML | 1.000 |
| 29 | TM | Cis-1,2-DCE | 0.6398 | 0.5456 | 0.5295 | 0.5198 | 0.4979 | 0.5086 | 0.5249 | 0.5159 | | | 0.54 | 8.3 | TM | |
| 30 | TM | 2,2-Dichloropropane | 0.2981 | 0.2855 | 0.2539 | 0 2355 | 0.2288 | 0.2229 | 0.2232 | 0.2199 | | | 0.25 | 12 | TM | |
| 31 | TM* | Chloroform | 1.065 | 0.9936 | 0.9426 | 0.9392 | 0 8762 | 0.8527 | 0.8345 | 0.7972 | | | 0.91 | 9.8 | TM* | |
| 32 | TM | Bromochloromethane | 0.3380 | 0.2958 | 0.3045 | 0.2838 | 0.2601 | 0.2508 | 0.2372 | 0.2228 | | | 0.27 | 14 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.6542 | 0.6393 | 0.6267 | 0.5671 | 0.5218 | 0.5238 | 0.5177 | 0.5046 | | | 0.57 | 11 | S | |
| 34 | TM | 1,1,1-TCA | 0.9231 | 0.8369 | 0.8029 | 0.7666 | 0.7110 | 0.7195 | 0.7052 | 0.6913 | | | 0.77 | 10 | TM | |
| 35 | TM | Cyclohexane | 0.3568 | 0.3605 | 0.3565 | 0.3026 | 0.3315 | 0.3528 | 0.3767 | 0.3874 | | | 0.35 | 7.4 | TM | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 11/10/14
Instrument: Loki

Initials:

| | | Compound | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | TM | 1,1-Dichloropropene | 0 6850 | 0.5440 | 0.5555 | 0.5191 | 0.5471 | 0 5782 | 0.5971 | 0.6110 | | | 0.58 | 9.0 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 0.9164 | 0.9801 | 0.9911 | 0.9276 | 1.022 | 1.136 | 1.242 | 1.289 | | | 1.1 | 13 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.7759 | 0.7515 | 0.6757 | 0.6408 | 0.5762 | 0.5696 | 0.5656 | 0 5497 | | | 0.64 | 14 | S | |
| 39 | TM | Carbon Tetrachloride | 0.8810 | 0.7476 | 0.7556 | 0.6740 | 0.6517 | 0.6569 | 0.6338 | 0.6309 | | | 0.70 | 12 | TM | |
| 40 | TM | Tert Amyl Methyl Ether | 0.9667 | 1.086 | 0.9100 | 1.046 | 1.074 | 1.128 | 1 177 | 1.185 | | | 1.1 | 9.0 | TM | |
| 41 | TM | 1,2-DCA | 0.8184 | 0.7369 | 0.6835 | 0 6779 | 0.6542 | 0.6340 | 0.6239 | 0.5905 | | | 0.68 | 11 | TM | |
| 42 | TM | Benzene | 2 056 | 1.889 | 1 839 | 1.859 | 1.831 | 1.851 | 1.857 | 1.805 | | | 1.9 | 4.1 | TM | |
| 43 | TM | TCE | 0.5181 | 0 5345 | 0.4959 | 0.5002 | 0.4668 | 0.4662 | 0.4651 | 0.4656 | | | 0.49 | 5 6 | TM | |
| 44 | TM | 2-Pentanone | 0.3607 | 0.3013 | 0.2835 | 0.2783 | 0.2908 | 0.2943 | 0.3011 | 0.2976 | | | 0.30 | 8.5 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0 6175 | 0.5355 | 0.6051 | 0.5541 | 0.5250 | 0.5224 | 0.5218 | 0.5047 | | | 0 55 | 7.6 | TM* | |
| 46 | TM | Bromodichloromethane | 0.8714 | 0.7433 | 0.7270 | 0.7098 | 0.6721 | 0.6571 | 0.6511 | 0.6314 | | | 0.71 | 11 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5388 | 0.5155 | 0.5410 | 0.4761 | 0.5325 | 0.5828 | 0.6470 | 0.6983 | | | 0.57 | 13 | TM | |
| 48 | TM | Dibromomethane | 0.4106 | 0.3565 | 0.3520 | 0.3243 | 0.3090 | 0.2942 | 0.2870 | 0.2686 | | | 0.33 | 14 | TM | |
| 49 | TML | 2-Chloroethyl vinyl ether | | | | | | | | | | | | | TML | |
| 50 | TM | MIBK (methyl isobutyl ketone | 0.3988 | 0.4691 | 0.4390 | 0.3480 | 0.3389 | 0.3163 | 0.3278 | 0.3572 | | | 0.37 | 15 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4904 | 0.4490 | 0.4165 | 0.4263 | 0.3846 | 0.3798 | 0.3783 | 0.3830 | | | 0.41 | 9.8 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.9434 | 0.8059 | 0.6926 | 0.7178 | 0.6757 | 0.7131 | 0.7454 | 0.7861 | | | 0.76 | 11 | TM | |
| 53 | TM* | Toluene | 1.898 | 1.721 | 1.691 | 1.885 | 1.908 | 1.966 | 2.002 | 1.968 | | | 1.9 | 6.1 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.8128 | 0.6410 | 0 6022 | 0.6438 | 0.6187 | 0.6229 | 0.6392 | 0.6608 | | | 0.66 | 10 | TM | |
| 55 | TM | 1,1,2-TCA | 0.3830 | 0.3851 | 0.3926 | 0.3783 | 0.3588 | 0.3522 | 0.3452 | 0.3333 | | | 0.37 | 5.9 | TM | |
| 56 | TML | 2-Hexanone | 0.3294 | 0.2433 | 0.2220 | 0.2167 | 0.2043 | 0.2021 | 0.2158 | 0.2372 | | | 0.23 | 18 | TML | 0.998 |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | | | | | | | | | | | |
| 58 | S | Toluene-D8(S) | 2.006 | 2.047 | 1.803 | 1.907 | 1.915 | 2.044 | 2.063 | 2.074 | | | 2.0 | 4.9 | S | |
| 59 | TM | 1,2-EDB | 0.5796 | 0.5265 | 0.5062 | 0.4931 | 0.4885 | 0.4774 | 0 4538 | 0.4462 | | | 0.50 | 8.6 | TM | |
| 60 | TM | Tetrachloroethene | 0.7231 | 0.6862 | 0.6282 | 0.6768 | 0.6374 | 0 6005 | 0.5922 | 0.5849 | | | 0.64 | 7.8 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5897 | 0.4985 | 0.5309 | 0.5248 | 0.5744 | 0.6167 | 0.6704 | 0.6989 | | | 0.59 | 12 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6991 | 0.7675 | 0.6411 | 0.6790 | 0.6183 | 0.6080 | 0.5807 | 0.5801 | | | 0.65 | 10 | TM | |
| 63 | TM | m&p-Xylene | 0.7985 | 0.7652 | 0.7265 | 0.8429 | 0.9013 | 0.9625 | 0.9760 | 0.9761 | | | 0.87 | 11 | TM | |
| 64 | TM | o-Xylene | 0.7186 | 0.7555 | 0.6476 | 0.8020 | 0.7947 | 0.8690 | 0.9128 | 0 9506 | | | 0.81 | 13 | TM | |
| 65 | TML | Styrene | 1.165 | 1.105 | 1.071 | 1.327 | 1.396 | 1.564 | 1.625 | | | | 1.3 | 17 | TML | 0.999 |
| 66 | S | 4-Bromofluorobenzene(S) | 0.7651 | 0.6944 | 0.6458 | 0.7001 | 0.7174 | 0.7557 | 0.7615 | 0.8108 | | | 0.73 | 7.1 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8813 | 0.8344 | 0.7814 | 0.8572 | 0 8139 | 0.8115 | 0.7933 | 0.7812 | | | 0.82 | 4.4 | TM | |
| 68 | TM | Dibromochloromethane | 0.7113 | 0.6426 | 0.5867 | 0.6513 | 0.6150 | 0 5844 | 0.5632 | 0.5637 | | | 0.61 | 8.3 | TM | |
| 69 | TM** | Chlorobenzene | 1.649 | 1.725 | 1 592 | 1.610 | 1.540 | 1.511 | 1.506 | 1.495 | | | 1.6 | 5.1 | TM** | |
| 70 | TM* | Ethylbenzene | 2.087 | 2.126 | 1.912 | 2.179 | 2.250 | 2.449 | 2.523 | 2.521 | | | 2.3 | 9.9 | TM* | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 11/10/14
Instrument: Loki

Initials:

| | | Compound | 0.3 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | TM** | Bromoform | | | 0.4491 | 0.4472 | 0.4258 | 0.4090 | 0 3865 | 0.4096 | | | 0.42 | 5.8 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | | | | | | | | | | | |
| 73 | TM | Isopropylbenzene | 3.681 | 3.494 | 3.245 | 3.181 | 3.257 | 3.487 | 3.820 | 3.710 | | | 3.5 | 6.9 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | | 1 462 | 1.384 | 1.138 | 1.032 | 0.9796 | 0 9452 | 0.8993 | | | 1.1 | 20 | TM**L | 1.000 |
| 75 | TML | 1,2,3-Trichloropropane | 0.5159 | 0.4059 | 0.3912 | 0.3292 | 0.3106 | 0.3016 | 0.2824 | 0.2668 | | | 0.35 | 24 | TML | 0.999 |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2033 | 0.3178 | 0.2687 | 0.2286 | 0.2504 | 0.2498 | 0.2324 | 0.2349 | | | 0.25 | 14 | TM | |
| 77 | TM | Bromobenzene | 1.425 | 1.391 | 1.185 | 1.170 | 1.133 | 1.132 | 1.137 | 1.087 | | | 1.2 | 11 | TM | |
| 78 | TML | n-Propylbenzene | 2.365 | 4 051 | 3.706 | 3.954 | 4.130 | 4 532 | 4 795 | 4.573 | | | 4.0 | 19 | TML | 0.999 |
| 79 | TM | 4-Ethyltoluene | 3.296 | 3.328 | 2.905 | 3.332 | 3.518 | 3 872 | 4.053 | 3.859 | | | 3.5 | 11 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.917 | 2.833 | 2.444 | 2.692 | 2.731 | 2 858 | 2.915 | 2.745 | | | 2.8 | 5.6 | TM | |
| 81 | TM | 1,3,5-Trimethylbenzene | | 2.795 | 2.636 | 3.116 | 3.296 | 3.486 | 3.573 | 3.381 | | | 3.2 | 11 | TM | |
| 82 | TM | 4-Chlorotoluene | 0.7030 | 0.8611 | 0.6362 | 0.6902 | 0.7228 | 0.7449 | 0.7249 | 0.7208 | | | 0.73 | 8.8 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.524 | 2.546 | 2.342 | 2.400 | 2.378 | 2.586 | 2.814 | 2.810 | | | 2.5 | 7.2 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 3.156 | 2.958 | 2.434 | 2.879 | 3.020 | 3 344 | 3.493 | 3.451 | | | 3.1 | 11 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.641 | 3.103 | 3.305 | 3.545 | 3.650 | 3.978 | 4.164 | 4.173 | | | 3.7 | 11 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.000 | 2.877 | 2.728 | 2.959 | 3.088 | 3.349 | 3.536 | 3.593 | | | 3.1 | 10 | TM | |
| 87 | TML | Benzyl Chloride | 1 891 | 1.692 | 1.477 | 1.330 | 1.253 | 1.223 | 1.240 | 1.253 | | | 1.4 | 18 | TML | 1.000 |
| 88 | TM | 1,3-DCB | 2.496 | 2.278 | 2.116 | 2.277 | 2.132 | 2.150 | 2.108 | 2.072 | | | 2.2 | 6.4 | TM | |
| 89 | TM | 1,4-DCB | 2.823 | 3.003 | 2.467 | 2.404 | 2.220 | 2 198 | 2.168 | 2.100 | | | 2.4 | 14 | TM | |
| 90 | TM | n-Butylbenzene | 3.260 | 2.934 | 2.781 | 2.833 | 2.860 | 3.145 | 3.408 | 3.501 | | | 3.1 | 9.0 | TM | |
| 91 | TM | 1,2-DCB | 2.498 | 2.411 | 2.157 | 2.058 | 1.980 | 1.978 | 1 985 | 1.987 | | | 2.1 | 9.8 | TM | |
| 92 | TM | Hexachloroethane | | 0.9988 | 0.9590 | 0.7954 | 0.7504 | 0.7307 | 0.7272 | | | | 0.83 | 15 | TM | |
| 93 | TM | 1,2-Dibromo-3-chloropropane | 0.2058 | 0.2541 | 0.1707 | 0.2103 | 0.1893 | 0.1843 | 0.1984 | 0.1869 | | | 0.20 | 13 | TM | |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.232 | 1.157 | 1.153 | 1.211 | 1.203 | 1.240 | 1.490 | 1.516 | | | 1.3 | 11 | TM | |
| 95 | TML | Hexachlorobutadiene | 1.225 | 1.257 | 1.009 | 0.8454 | 0.7970 | 0.7932 | 0.8246 | 0.8090 | | | 0.95 | 21 | TML | 1.000 |
| 96 | TML | Naphthalene | 0.9712 | 1.010 | 0.9616 | 1.147 | 1.232 | 1.414 | | | | | 1.1 | 16 | TML | 0.995 |
| 97 | TM | 1,2,3-Trichlorobenzene | 0.7654 | 0.7515 | 0 6356 | 0.7658 | 0.7714 | 0.8390 | 0.9919 | 0.9389 | | | 0.81 | 14 | TM | |
| 98 | | | | | | | | | | | | | | | | |
| 99 | | | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | | | | | |
| 103 | | | | | | | | | | | | | | | | |
| 104 | | | | | | | | | | | | | | | | |
| 105 | | | | | | | | | | | | | | | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L05.D
Acq On : 10 Nov 14 18:04
Sample : 0.3ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 534784 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 477888 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 236480 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 8396 | 0.68933 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 2.869% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 9958 | 0.72951 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 2.922% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 23009 | 0.60718 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 2.438% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 8775 | 0.62767 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 2.742% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 2713 | 0.29695 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 2634 | 0.30742 ppb | | 92 |
| 4) Chloromethane | 1.14 | 50 | 10354 | 0.62744 ppb | | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 4322 | 0.34169 ppb | | 84 |
| 6) Bromomethane | 1.45 | 94 | 2765 | -0.28216 ppb | | 93 |
| 7) Chloroethane | 1.54 | 64 | 3731 | 0.69294 ppb | # | 73 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 7756 | 0.34798 ppb | | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 4936 | 0.31361 ppb | | 92 |
| 10) Acrolein | 2.10 | 56 | 9333 | 3.86866 ppb | # | 89 |
| 11) Acetone | 2.25 | 43 | 6712 | -0.58811 ppb | | 93 |
| 12) Freon-113 | 2.20 | 101 | 2998 | 0.32490 ppb | | 88 |
| 13) 1,1-DCE | 2.18 | 61 | 5668 | 0.36968 ppb | | 93 |
| 14) t-Butanol | 2.88 | 59 | 4312 | 4.00552 ppb | | 95 |
| 15) Acetonitrile | 2.52 | 41 | 17820 | 6.71841 ppb | # | 79 |
| 16) Methyl Acetate | 2.60 | 43 | 3526 | 0.28295 ppb | | 91 |
| 17) Iodomethane | 2.31 | 142 | 833 | 2.28224 ppb | # | 79 |
| 18) Acrylonitrile | 2.97 | 52 | 1343 | 0.15625 ppb | # | 57 |
| 19) Methylene chloride | 2.67 | 84 | 8489 | -0.10707 ppb | | 97 |
| 20) Carbon disulfide | 2.37 | 76 | 11809 | 0.36856 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 8395 | 0.34120 ppb | # | 92 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 5008 | 0.35471 ppb | | 85 |
| 23) Diisopropyl Ether | 3.71 | 45 | 9180 | 0.30220 ppb | # | 95 |
| 24) 1,1-DCA | 3.53 | 63 | 6899 | 0.35496 ppb | | 96 |
| 25) Hexane | 3.36 | 57 | 2470 | 0.27495 ppb | # | 82 |
| 26) Vinyl Acetate | 3.70 | 43 | 2358 | 0.35112 ppb | # | 90 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 8631 | 0.33784 ppb | # | 81 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 2004 | 0.12563 ppb | # | 46 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 4106 | 0.35860 ppb | | 80 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 1913 | 0.36356 ppb | | 93 |
| 31) Chloroform | 4.90 | 83 | 6832 | 0.34998 ppb | | 83 |
| 32) Bromochloromethane | 4.75 | 128 | 2169 | 0.36988 ppb | | 94 |
| 34) 1,1,1-TCA | 5.10 | 97 | 5924 | 0.35986 ppb | | 97 |
| 35) Cyclohexane | 5.16 | 41 | 2290 | 0.30317 ppb | # | 66 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 4396 | 0.35454 ppb | # | 82 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 5881 | 0.25862 ppb | # | 61 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 5654 | 0.37548 ppb | | 92 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 6204 | 0.27068 ppb | # | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 5252 | 0.36244 ppb | | 99 |
| 42) Benzene | 5.58 | 78 | 13194 | 0.32924 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L05.D
Acq On : 10 Nov 14 18:04
Sample : 0.3ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 3325 | 0.31784 ppb | | 90 |
| 44) 2-Pentanone | 6.64 | 43 | 77151 | 11.98514 ppb | | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 3963 | 0.33791 ppb | # | 85 |
| 46) Bromodichloromethane | 6.95 | 83 | 5592 | 0.36928 ppb | # | 88 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 3458 | 0.28535 ppb | | 90 |
| 48) Dibromomethane | 6.75 | 93 | 2635 | 0.37872 ppb | # | 72 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 77 | 0.30266 ppb | # | 21 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 2559 | 0.31953 ppb | # | 84 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 3147 | 0.35579 ppb | | 96 |
| 52) Cis-1,3-Dichloropropene | 7.45 | 75 | 6054 | 0.37238 ppb | | 92 |
| 53) Toluene | 7.78 | 91 | 12178 | 0.30287 ppb | | 88 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 5216 | 0.37217 ppb | | 98 |
| 55) 1,1,2-TCA | 8.21 | 83 | 2458 | 0.31389 ppb | | 94 |
| 56) 2-Hexanone | 8.51 | 43 | 2114 | 1.36716 ppb | # | 82 |
| 59) 1,2-EDB | 8.69 | 107 | 3324 | 0.35029 ppb | # | 80 |
| 60) Tetrachloroethene | 8.34 | 166 | 4147 | 0.33836 ppb | | 96 |
| 61) 1-Chlorohexane | 9.22 | 91 | 3382 | 0.30087 ppb | | 87 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 4009 | 0.32428 ppb | | 87 |
| 63) m&p-Xylene | 9.45 | 106 | 9158 | 0.55155 ppb | | 89 |
| 64) o-Xylene | 9.85 | 106 | 4121 | 0.26735 ppb | | 79 |
| 65) Styrene | 9.87 | 104 | 6683 | 0.78542 ppb | # | 88 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 5054 | 0.32272 ppb | | 86 |
| 68) Dibromochloromethane | 8.60 | 129 | 4079 | 0.34709 ppb | | 88 |
| 69) Chlorobenzene | 9.20 | 112 | 9454 | 0.31336 ppb | | 89 |
| 70) Ethylbenzene | 9.34 | 91 | 11969 | 0.27756 ppb | | 96 |
| 71) Bromoform | 10.03 | 173 | 2963 | 0.36800 ppb | | 95 |
| 73) Isopropylbenzene | 10.22 | 105 | 10447 | 0.31696 ppb | # | 87 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 4610 | -0.69251 ppb | | 93 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 1464 | -0.58532 ppb | | 88 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 577 | 0.24574 ppb | | 78 |
| 77) Bromobenzene | 10.50 | 156 | 4044 | 0.35406 ppb | | 85 |
| 78) n-Propylbenzene | 10.81 | 91 | 6712 | 0.36680 ppb | | 90 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 9354 | 0.28091 ppb | | 90 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 8277 | 0.31627 ppb | | 91 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 7503 | 0.24917 ppb | | 95 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 1995 | 0.29071 ppb | | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 7163 | 0.29698 ppb | | 87 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 8957 | 0.30626 ppb | | 85 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 10331 | 0.29559 ppb | | 87 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 8513 | 0.28650 ppb | # | 91 |
| 87) Benzyl Chloride | 11.67 | 91 | 5366 | 0.40018 ppb | # | 89 |
| 88) 1,3-DCB | 11.44 | 146 | 7083 | 0.33981 ppb | | 93 |
| 89) 1,4-DCB | 11.52 | 146 | 8011 | 0.34953 ppb | | 95 |
| 90) n-Butylbenzene | 11.91 | 91 | 9252 | 0.31650 ppb | | 95 |
| 91) 1,2-DCB | 11.89 | 146 | 7090 | 0.35159 ppb | | 82 |
| 92) Hexachloroethane | 12.14 | 117 | 3022 | 0.38635 ppb | | 87 |
| 93) 1,2-Dibromo-3-chloropropan | 12.65 | 157 | 584 | 0.30872 ppb | # | 67 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 3496 | 0.28982 ppb | # | 80 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 3476 | 0.30696 ppb | | 91 |
| 96) Naphthalene | 13.72 | 128 | 2756 | 0.65335 ppb | | 98 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 2172 | 0.28438 ppb | # | 84 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

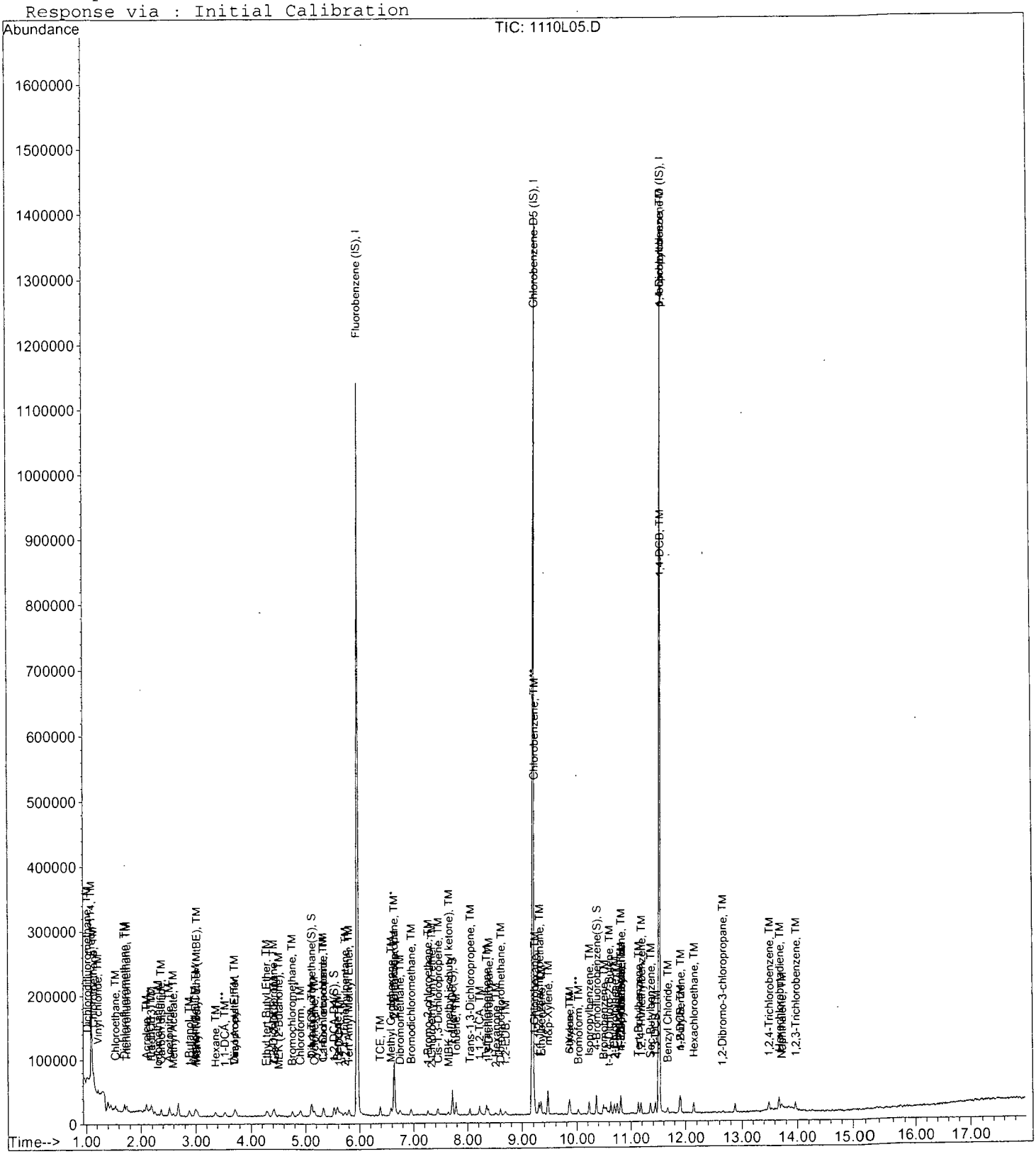
Data File : M:\LOKI\DATA\141110\1110L05.D
Acq On : 10 Nov 14 18:04
Sample : 0.3ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L06.D
Acq On : 10 Nov 14 18:32
Sample : 0.5ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 542848 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 465920 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 228480 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 13882 | 1.12281 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 4.677% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 16318 | 1.17767 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 4.715% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 38158 | 1.03281 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 4.149% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 12942 | 0.94952 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 4.148% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 5362 | 0.57818 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 4840 | 0.55650 ppb | | 80 |
| 4) Chloromethane | 1.14 | 50 | 14346 | 0.85536 ppb | | 84 |
| 5) Vinyl chloride | 1.22 | 62 | 7044 | 0.54861 ppb | | 99 |
| 6) Bromomethane | 1.45 | 94 | 3749 | -0.10353 ppb | | 87 |
| 7) Chloroethane | 1.53 | 64 | 6005 | 1.04497 ppb | # | 71 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 12776 | 0.56470 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 9663 | 0.60482 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 19230 | 22.42263 ppb | # | 100 |
| 11) Acetone | 2.25 | 43 | 8904 | 0.30697 ppb | | 89 |
| 12) Freon-113 | 2.20 | 101 | 5523 | 0.58965 ppb | | 89 |
| 13) 1,1-DCE | 2.18 | 61 | 8528 | 0.54795 ppb | | 90 |
| 14) t-Butanol | 2.88 | 59 | 8287 | 20.94324 ppb | | 96 |
| 15) Acetonitrile | 2.52 | 41 | 37586 | 25.06018 ppb | # | 67 |
| 16) Methyl Acetate | 2.60 | 43 | 5342 | 0.53936 ppb | | 98 |
| 17) Iodomethane | 2.31 | 142 | 1122 | 2.39699 ppb | # | 81 |
| 18) Acrylonitrile | 2.97 | 52 | 1441 | 0.18728 ppb | | 83 |
| 20) Carbon disulfide | 2.36 | 76 | 19010 | 0.58449 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 13399 | 0.53649 ppb | | 95 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 8280 | 0.57774 ppb | | 93 |
| 23) Diisopropyl Ether | 3.72 | 45 | 15288 | 0.49580 ppb | | 96 |
| 24) 1,1-DCA | 3.53 | 63 | 11347 | 0.57514 ppb | # | 89 |
| 25) Hexane | 3.36 | 57 | 4663 | 0.51135 ppb | | 91 |
| 26) Vinyl Acetate | 3.68 | 43 | 3838 | 0.56302 ppb | # | 84 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 12794 | 0.49336 ppb | | 90 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 3110 | 0.44188 ppb | # | 65 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 5924 | 0.50969 ppb | # | 72 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 3100 | 0.58040 ppb | | 98 |
| 31) Chloroform | 4.90 | 83 | 10788 | 0.54442 ppb | | 93 |
| 32) Bromochloromethane | 4.76 | 128 | 3211 | 0.53944 ppb | | 79 |
| 34) 1,1,1-TCA | 5.10 | 97 | 9086 | 0.54373 ppb | | 82 |
| 35) Cyclohexane | 5.16 | 41 | 3914 | 0.51047 ppb | | 88 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 5906 | 0.46925 ppb | # | 79 |
| 37) 2,2,4-Trimethylpentane | 5.72 | 57 | 10641 | 0.46100 ppb | # | 62 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 8117 | 0.53103 ppb | | 95 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 11788 | 0.50667 ppb | # | 89 |
| 41) 1,2-DCA | 5.62 | 62 | 8000 | 0.54387 ppb | # | 89 |
| 42) Benzene | 5.58 | 78 | 20514 | 0.50429 ppb | # | 89 |
| 43) TCE | 6.38 | 95 | 5803 | 0.54648 ppb | | 89 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L06.D
Acq On : 10 Nov 14 18:32
Sample : 0.5ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 44) 2-Pentanone | 6.64 | 43 | 163560 | 25.03104 | ppb | | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 5814 | 0.48837 | ppb | # | 85 |
| 46) Bromodichloromethane | 6.95 | 83 | 8070 | 0.52500 | ppb | | 91 |
| 47) Methyl Cyclohexane | 6.59 | 83 | 5597 | 0.45500 | ppb | | 98 |
| 48) Dibromomethane | 6.75 | 93 | 3870 | 0.54796 | ppb | | 81 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 168 | 0.65054 | ppb | # | 1 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 5093 | 0.62649 | ppb | | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 4875 | 0.54296 | ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 8750 | 0.53022 | ppb | | 89 |
| 53) Toluene | 7.78 | 91 | 18683 | 0.45775 | ppb | | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 6959 | 0.48916 | ppb | | 92 |
| 55) 1,1,2-TCA | 8.21 | 83 | 4181 | 0.52599 | ppb | | 94 |
| 56) 2-Hexanone | 8.50 | 43 | 2641 | 1.46371 | ppb | # | 87 |
| 59) 1,2-EDB | 8.69 | 107 | 4906 | 0.53028 | ppb | | 100 |
| 60) Tetrachloroethene | 8.34 | 166 | 6394 | 0.53509 | ppb | | 90 |
| 61) 1-Chlorohexane | 9.22 | 91 | 4645 | 0.42384 | ppb | | 96 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 7152 | 0.59337 | ppb | | 94 |
| 63) m&p-Xylene | 9.46 | 106 | 14261 | 0.88094 | ppb | | 85 |
| 64) o-Xylene | 9.85 | 106 | 7040 | 0.46846 | ppb | | 91 |
| 65) Styrene | 9.86 | 104 | 10296 | 0.90969 | ppb | # | 80 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 7775 | 0.50921 | ppb | | 93 |
| 68) Dibromochloromethane | 8.60 | 129 | 5988 | 0.52262 | ppb | | 81 |
| 69) Chlorobenzene | 9.21 | 112 | 16075 | 0.54650 | ppb | | 97 |
| 70) Ethylbenzene | 9.34 | 91 | 19808 | 0.47114 | ppb | | 97 |
| 71) Bromoform | 10.02 | 173 | 4699 | 0.59860 | ppb | | 88 |
| 73) Isopropylbenzene | 10.22 | 105 | 15966 | 0.50137 | ppb | | 91 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 6679 | -0.42007 | ppb | | 90 |
| 75) 1,2,3-Trichloropropane | 10.56 | 110 | 1855 | -0.40408 | ppb | | 95 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 1452 | 0.64004 | ppb | | 92 |
| 77) Bromobenzene | 10.49 | 156 | 6355 | 0.57587 | ppb | | 83 |
| 78) n-Propylbenzene | 10.63 | 91 | 18513 | 0.65225 | ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 15208 | 0.47271 | ppb | | 96 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 12944 | 0.51192 | ppb | | 93 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 12773 | 0.43904 | ppb | | 98 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 3935 | 0.59348 | ppb | # | 54 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 11634 | 0.49923 | ppb | # | 86 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 13518 | 0.47840 | ppb | | 96 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 14179 | 0.41989 | ppb | | 91 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 13147 | 0.45795 | ppb | # | 89 |
| 87) Benzyl Chloride | 11.67 | 91 | 7733 | 0.62342 | ppb | | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 10409 | 0.51685 | ppb | | 90 |
| 89) 1,4-DCB | 11.52 | 146 | 13724 | 0.61976 | ppb | | 94 |
| 90) n-Butylbenzene | 11.91 | 91 | 13409 | 0.47477 | ppb | | 95 |
| 91) 1,2-DCB | 11.89 | 146 | 11019 | 0.56557 | ppb | | 99 |
| 92) Hexachloroethane | 12.14 | 117 | 4564 | 0.60392 | ppb | | 91 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 1161 | 0.63523 | ppb | # | 56 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 5285 | 0.45347 | ppb | | 90 |
| 95) Hexachlorobutadiene | 13.67 | 225 | 5743 | 0.62956 | ppb | | 89 |
| 96) Naphthalene | 13.72 | 128 | 4615 | 0.80492 | ppb | | 95 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 3434 | 0.46536 | ppb | | 88 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

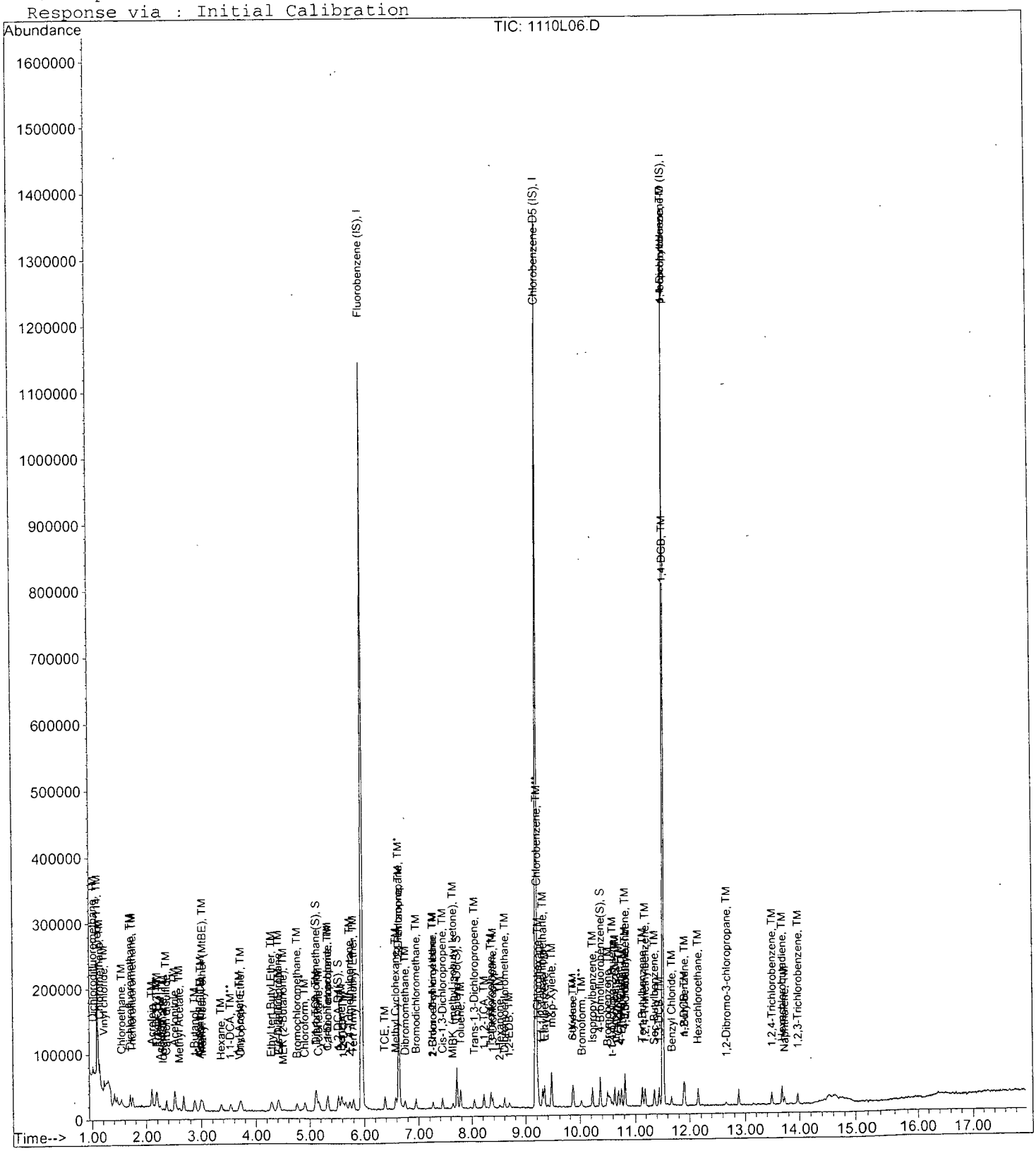
Data File : M:\LOKI\DATA\141110\1110L06.D
Acq On : 10 Nov 14 18:32
Sample : 0.5ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L07.D
Acq On : 10 Nov 14 19:01
Sample : 1.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 557888 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 495104 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 251392 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 27971 | 2.20138 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 9.166% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 30156 | 2.11769 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 8.477% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 71423 | 1.81923 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 7.306% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 25580 | 1.76611 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 7.710% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 10394 | 1.09057 ppb | | 97 |
| 3) Freon 114 | 1.10 | 85 | 9781 | 1.09429 ppb | | 95 |
| 4) Chloromethane | 1.14 | 50 | 24536 | 1.42153 ppb | | 95 |
| 5) Vinyl chloride | 1.22 | 62 | 14017 | 1.06227 ppb | | 94 |
| 6) Bromomethane | 1.45 | 94 | 6811 | 0.44211 ppb | | 89 |
| 7) Chloroethane | 1.53 | 64 | 9234 | 1.51801 ppb | | 89 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 25316 | 1.08879 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 18433 | 1.12265 ppb | | 96 |
| 10) Acrolein | 2.10 | 56 | 35655 | 51.83086 ppb | # | 89 |
| 11) Acetone | 2.25 | 43 | 11752 | 1.39057 ppb | | 84 |
| 12) Freon-113 | 2.20 | 101 | 11061 | 1.14907 ppb | | 87 |
| 13) 1,1-DCE | 2.18 | 61 | 16970 | 1.06097 ppb | | 99 |
| 14) t-Butanol | 2.88 | 59 | 17752 | 59.87174 ppb | | 96 |
| 15) Acetonitrile | 2.52 | 41 | 71545 | 55.19211 ppb | # | 88 |
| 16) Methyl Acetate | 2.60 | 43 | 9192 | 1.06333 ppb | | 93 |
| 17) Iodomethane | 2.31 | 142 | 2259 | 2.84367 ppb | | 98 |
| 18) Acrylonitrile | 2.98 | 52 | 3131 | 0.82807 ppb | | 84 |
| 19) Methylene chloride | 2.67 | 84 | 15908 | 0.55141 ppb | | 89 |
| 20) Carbon disulfide | 2.37 | 76 | 36346 | 1.08739 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 24384 | 0.95000 ppb | | 90 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 15783 | 1.07158 ppb | | 96 |
| 23) Diisopropyl Ether | 3.72 | 45 | 29715 | 0.93770 ppb | # | 84 |
| 24) 1,1-DCA | 3.53 | 63 | 22189 | 1.09436 ppb | | 95 |
| 25) Hexane | 3.37 | 57 | 9308 | 0.99322 ppb | | 91 |
| 26) Vinyl Acetate | 3.71 | 43 | 7695 | 1.09839 ppb | # | 94 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 24347 | 0.91355 ppb | | 90 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 5001 | 0.95813 ppb | # | 77 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 11816 | 0.98922 ppb | | 96 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 5667 | 1.03240 ppb | | 96 |
| 31) Chloroform | 4.91 | 83 | 21034 | 1.03288 ppb | | 98 |
| 32) Bromochloromethane | 4.76 | 128 | 6796 | 1.11094 ppb | | 83 |
| 34) 1,1,1-TCA | 5.11 | 97 | 17918 | 1.04336 ppb | | 95 |
| 35) Cyclohexane | 5.16 | 41 | 7956 | 1.00966 ppb | | 96 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 12397 | 0.95843 ppb | | 92 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 22118 | 0.93239 ppb | # | 63 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 16861 | 1.07335 ppb | | 85 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 20308 | 0.84935 ppb | # | 89 |
| 41) 1,2-DCA | 5.62 | 62 | 15253 | 1.00901 ppb | | 93 |
| 42) Benzene | 5.58 | 78 | 41034 | 0.98154 ppb | | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L07.D
Acq On : 10 Nov 14 19:01
Sample : 1.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 11066 | 1.01401 | ppb | | 91 |
| 44) 2-Pentanone | 6.64 | 43 | 316271 | 47.09690 | ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 13502 | 1.10357 | ppb | | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 16223 | 1.02695 | ppb | | 92 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 12073 | 0.95500 | ppb | | 90 |
| 48) Dibromomethane | 6.75 | 93 | 7855 | 1.08221 | ppb | | 90 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 229 | 0.86285 | ppb | # | 38 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 9797 | 1.17264 | ppb | | 95 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 9295 | 1.00734 | ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 15455 | 0.91127 | ppb | | 95 |
| 53) Toluene | 7.78 | 91 | 37730 | 0.89950 | ppb | | 96 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 13439 | 0.91918 | ppb | # | 77 |
| 55) 1,1,2-TCA | 8.22 | 83 | 8760 | 1.07233 | ppb | | 94 |
| 56) 2-Hexanone | 8.51 | 43 | 4954 | 1.88870 | ppb | # | 87 |
| 59) 1,2-EDB | 8.70 | 107 | 10025 | 1.01971 | ppb | | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 12440 | 0.97970 | ppb | | 95 |
| 61) 1-Chlorohexane | 9.22 | 91 | 10515 | 0.90290 | ppb | | 94 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 12697 | 0.99132 | ppb | | 97 |
| 63) m&p-Xylene | 9.46 | 106 | 28776 | 1.67279 | ppb | | 96 |
| 64) o-Xylene | 9.84 | 106 | 12826 | 0.80316 | ppb | | 97 |
| 65) Styrene | 9.86 | 104 | 21214 | 1.22749 | ppb | | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 15475 | 0.95377 | ppb | | 98 |
| 68) Dibromochloromethane | 8.60 | 129 | 11620 | 0.95438 | ppb | # | 72 |
| 69) Chlorobenzene | 9.20 | 112 | 31523 | 1.00851 | ppb | | 95 |
| 70) Ethylbenzene | 9.34 | 91 | 37870 | 0.84766 | ppb | | 97 |
| 71) Bromoform | 10.02 | 173 | 8894 | 1.06621 | ppb | | 87 |
| 73) Isopropylbenzene | 10.22 | 105 | 32629 | 0.93123 | ppb | | 96 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 13916 | 0.31079 | ppb | | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 3934 | 0.30374 | ppb | | 91 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 2702 | 1.08248 | ppb | | 96 |
| 77) Bromobenzene | 10.50 | 156 | 11916 | 0.98138 | ppb | | 91 |
| 78) n-Propylbenzene | 10.63 | 91 | 37267 | 1.01672 | ppb | | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 29215 | 0.82532 | ppb | | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 24576 | 0.88337 | ppb | | 92 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 26506 | 0.82803 | ppb | | 97 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 6397 | 0.87686 | ppb | | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 23547 | 0.91835 | ppb | | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 24474 | 0.78718 | ppb | | 100 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 33231 | 0.89440 | ppb | | 93 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 27436 | 0.86858 | ppb | | 94 |
| 87) Benzyl Chloride | 11.67 | 91 | 14856 | 1.12877 | ppb | | 98 |
| 88) 1,3-DCB | 11.43 | 146 | 21281 | 0.96039 | ppb | | 98 |
| 89) 1,4-DCB | 11.52 | 146 | 24806 | 1.01811 | ppb | | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 27964 | 0.89987 | ppb | | 97 |
| 91) 1,2-DCB | 11.89 | 146 | 21686 | 1.01162 | ppb | | 92 |
| 92) Hexachloroethane | 12.14 | 117 | 9643 | 1.15969 | ppb | | 90 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 1717 | 0.85383 | ppb | # | 74 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 11595 | 0.90421 | ppb | | 87 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 10149 | 1.10050 | ppb | | 93 |
| 96) Naphthalene | 13.72 | 128 | 9670 | 1.12894 | ppb | | 90 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 6391 | 0.78714 | ppb | | 96 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

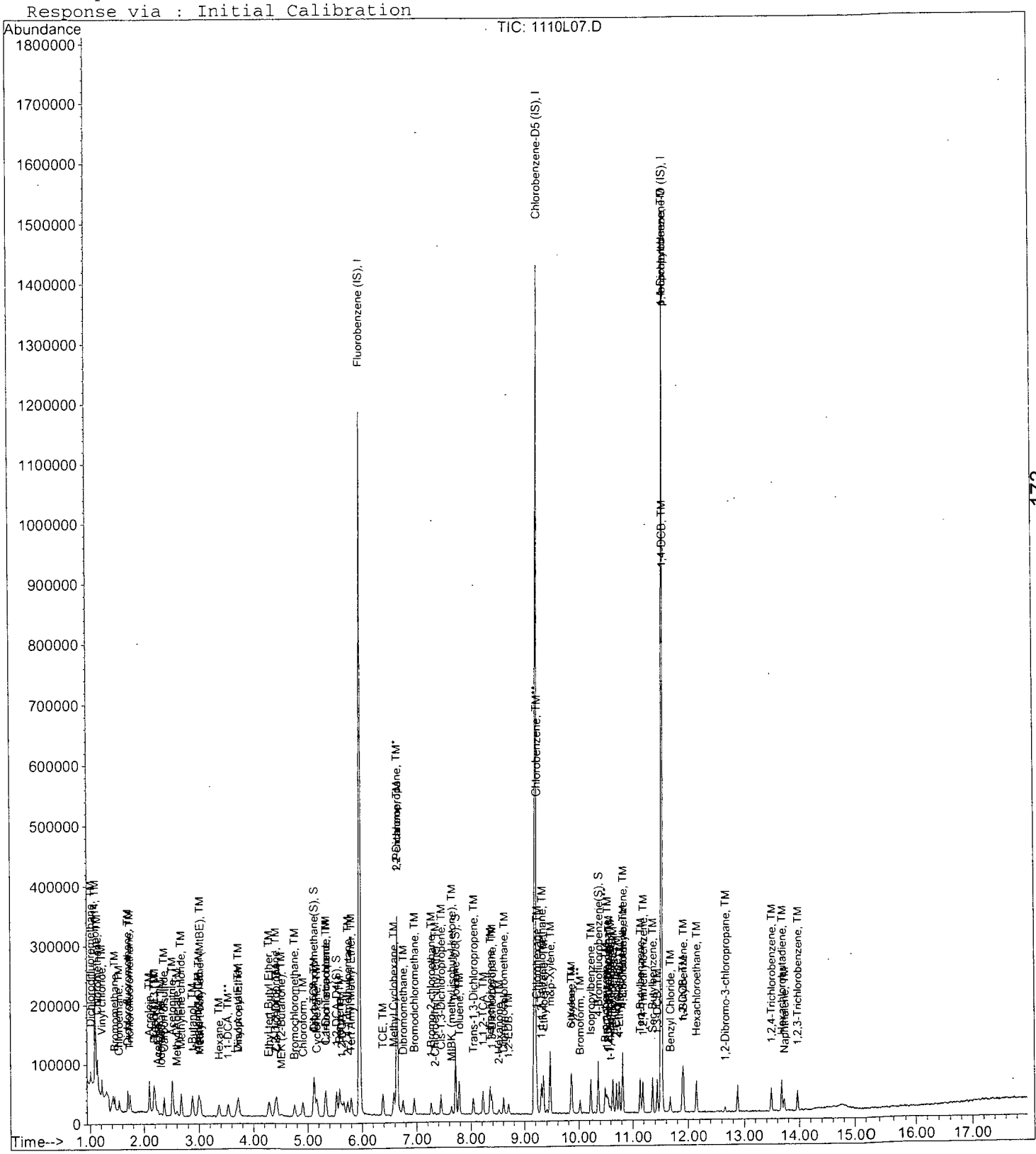
Data File : M:\LOKI\DATA\141110\1110L07.D
Acq On : 10 Nov 14 19:01
Sample : 1.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration




173

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L08.D
Acq On : 10 Nov 14 19:29
Sample : 5.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 609024 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 515008 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 307776 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 138148 | 9.95966 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 41.479% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 156102 | 10.04174 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 40.193% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 392839 | 9.61934 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 38.634% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 144219 | 9.57242 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 41.791% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 43317 | 4.16332 ppb | | 100 |
| 3) Freon 114 | 1.10 | 85 | 38975 | 3.99436 ppb | | 96 |
| 4) Chloromethane | 1.14 | 50 | 97256 | 5.15384 ppb | | 100 |
| 5) Vinyl chloride | 1.22 | 62 | 65683 | 4.55978 ppb | | 94 |
| 6) Bromomethane | 1.45 | 94 | 30264 | 4.29942 ppb | | 98 |
| 7) Chloroethane | 1.54 | 64 | 38830 | 5.58567 ppb | | 97 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 127420 | 5.01996 ppb | | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 85269 | 4.75721 ppb | | 96 |
| 10) Acrolein | 2.10 | 56 | 72036 | 107.96069 ppb | # | 100 |
| 11) Acetone | 2.25 | 43 | 22029 | 4.90109 ppb | | 89 |
| 12) Freon-113 | 2.20 | 101 | 48341 | 4.60024 ppb | | 95 |
| 13) 1,1-DCE | 2.18 | 61 | 83467 | 4.78025 ppb | | 96 |
| 14) t-Butanol | 2.87 | 59 | 30568 | 103.07434 ppb | | 100 |
| 15) Acetonitrile | 2.52 | 41 | 129454 | 98.25084 ppb | | 98 |
| 16) Methyl Acetate | 2.60 | 43 | 42066 | 5.21628 ppb | | 98 |
| 17) Iodomethane | 2.31 | 142 | 8941 | 5.23934 ppb | | 97 |
| 18) Acrylonitrile | 2.96 | 52 | 16865 | 5.61161 ppb | | 87 |
| 19) Methylene chloride | 2.67 | 84 | 70475 | 5.09388 ppb | | 100 |
| 20) Carbon disulfide | 2.36 | 76 | 170755 | 4.67965 ppb | | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 135665 | 4.84171 ppb | | 99 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 76576 | 4.76256 ppb | | 95 |
| 23) Diisopropyl Ether | 3.71 | 45 | 159253 | 4.60348 ppb | | 90 |
| 24) 1,1-DCA | 3.53 | 63 | 111252 | 5.02622 ppb | | 98 |
| 25) Hexane | 3.36 | 57 | 40785 | 3.98658 ppb | | 98 |
| 26) Vinyl Acetate | 3.71 | 43 | 36188 | 4.73179 ppb | # | 98 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 133790 | 4.59858 ppb | | 99 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 21431 | 5.14307 ppb | | 95 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 63319 | 4.85588 ppb | | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 28688 | 4.78749 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 114401 | 5.14600 ppb | | 98 |
| 32) Bromochloromethane | 4.76 | 128 | 34574 | 5.17725 ppb | | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 93372 | 4.98050 ppb | | 99 |
| 35) Cyclohexane | 5.16 | 41 | 36860 | 4.28497 ppb | | 93 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 63229 | 4.47789 ppb | | 95 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 112983 | 4.36290 ppb | | 97 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 82095 | 4.78725 ppb | | 99 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 127354 | 4.87915 ppb | | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 82568 | 5.00338 ppb | | 100 |
| 42) Benzene | 5.58 | 78 | 226404 | 4.96090 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L08.D
Acq On : 10 Nov 14 19:29
Sample : 5.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 60927 | 5.11414 | ppb | | 96 |
| 44) 2-Pentanone | 6.63 | 43 | 677846 | 92.46484 | ppb | | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 67486 | 5.05276 | ppb | | 98 |
| 46) Bromodichloromethane | 6.95 | 83 | 86462 | 5.01368 | ppb | | 97 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 57987 | 4.20175 | ppb | | 95 |
| 48) Dibromomethane | 6.75 | 93 | 39498 | 4.98488 | ppb | | 93 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 1675 | 5.78130 | ppb | # | 39 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 42385 | 4.64727 | ppb | | 95 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 51928 | 5.15517 | ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 87428 | 4.72215 | ppb | | 96 |
| 53) Toluene | 7.78 | 91 | 229624 | 5.01469 | ppb | | 96 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 78422 | 4.91341 | ppb | | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 46079 | 5.16703 | ppb | | 98 |
| 56) 2-Hexanone | 8.51 | 43 | 26394 | 5.53632 | ppb | | 99 |
| 59) 1,2-EDB | 8.69 | 107 | 50792 | 4.96673 | ppb | | 84 |
| 60) Tetrachloroethene | 8.34 | 166 | 69716 | 5.27820 | ppb | | 95 |
| 61) 1-Chlorohexane | 9.22 | 91 | 54053 | 4.46205 | ppb | | 99 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 69941 | 5.24962 | ppb | | 96 |
| 63) m&p-Xylene | 9.46 | 106 | 173648 | 9.70428 | ppb | | 96 |
| 64) o-Xylene | 9.85 | 106 | 82611 | 4.97315 | ppb | | 99 |
| 65) Styrene | 9.86 | 104 | 136702 | 4.63668 | ppb | | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 88297 | 5.23171 | ppb | | 98 |
| 68) Dibromochloromethane | 8.60 | 129 | 67088 | 5.29716 | ppb | | 98 |
| 69) Chlorobenzene | 9.21 | 112 | 165825 | 5.10017 | ppb | | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 224437 | 4.82952 | ppb | | 99 |
| 71) Bromoform | 10.02 | 173 | 46067 | 5.30904 | ppb | | 97 |
| 73) Isopropylbenzene | 10.22 | 105 | 195792 | 4.56422 | ppb | | 94 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 70023 | 5.12726 | ppb | | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 20262 | 5.02113 | ppb | | 92 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 14070 | 4.60411 | ppb | | 96 |
| 77) Bromobenzene | 10.49 | 156 | 72035 | 4.84579 | ppb | | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 243401 | 4.50110 | ppb | | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 205072 | 4.73193 | ppb | | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 165716 | 4.86536 | ppb | | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 191813 | 4.89438 | ppb | | 98 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 42488 | 4.75705 | ppb | | 94 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 147743 | 4.70646 | ppb | | 97 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 177232 | 4.65618 | ppb | | 100 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 218213 | 4.79720 | ppb | | 100 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 182114 | 4.70924 | ppb | | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 81877 | 5.27036 | ppb | | 97 |
| 88) 1,3-DCB | 11.43 | 146 | 140160 | 5.16650 | ppb | | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 147991 | 4.96126 | ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 174408 | 4.58420 | ppb | | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 126657 | 4.82597 | ppb | | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 48961 | 4.80947 | ppb | | 94 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 12946 | 5.25837 | ppb | | 93 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 74529 | 4.74722 | ppb | | 98 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 52040 | 5.07902 | ppb | | 97 |
| 96) Naphthalene | 13.72 | 128 | 70624 | 4.51693 | ppb | | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 47136 | 4.74190 | ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

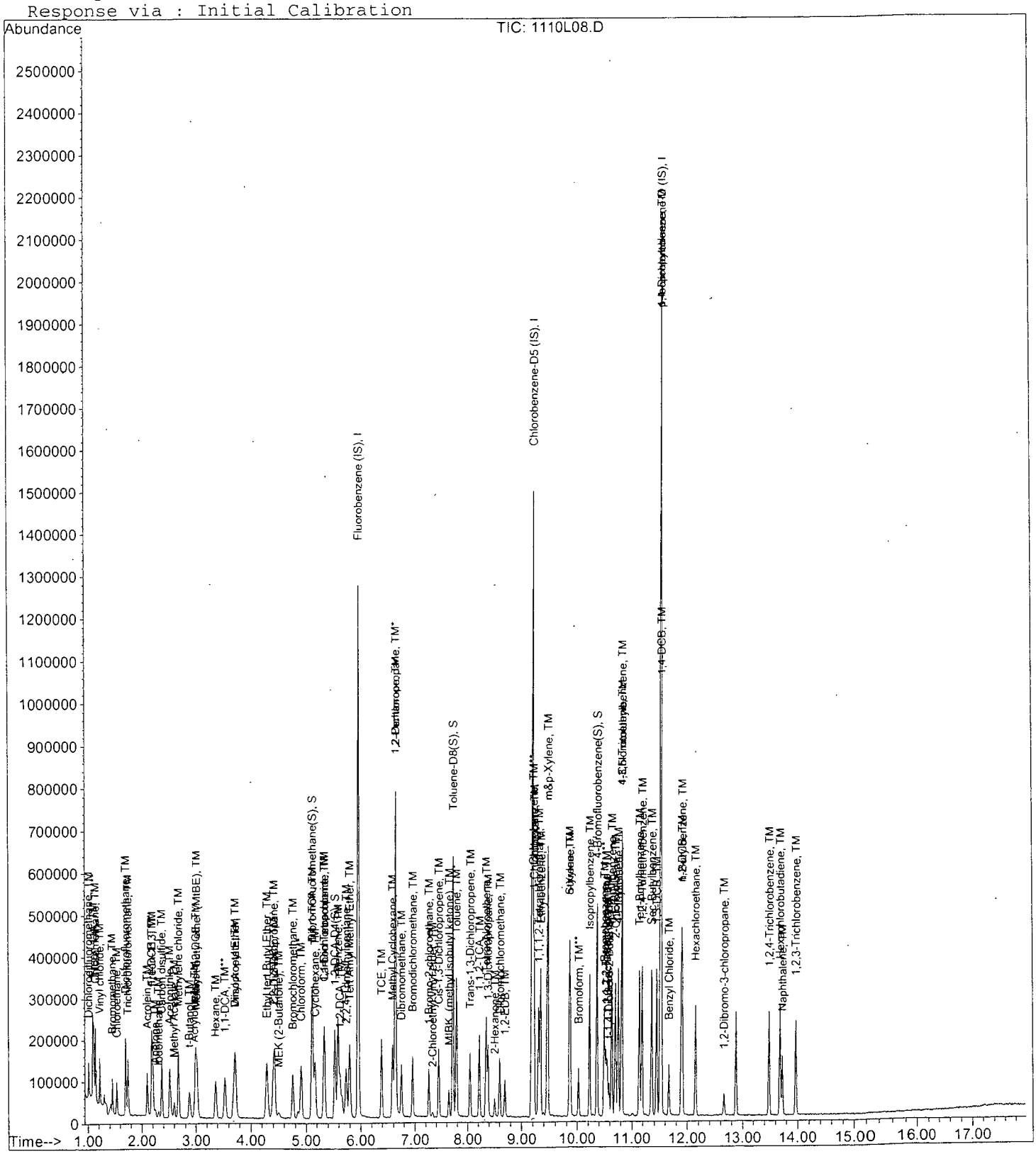
Quantitation Report

Data File : M:\LOKI\DATA\141110\1110L08.D
Acq On : 10 Nov 14 19:29
Sample : 5.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L09.D
Acq On : 10 Nov 14 19:57
Sample : 10ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 626624 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 536256 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 326848 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 326963 | 22.91004 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 95.410% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 361046 | 22.57307 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 90.349% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 1026953 | 24.15034 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 96.997% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 384687 | 24.52158 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 107.061% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 97384 | 9.09697 ppb | 100 |
| 3) Freon 114 | 1.10 | 85 | 91984 | 9.16223 ppb | 100 |
| 4) Chloromethane | 1.14 | 50 | 188675 | 9.71493 ppb | 100 |
| 5) Vinyl chloride | 1.22 | 62 | 138147 | 9.32093 ppb | 100 |
| 6) Bromomethane | 1.44 | 94 | 60305 | 9.08917 ppb | 100 |
| 7) Chloroethane | 1.53 | 64 | 75638 | 10.49291 ppb | 100 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 244585 | 9.36527 ppb | 100 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 174119 | 9.44136 ppb | 100 |
| 10) Acrolein | 2.10 | 56 | 87271 | 129.63062 ppb | 100 |
| 11) Acetone | 2.25 | 43 | 37985 | 10.58257 ppb | 100 |
| 12) Freon-113 | 2.20 | 101 | 101942 | 9.42856 ppb | 100 |
| 13) 1,1-DCE | 2.18 | 61 | 168911 | 9.40201 ppb | 100 |
| 14) t-Butanol | 2.87 | 59 | 38352 | 128.97079 ppb | 100 |
| 15) Acetonitrile | 2.52 | 41 | 168954 | 127.39308 ppb | 100 |
| 16) Methyl Acetate | 2.59 | 43 | 83127 | 10.23721 ppb | 100 |
| 17) Iodomethane | 2.31 | 142 | 18336 | 8.52485 ppb | 100 |
| 18) Acrylonitrile | 2.97 | 52 | 30167 | 10.04216 ppb | 100 |
| 19) Methylene chloride | 2.67 | 84 | 129528 | 9.83359 ppb | 100 |
| 20) Carbon disulfide | 2.36 | 76 | 339801 | 9.05090 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 264288 | 9.16718 ppb | 100 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 154628 | 9.34680 ppb | 100 |
| 23) Diisopropyl Ether | 3.71 | 45 | 334016 | 9.38412 ppb | 100 |
| 24) 1,1-DCA | 3.53 | 63 | 212443 | 9.32832 ppb | 100 |
| 25) Hexane | 3.36 | 57 | 95898 | 9.11038 ppb | 100 |
| 26) Vinyl Acetate | 3.71 | 43 | 70824 | 9.00055 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 275309 | 9.19703 ppb | 100 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 39749 | 9.65029 ppb | 100 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 124804 | 9.30229 ppb | 100 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 57338 | 9.29988 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 219608 | 9.60097 ppb | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 65183 | 9.48662 ppb | 100 |
| 34) 1,1,1-TCA | 5.10 | 97 | 178206 | 9.23860 ppb | 100 |
| 35) Cyclohexane | 5.16 | 41 | 83083 | 9.38710 ppb | 100 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 137130 | 9.43880 ppb | 100 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 256218 | 9.61611 ppb | 100 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 163341 | 9.25746 ppb | 100 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 269105 | 10.02029 ppb | 100 |
| 41) 1,2-DCA | 5.62 | 62 | 163979 | 9.65755 ppb | 100 |
| 42) Benzene | 5.58 | 78 | 458964 | 9.77423 ppb | 100 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L09.D
Acq On : 10 Nov 14 19:57
Sample : 10ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 117002 | 9.54517 | ppb | 100 |
| 44) 2-Pentanone | 6.63 | 43 | 910982 | 120.77660 | ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 131599 | 9.57625 | ppb | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 168469 | 9.49464 | ppb | 100 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 133475 | 9.39997 | ppb | 100 |
| 48) Dibromomethane | 6.75 | 93 | 77447 | 9.49974 | ppb | 100 |
| 49) 2-Chloroethyl vinyl ether | 7.32 | 106 | 2981 | 10.00000 | ppb | 100 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 84942 | 9.05181 | ppb | 100 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 96392 | 9.30057 | ppb | 100 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 169370 | 8.89105 | ppb | 100 |
| 53) Toluene | 7.78 | 91 | 478136 | 10.14859 | ppb | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 155077 | 9.44321 | ppb | 100 |
| 55) 1,1,2-TCA | 8.21 | 83 | 89938 | 9.80186 | ppb | 100 |
| 56) 2-Hexanone | 8.50 | 43 | 51216 | 9.60066 | ppb | 100 |
| 59) 1,2-EDB | 8.69 | 107 | 104781 | 9.84009 | ppb | 100 |
| 60) Tetrachloroethene | 8.34 | 166 | 136717 | 9.94072 | ppb | 100 |
| 61) 1-Chlorohexane | 9.22 | 91 | 123201 | 9.76721 | ppb | 100 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 132628 | 9.56033 | ppb | 100 |
| 63) m&p-Xylene | 9.46 | 106 | 386650 | 20.75169 | ppb | 100 |
| 64) o-Xylene | 9.85 | 106 | 170473 | 9.85577 | ppb | 100 |
| 65) Styrene | 9.86 | 104 | 299338 | 9.12066 | ppb | 100 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 174582 | 9.93434 | ppb | 100 |
| 68) Dibromochloromethane | 8.60 | 129 | 131929 | 10.00416 | ppb | 100 |
| 69) Chlorobenzene | 9.20 | 112 | 330233 | 9.75432 | ppb | 100 |
| 70) Ethylbenzene | 9.34 | 91 | 482635 | 9.97401 | ppb | 100 |
| 71) Bromoform | 10.02 | 173 | 91334 | 10.10882 | ppb | 100 |
| 73) Isopropylbenzene | 10.22 | 105 | 425824 | 9.34740 | ppb | 100 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 134958 | 10.31408 | ppb | 100 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 40606 | 10.51090 | ppb | 100 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 32742 | 10.08895 | ppb | 100 |
| 77) Bromobenzene | 10.49 | 156 | 148110 | 9.38199 | ppb | 100 |
| 78) n-Propylbenzene | 10.63 | 91 | 539892 | 9.16960 | ppb | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 459884 | 9.99238 | ppb | 100 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 357002 | 9.86983 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 430948 | 10.35461 | ppb | 100 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 94504 | 9.96347 | ppb | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 310857 | 9.32475 | ppb | 100 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 394778 | 9.76629 | ppb | 100 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 477257 | 9.87980 | ppb | 100 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 403765 | 9.83162 | ppb | 100 |
| 87) Benzyl Chloride | 11.67 | 91 | 163832 | 9.97810 | ppb | 100 |
| 88) 1,3-DCB | 11.44 | 146 | 278788 | 9.67688 | ppb | 100 |
| 89) 1,4-DCB | 11.53 | 146 | 290241 | 9.16229 | ppb | 100 |
| 90) n-Butylbenzene | 11.91 | 91 | 373954 | 9.25560 | ppb | 100 |
| 91) 1,2-DCB | 11.89 | 146 | 258891 | 9.28883 | ppb | 100 |
| 92) Hexachloroethane | 12.14 | 117 | 98109 | 9.07496 | ppb | 100 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 24754 | 9.46781 | ppb | 100 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 157283 | 9.43375 | ppb | 100 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 104204 | 9.70721 | ppb | 100 |
| 96) Naphthalene | 13.72 | 128 | 161088 | 9.18894 | ppb | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 100848 | 9.55335 | ppb | 100 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

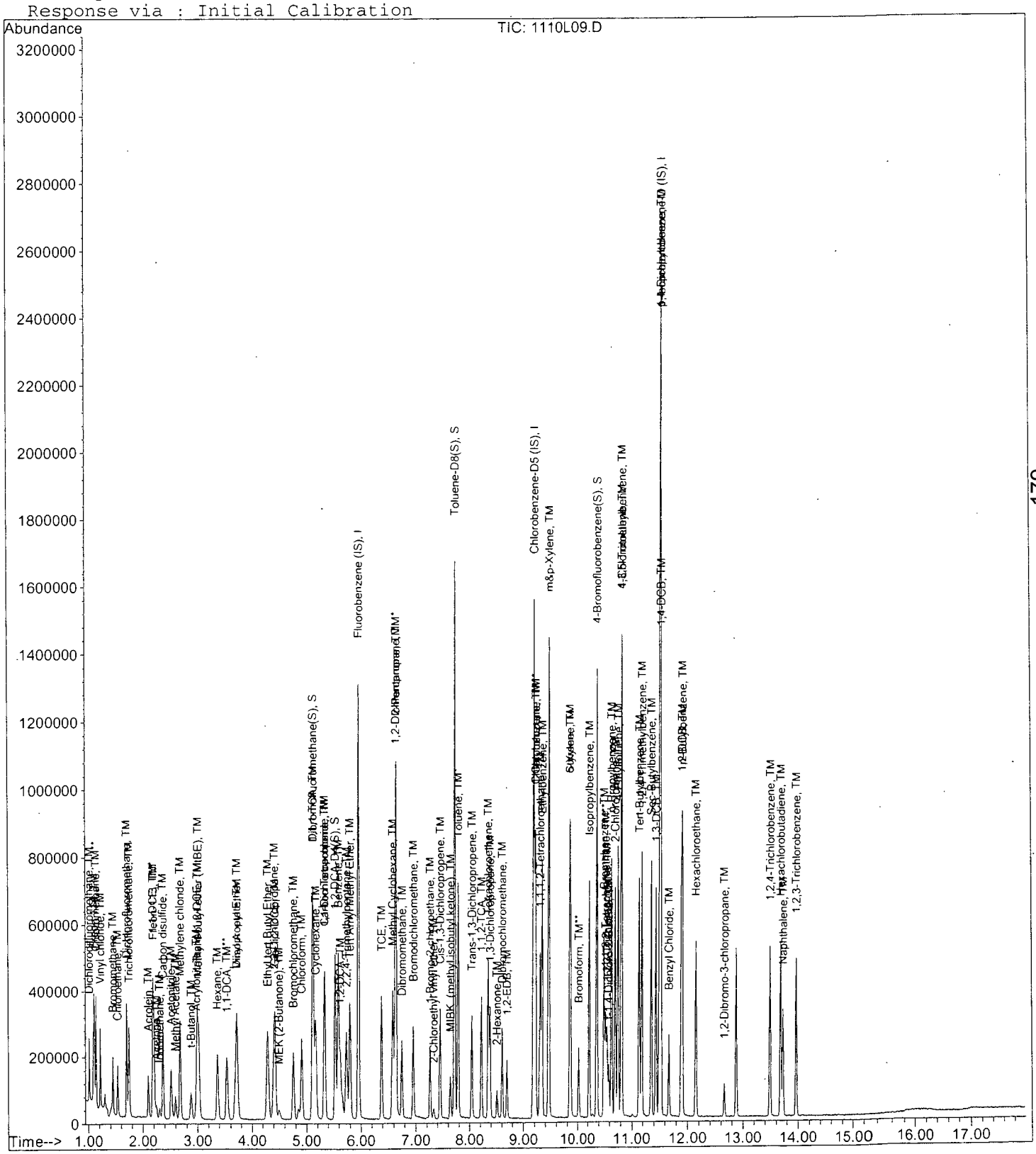
Data File : M:\LOKI\DATA\141110\1110L09.D
Acq On : 10 Nov 14 19:57
Sample : 10ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L10.D
Acq On : 10 Nov 14 20:25
Sample : 20ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 650240 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 558080 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 338304 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 544931 | 36.79612 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 153.239% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 592638 | 35.70679 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 142.918% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 1824718 | 41.23292 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 165.610% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 674792 | 41.33201 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 180.452% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 209670 | 18.87464 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 203996 | 19.58140 ppb | 93 |
| 4) Chloromethane | 1.14 | 50 | 391587 | 19.42769 ppb | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 284846 | 18.52087 ppb | 99 |
| 6) Bromomethane | 1.44 | 94 | 147884 | 22.58950 ppb | 98 |
| 7) Chloroethane | 1.53 | 64 | 151279 | 20.13892 ppb | 99 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 500593 | 18.47177 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 346680 | 18.11552 ppb | 98 |
| 10) Acrolein | 2.10 | 56 | 105933 | 154.03766 ppb | 96 |
| 11) Acetone | 2.25 | 43 | 67020 | 20.44801 ppb | 100 |
| 12) Freon-113 | 2.20 | 101 | 211260 | 18.82968 ppb | 95 |
| 13) 1,1-DCE | 2.18 | 61 | 339998 | 18.23781 ppb | 98 |
| 14) t-Butanol | 2.88 | 59 | 44888 | 147.38081 ppb | 100 |
| 15) Acetonitrile | 2.52 | 41 | 200309 | 147.01740 ppb | 97 |
| 16) Methyl Acetate | 2.59 | 43 | 163471 | 19.61327 ppb | 100 |
| 17) Iodomethane | 2.31 | 142 | 45344 | 17.64468 ppb | 95 |
| 18) Acrylonitrile | 2.96 | 52 | 60094 | 19.63457 ppb | 93 |
| 19) Methylene chloride | 2.67 | 84 | 269479 | 20.65399 ppb | 97 |
| 20) Carbon disulfide | 2.36 | 76 | 702738 | 18.03823 ppb | 98 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 571553 | 19.10504 ppb | 98 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 329034 | 19.16677 ppb | 97 |
| 23) Diisopropyl Ether | 3.71 | 45 | 749871 | 20.30235 ppb | 99 |
| 24) 1,1-DCA | 3.53 | 63 | 434427 | 18.38278 ppb | 98 |
| 25) Hexane | 3.36 | 57 | 221971 | 20.32154 ppb | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 151040 | 18.49753 ppb # | 97 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 610272 | 19.64645 ppb | 99 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 81277 | 19.47424 ppb | 91 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 264588 | 19.00487 ppb | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 115952 | 18.12367 ppb | 99 |
| 31) Chloroform | 4.90 | 83 | 443553 | 18.68727 ppb | 96 |
| 32) Bromochloromethane | 4.75 | 128 | 130473 | 18.29916 ppb | 96 |
| 34) 1,1,1-TCA | 5.10 | 97 | 374298 | 18.69971 ppb | 99 |
| 35) Cyclohexane | 5.16 | 41 | 183521 | 19.98198 ppb | 91 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 300786 | 19.95148 ppb | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 590891 | 21.37128 ppb # | 85 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 341692 | 18.66229 ppb | 96 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 586759 | 21.05483 ppb | 94 |
| 41) 1,2-DCA | 5.62 | 62 | 329822 | 18.71939 ppb | 99 |
| 42) Benzene | 5.58 | 78 | 962874 | 19.76091 ppb | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L10.D
Acq On : 10 Nov 14 20:25
Sample : 20ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 242500 | 19.06493 ppb | | 98 |
| 44) 2-Pentanone | 6.63 | 43 | 1148179 | 146.69521 ppb | | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 271762 | 19.05745 ppb | | 98 |
| 46) Bromodichloromethane | 6.95 | 83 | 341821 | 18.56482 ppb | | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 303160 | 20.57462 ppb | | 97 |
| 48) Dibromomethane | 6.75 | 93 | 153025 | 18.08852 ppb | | 98 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 8960 | 28.96539 ppb | # | 55 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 164555 | 16.89885 ppb | | 97 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 197568 | 18.37039 ppb | | 100 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 370959 | 18.76617 ppb | | 99 |
| 53) Toluene | 7.78 | 91 | 1022700 | 20.91876 ppb | | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 324021 | 19.01424 ppb | | 98 |
| 55) 1,1,2-TCA | 8.21 | 83 | 183220 | 19.24295 ppb | | 98 |
| 56) 2-Hexanone | 8.50 | 43 | 105122 | 18.06207 ppb | | 94 |
| 59) 1,2-EDB | 8.69 | 107 | 213164 | 19.23562 ppb | | 99 |
| 60) Tetrachloroethene | 8.34 | 166 | 268102 | 18.73144 ppb | | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 275331 | 20.97427 ppb | | 99 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 271448 | 18.80182 ppb | | 99 |
| 63) m&p-Xylene | 9.46 | 106 | 859449 | 44.32323 ppb | | 97 |
| 64) o-Xylene | 9.85 | 106 | 387992 | 21.55429 ppb | | 98 |
| 65) Styrene | 9.86 | 104 | 698408 | 19.73850 ppb | | 96 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 362294 | 19.80962 ppb | | 99 |
| 68) Dibromochloromethane | 8.60 | 129 | 260907 | 19.01085 ppb | | 98 |
| 69) Chlorobenzene | 9.21 | 112 | 674439 | 19.14233 ppb | | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 1093459 | 21.71347 ppb | | 97 |
| 71) Bromoform | 10.02 | 173 | 182609 | 19.42074 ppb | | 100 |
| 73) Isopropylbenzene | 10.23 | 105 | 943783 | 20.01574 ppb | | 98 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 265129 | 20.68781 ppb | | 95 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 81619 | 21.51123 ppb | | 98 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 67608 | 20.12693 ppb | | 90 |
| 77) Bromobenzene | 10.49 | 156 | 306360 | 18.74913 ppb | | 99 |
| 78) n-Propylbenzene | 10.63 | 91 | 1226502 | 19.87130 ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 1047806 | 21.99583 ppb | | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 773464 | 20.65941 ppb | | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 943488 | 21.90202 ppb | | 100 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 201600 | 20.53476 ppb | | 96 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 699809 | 20.28125 ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 905028 | 21.63104 ppb | | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 1076567 | 21.53157 ppb | | 100 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 906287 | 21.32066 ppb | | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 331043 | 19.53064 ppb | | 98 |
| 88) 1,3-DCB | 11.44 | 146 | 581807 | 19.51097 ppb | | 99 |
| 89) 1,4-DCB | 11.53 | 146 | 594986 | 18.14642 ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 851042 | 20.35054 ppb | | 98 |
| 91) 1,2-DCB | 11.89 | 146 | 535371 | 18.55828 ppb | | 100 |
| 92) Hexachloroethane | 12.14 | 117 | 197762 | 17.67330 ppb | | 98 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 49888 | 18.43483 ppb | | 97 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 335687 | 19.45252 ppb | | 97 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 214675 | 19.46700 ppb | | 95 |
| 96) Naphthalene | 13.72 | 128 | 382592 | 20.50693 ppb | | 98 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 227072 | 20.78216 ppb | | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

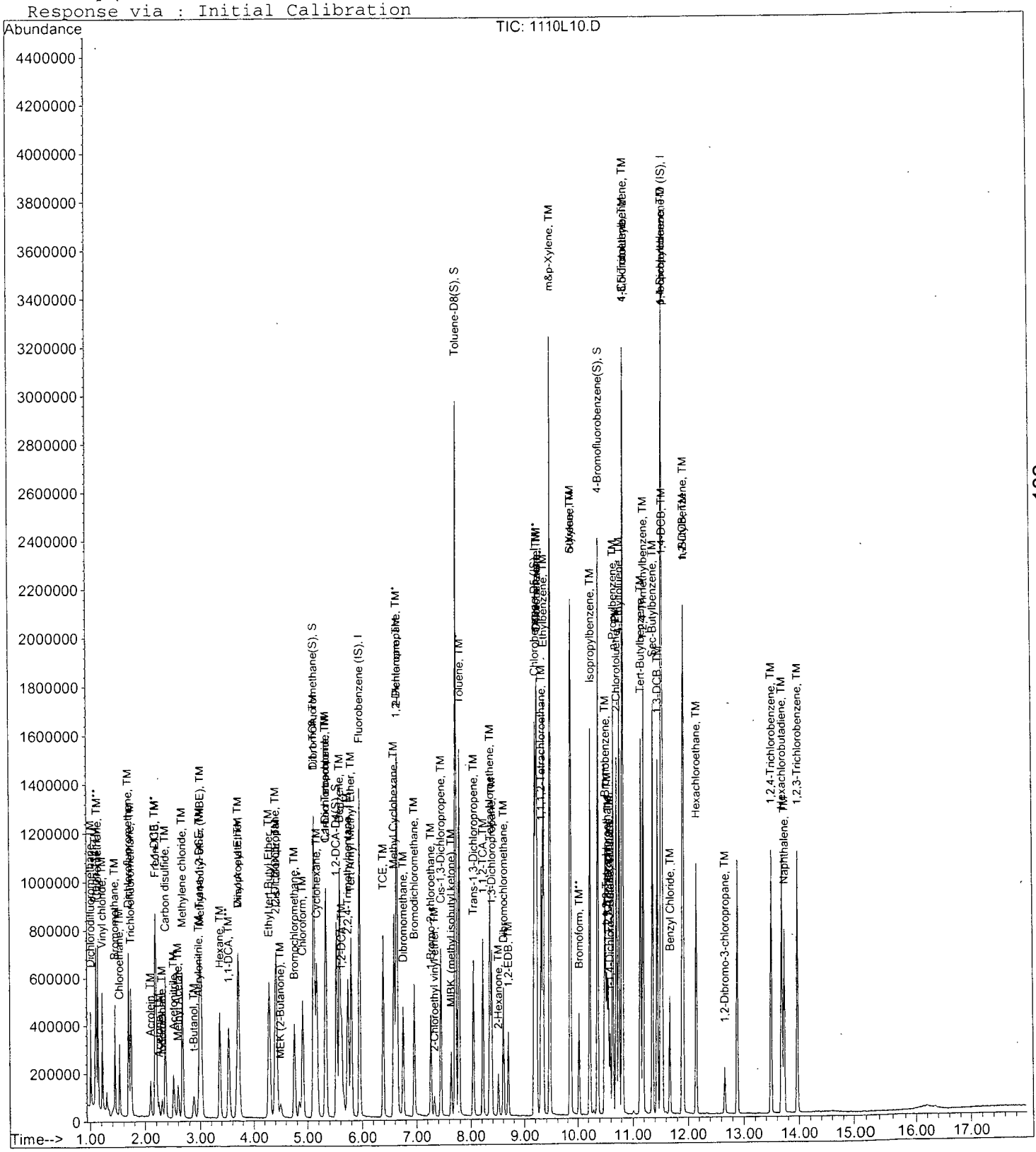
Data File : M:\LOKI\DATA\141110\1110L10.D
Acq On : 10 Nov 14 20:25
Sample : 20ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:41 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L11.D
Acq On : 10 Nov 14 20:54
Sample : 40ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 653952 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 571968 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 341312 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 1083331 | 72.73601 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 302.914% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 1183677 | 70.91243 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 283.826% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 3775886 | 83.25148 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 334.372% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 1393747 | 83.29621 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 363.663% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 463182 | 41.45929 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 422964 | 40.36950 ppb | 92 |
| 4) Chloromethane | 1.13 | 50 | 804064 | 39.66229 ppb | 100 |
| 5) Vinyl chloride | 1.22 | 62 | 588087 | 38.02074 ppb | 100 |
| 6) Bromomethane | 1.44 | 94 | 271518 | 41.91157 ppb | 99 |
| 7) Chloroethane | 1.52 | 64 | 270518 | 35.73671 ppb | 99 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 975028 | 35.77409 ppb | 96 |
| 9) Trichlorofluoromethane | 1.73 | 101 | 703422 | 36.54817 ppb | 98 |
| 10) Acrolein | 2.10 | 56 | 119718 | 174.84467 ppb | 100 |
| 11) Acetone | 2.25 | 43 | 121962 | 39.83680 ppb | 99 |
| 12) Freon-113 | 2.20 | 101 | 408646 | 36.21603 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 680878 | 36.31562 ppb | 97 |
| 14) t-Butanol | 2.89 | 59 | 51644 | 170.75355 ppb | 98 |
| 15) Acetonitrile | 2.52 | 41 | 236196 | 174.14884 ppb | 99 |
| 16) Methyl Acetate | 2.60 | 43 | 330562 | 39.67595 ppb | 99 |
| 17) Iodomethane | 2.31 | 142 | 97400 | 35.49247 ppb | 97 |
| 18) Acrylonitrile | 2.96 | 52 | 123409 | 40.49675 ppb | 97 |
| 19) Methylene chloride | 2.67 | 84 | 524271 | 40.82694 ppb | 98 |
| 20) Carbon disulfide | 2.36 | 76 | 1406273 | 35.89203 ppb | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 1193908 | 39.68169 ppb | 97 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 667636 | 38.67014 ppb | 97 |
| 23) Diisopropyl Ether | 3.71 | 45 | 1617806 | 43.55259 ppb | 96 |
| 24) 1,1-DCA | 3.53 | 63 | 848086 | 35.68306 ppb | 96 |
| 25) Hexane | 3.36 | 57 | 494384 | 45.00415 ppb | 95 |
| 26) Vinyl Acetate | 3.71 | 43 | 305681 | 37.22357 ppb # | 97 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 1312608 | 42.01684 ppb | 99 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 171815 | 41.45427 ppb | 92 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 549238 | 39.22683 ppb | 98 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 233492 | 36.28840 ppb | 99 |
| 31) Chloroform | 4.90 | 83 | 873174 | 36.57876 ppb | 97 |
| 32) Bromochloromethane | 4.75 | 128 | 248219 | 34.61572 ppb | 96 |
| 34) 1,1,1-TCA | 5.10 | 97 | 737901 | 36.65585 ppb | 99 |
| 35) Cyclohexane | 5.16 | 41 | 394153 | 42.67223 ppb | 88 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 624730 | 41.20384 ppb | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 1299215 | 46.72314 ppb # | 84 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 663190 | 36.01603 ppb | 97 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 1231731 | 43.94765 ppb | 92 |
| 41) 1,2-DCA | 5.62 | 62 | 652803 | 36.84021 ppb | 100 |
| 42) Benzene | 5.58 | 78 | 1943446 | 39.65863 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L11.D
Acq On : 10 Nov 14 20:54
Sample : 40ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| | Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|---|
| 43) | TCE | 6.38 | 95 | 486595 | 38.03812 | ppb | | 98 |
| 44) | 2-Pentanone | 6.64 | 43 | 1378246 | 175.08981 | ppb | | 100 |
| 45) | 1,2-Dichloropropane | 6.62 | 63 | 546007 | 38.07169 | ppb | | 97 |
| 46) | Bromodichloromethane | 6.95 | 83 | 681234 | 36.78884 | ppb | | 99 |
| 47) | Methyl Cyclohexane | 6.58 | 83 | 677021 | 45.68672 | ppb | | 95 |
| 48) | Dibromomethane | 6.75 | 93 | 300260 | 35.29116 | ppb | | 97 |
| 49) | 2-Chloroethyl vinyl ether | 7.33 | 106 | 25250 | 81.16346 | ppb | # | 74 |
| 50) | MIBK (methyl isobutyl ket | 7.64 | 43 | 343015 | 35.02572 | ppb | | 98 |
| 51) | 1-Bromo-2-chloroethane | 7.26 | 63 | 395776 | 36.59140 | ppb | | 100 |
| 52) | Cis-1,3-Dichloropropene | 7.44 | 75 | 779952 | 39.23245 | ppb | | 99 |
| 53) | Toluene | 7.78 | 91 | 2094338 | 42.59536 | ppb | | 97 |
| 54) | Trans-1,3-Dichloropropene | 8.04 | 75 | 668815 | 39.02470 | ppb | | 98 |
| 55) | 1,1,2-TCA | 8.21 | 83 | 361234 | 37.72378 | ppb | | 97 |
| 56) | 2-Hexanone | 8.51 | 43 | 225780 | 37.49599 | ppb | | 95 |
| 59) | 1,2-EDB | 8.69 | 107 | 415335 | 36.56922 | ppb | | 97 |
| 60) | Tetrachloroethene | 8.34 | 166 | 541973 | 36.94651 | ppb | | 97 |
| 61) | 1-Chlorohexane | 9.22 | 91 | 613542 | 45.60378 | ppb | | 96 |
| 62) | 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 531460 | 35.91770 | ppb | | 99 |
| 63) | m&p-Xylene | 9.46 | 106 | 1786376 | 89.88948 | ppb | | 97 |
| 64) | o-Xylene | 9.85 | 106 | 835363 | 45.28046 | ppb | | 98 |
| 65) | Styrene | 9.86 | 104 | 1486688 | 40.38155 | ppb | | 97 |
| 67) | 1,3-Dichloropropane | 8.38 | 76 | 725996 | 38.73237 | ppb | | 98 |
| 68) | Dibromochloromethane | 8.60 | 129 | 515428 | 36.64449 | ppb | | 98 |
| 69) | Chlorobenzene | 9.21 | 112 | 1378243 | 38.16828 | ppb | | 99 |
| 70) | Ethylbenzene | 9.34 | 91 | 2309155 | 44.74089 | ppb | | 98 |
| 71) | Bromoform | 10.02 | 173 | 353739 | 36.70720 | ppb | | 100 |
| 73) | Isopropylbenzene | 10.22 | 105 | 2086155 | 43.85324 | ppb | | 97 |
| 74) | 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 516182 | 41.07327 | ppb | | 97 |
| 75) | 1,2,3-Trichloropropane | 10.55 | 110 | 154213 | 41.30443 | ppb | | 96 |
| 76) | t-1,4-Dichloro-2-Butene | 10.58 | 53 | 126897 | 37.44435 | ppb | | 95 |
| 77) | Bromobenzene | 10.49 | 156 | 620790 | 37.65732 | ppb | | 99 |
| 78) | n-Propylbenzene | 10.63 | 91 | 2618729 | 41.81604 | ppb | | 99 |
| 79) | 4-Ethyltoluene | 10.75 | 105 | 2213216 | 46.05098 | ppb | | 97 |
| 80) | 2-Chlorotoluene | 10.70 | 91 | 1591712 | 42.14032 | ppb | | 99 |
| 81) | 1,3,5-Trimethylbenzene | 10.81 | 105 | 1951020 | 44.89159 | ppb | | 99 |
| 82) | 4-Chlorotoluene | 10.81 | 126 | 395840 | 39.96449 | ppb | | 92 |
| 83) | Tert-Butylbenzene | 11.13 | 119 | 1536602 | 44.13998 | ppb | | 97 |
| 84) | 1,2,4-Trimethylbenzene | 11.18 | 105 | 1907422 | 45.18743 | ppb | | 98 |
| 85) | Sec-Butylbenzene | 11.35 | 105 | 2274198 | 45.08358 | ppb | | 100 |
| 86) | p-Isopropyltoluene | 11.50 | 119 | 1931080 | 45.02885 | ppb | | 99 |
| 87) | Benzyl Chloride | 11.67 | 91 | 677041 | 39.64698 | ppb | | 99 |
| 88) | 1,3-DCB | 11.44 | 146 | 1151000 | 38.25875 | ppb | | 99 |
| 89) | 1,4-DCB | 11.53 | 146 | 1183789 | 35.78607 | ppb | | 99 |
| 90) | n-Butylbenzene | 11.91 | 91 | 1861304 | 44.11617 | ppb | | 96 |
| 91) | 1,2-DCB | 11.89 | 146 | 1083823 | 37.23890 | ppb | | 99 |
| 92) | Hexachloroethane | 12.14 | 117 | 397121 | 35.17654 | ppb | | 96 |
| 93) | 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 108322 | 39.67484 | ppb | | 96 |
| 94) | 1,2,4-Trichlorobenzene | 13.49 | 180 | 813693 | 46.73663 | ppb | | 99 |
| 95) | Hexachlorobutadiene | 13.68 | 225 | 450295 | 40.63249 | ppb | | 95 |
| 96) | Naphthalene | 13.72 | 128 | 1059840 | 55.52708 | ppb | | 97 |
| 97) | 1,2,3-Trichlorobenzene | 13.97 | 180 | 541696 | 49.14036 | ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

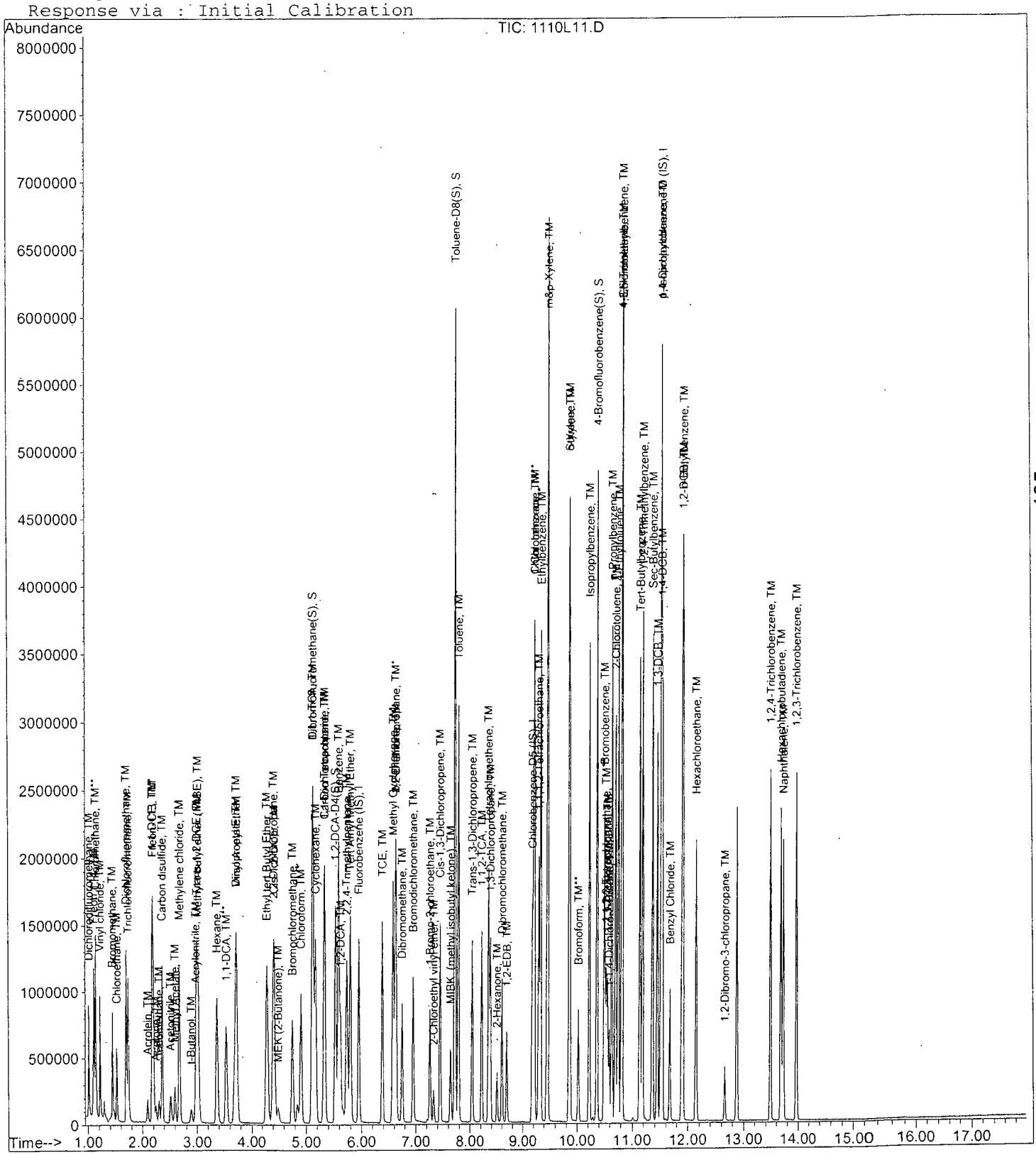
Data File : M:\LOKI\DATA\141110\1110L11.D
Acq On : 10 Nov 14 20:54
Sample : 40ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration




185

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L12.D
Acq On : 10 Nov 14 21:22
Sample : 100ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 648384 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 570368 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 367936 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 1308579 | 88.61390 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 369.039% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 1425732 | 86.14710 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 344.805% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 4731793 | 104.62017 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 420.199% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 1849930 | 110.86978 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 484.049% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 1152714 | 104.06516 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 1105895 | 106.45778 ppb | | 92 |
| 4) Chloromethane | 1.13 | 50 | 2015419 | 100.26437 ppb | | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 1504345 | 98.09346 ppb | | 99 |
| 6) Bromomethane | 1.44 | 94 | 627988 | 98.85393 ppb | | 99 |
| 7) Chloroethane | 1.52 | 64 | 763735 | 101.58988 ppb | | 99 |
| 8) Dichlorofluoromethane | 1.69 | 67 | 2333217 | 86.34163 ppb | | 97 |
| 9) Trichlorofluoromethane | 1.73 | 101 | 1731303 | 90.72696 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 128471 | 190.40422 ppb | # | 95 |
| 11) Acetone | 2.26 | 43 | 288562 | 99.92209 ppb | | 99 |
| 12) Freon-113 | 2.19 | 101 | 983187 | 87.88268 ppb | | 97 |
| 13) 1,1-DCE | 2.18 | 61 | 1663451 | 89.48448 ppb | | 96 |
| 14) t-Butanol | 2.92 | 59 | 54320 | 182.05371 ppb | | 99 |
| 15) Acetonitrile | 2.52 | 41 | 268555 | 201.21915 ppb | | 96 |
| 16) Methyl Acetate | 2.60 | 43 | 824503 | 100.17165 ppb | | 97 |
| 17) Iodomethane | 2.30 | 142 | 289024 | 102.37576 ppb | | 98 |
| 18) Acrylonitrile | 2.97 | 52 | 299969 | 99.84330 ppb | | 94 |
| 19) Methylene chloride | 2.67 | 84 | 1250839 | 99.55744 ppb | | 97 |
| 20) Carbon disulfide | 2.36 | 76 | 3398584 | 87.48629 ppb | | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 3005003 | 100.73440 ppb | | 97 |
| 22) Trans-1,2-DCE | 2.98 | 61 | 1644435 | 96.06525 ppb | | 96 |
| 23) Diisopropyl Ether | 3.72 | 45 | 4052463 | 110.03230 ppb | | 94 |
| 24) 1,1-DCA | 3.53 | 63 | 1939122 | 82.28884 ppb | | 97 |
| 25) Hexane | 3.36 | 57 | 1326667 | 121.80460 ppb | | 93 |
| 26) Vinyl Acetate | 3.71 | 43 | 735461 | 90.32808 ppb | # | 96 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 3411552 | 110.14225 ppb | | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 406411 | 99.55249 ppb | | 92 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 1337919 | 96.37537 ppb | | 98 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 570368 | 89.40556 ppb | | 100 |
| 31) Chloroform | 4.90 | 83 | 2067490 | 87.35449 ppb | | 99 |
| 32) Bromochloromethane | 4.75 | 128 | 577846 | 81.27631 ppb | | 96 |
| 34) 1,1,1-TCA | 5.10 | 97 | 1792957 | 89.83151 ppb | | 99 |
| 35) Cyclohexane | 5.16 | 41 | 1004862 | 109.72372 ppb | | 84 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 1584646 | 105.41228 ppb | | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 3343396 | 121.26974 ppb | | 92 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 1636359 | 89.62931 ppb | | 96 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 3072705 | 110.57430 ppb | # | 89 |
| 41) 1,2-DCA | 5.62 | 62 | 1531521 | 87.17190 ppb | | 99 |
| 42) Benzene | 5.58 | 78 | 4680399 | 96.33003 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L12.D
Acq On : 10 Nov 14 21:22
Sample : 100ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 1207489 | 95.20245 ppb | | 97 |
| 44) 2-Pentanone | 6.64 | 43 | 1543699 | 197.79274 ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 1308897 | 92.04983 ppb | | 97 |
| 46) Bromodichloromethane | 6.95 | 83 | 1637605 | 89.19540 ppb | | 97 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 1810991 | 123.25872 ppb | | 94 |
| 48) Dibromomethane | 6.75 | 93 | 696631 | 82.58189 ppb | | 96 |
| 49) 2-Chloroethyl vinyl ether | 7.33 | 106 | 84485 | 273.90021 ppb | # | 75 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 926371 | 95.40531 ppb | | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 993435 | 92.63659 ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 2038861 | 103.43768 ppb | | 99 |
| 53) Toluene | 7.78 | 91 | 5103126 | 104.68041 ppb | | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 1713875 | 100.86171 ppb | | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 864510 | 91.05635 ppb | | 99 |
| 56) 2-Hexanone | 8.51 | 43 | 615190 | 101.38540 ppb | | 91 |
| 59) 1,2-EDB | 8.69 | 107 | 1017890 | 89.87411 ppb | | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 1334542 | 91.23146 ppb | | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 1594620 | 118.85852 ppb | | 93 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 1323568 | 89.70172 ppb | | 96 |
| 63) m&p-Xylene | 9.46 | 106 | 4453802 | 224.74159 ppb | | 98 |
| 64) o-Xylene | 9.85 | 106 | 2168682 | 117.88215 ppb | | 99 |
| 65) Styrene | 9.86 | 104 | 3847792 | 103.89588 ppb | | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 1782252 | 95.35106 ppb | | 100 |
| 68) Dibromochloromethane | 8.60 | 129 | 1286102 | 91.69225 ppb | | 95 |
| 69) Chlorobenzene | 9.21 | 112 | 3410691 | 94.71871 ppb | | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 5750739 | 111.73566 ppb | | 98 |
| 71) Bromoform | 10.02 | 173 | 934447 | 97.23880 ppb | | 100 |
| 73) Isopropylbenzene | 10.23 | 105 | 5460513 | 106.47995 ppb | | 98 |
| 74) 1,1,2,2-Tetrachloroethane | 10.53 | 83 | 1323609 | 99.40685 ppb | | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 392614 | 99.13797 ppb | | 94 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 345659 | 94.61546 ppb | | 95 |
| 77) Bromobenzene | 10.50 | 156 | 1600206 | 90.04505 ppb | | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 6730811 | 99.40618 ppb | | 100 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 5679362 | 109.62103 ppb | | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 4039236 | 99.20003 ppb | | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 4976345 | 106.21675 ppb | | 100 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 1060864 | 99.35589 ppb | | 96 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 4135295 | 110.19363 ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 5078507 | 111.60566 ppb | | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 6141675 | 112.94220 ppb | | 100 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 5287563 | 114.37350 ppb | | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 1843443 | 100.22155 ppb | | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 3049242 | 94.02138 ppb | | 99 |
| 89) 1,4-DCB | 11.53 | 146 | 3091058 | 86.68144 ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 5152052 | 113.27656 ppb | | 96 |
| 91) 1,2-DCB | 11.89 | 146 | 2925082 | 93.23002 ppb | | 100 |
| 92) Hexachloroethane | 12.14 | 117 | 1078290 | 88.60232 ppb | | 98 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 275062 | 93.45627 ppb | | 95 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 2231434 | 118.89406 ppb | | 98 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 1190636 | 99.87726 ppb | | 95 |
| 96) Naphthalene | 13.72 | 128 | 2842624 | 137.48932 ppb | | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 1381888 | 116.28798 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

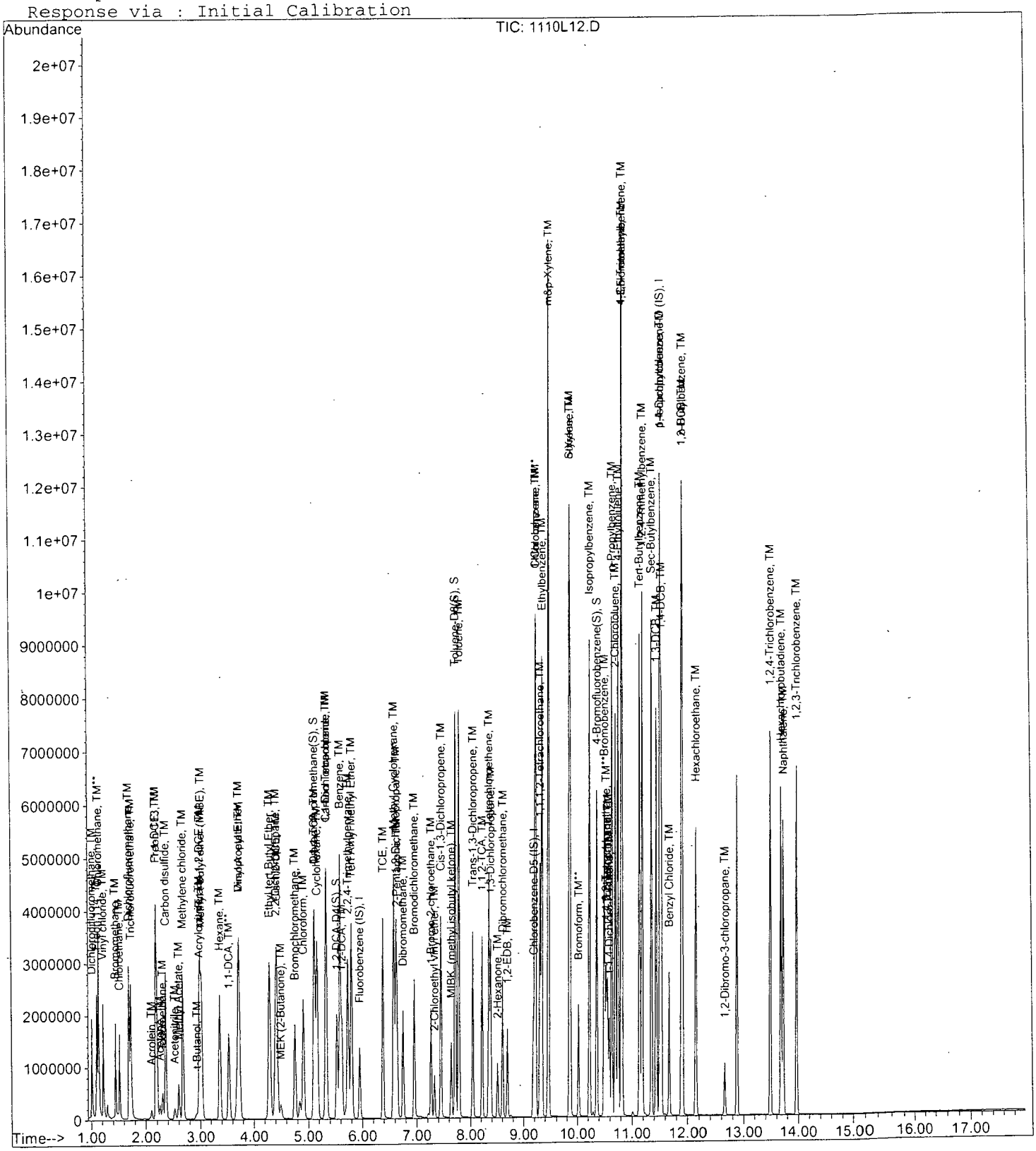
Data File : M:\LOKI\DATA\141110\1110L12.D
Acq On : 10 Nov 14 21:22
Sample : 100ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

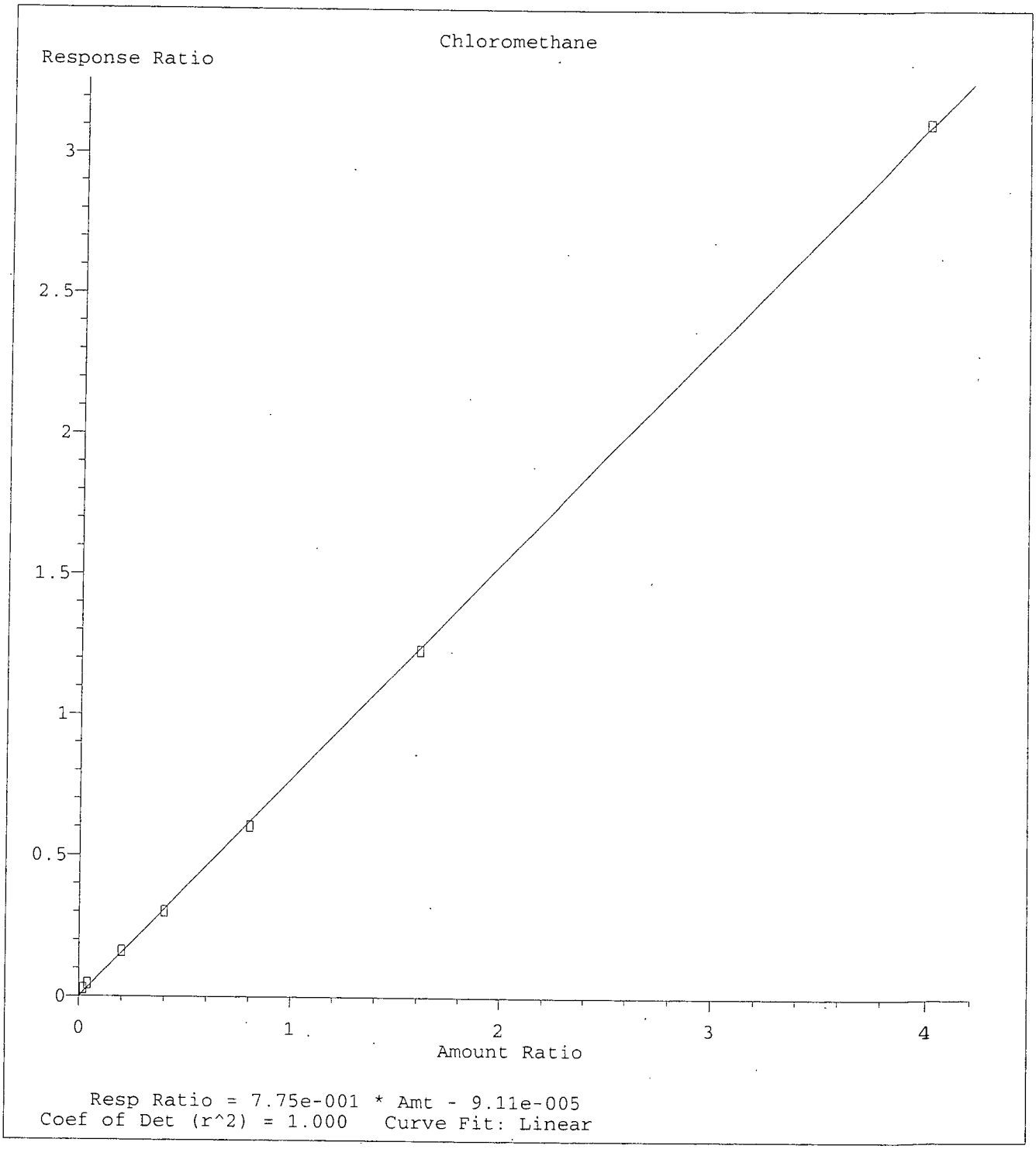
Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

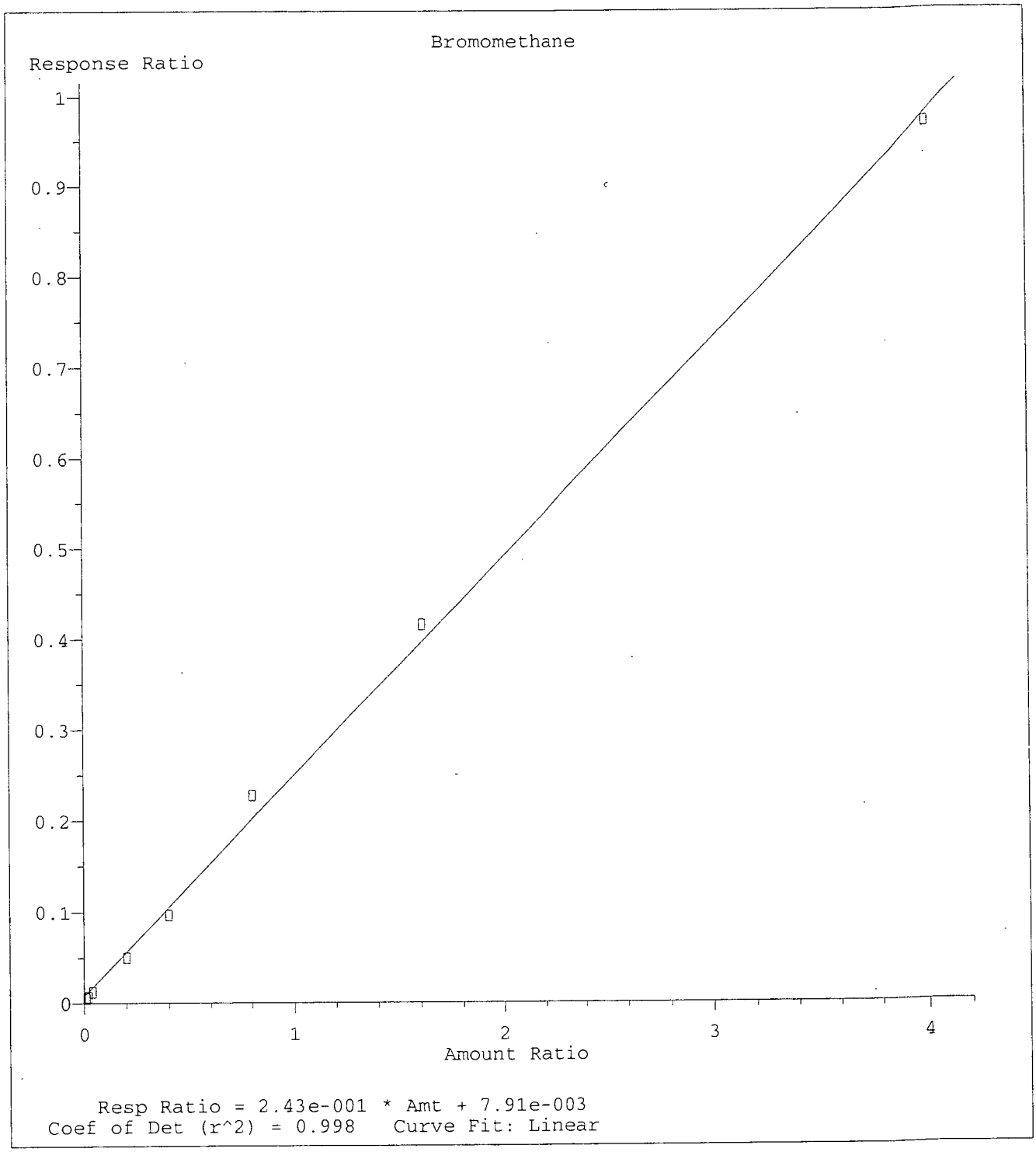
Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration

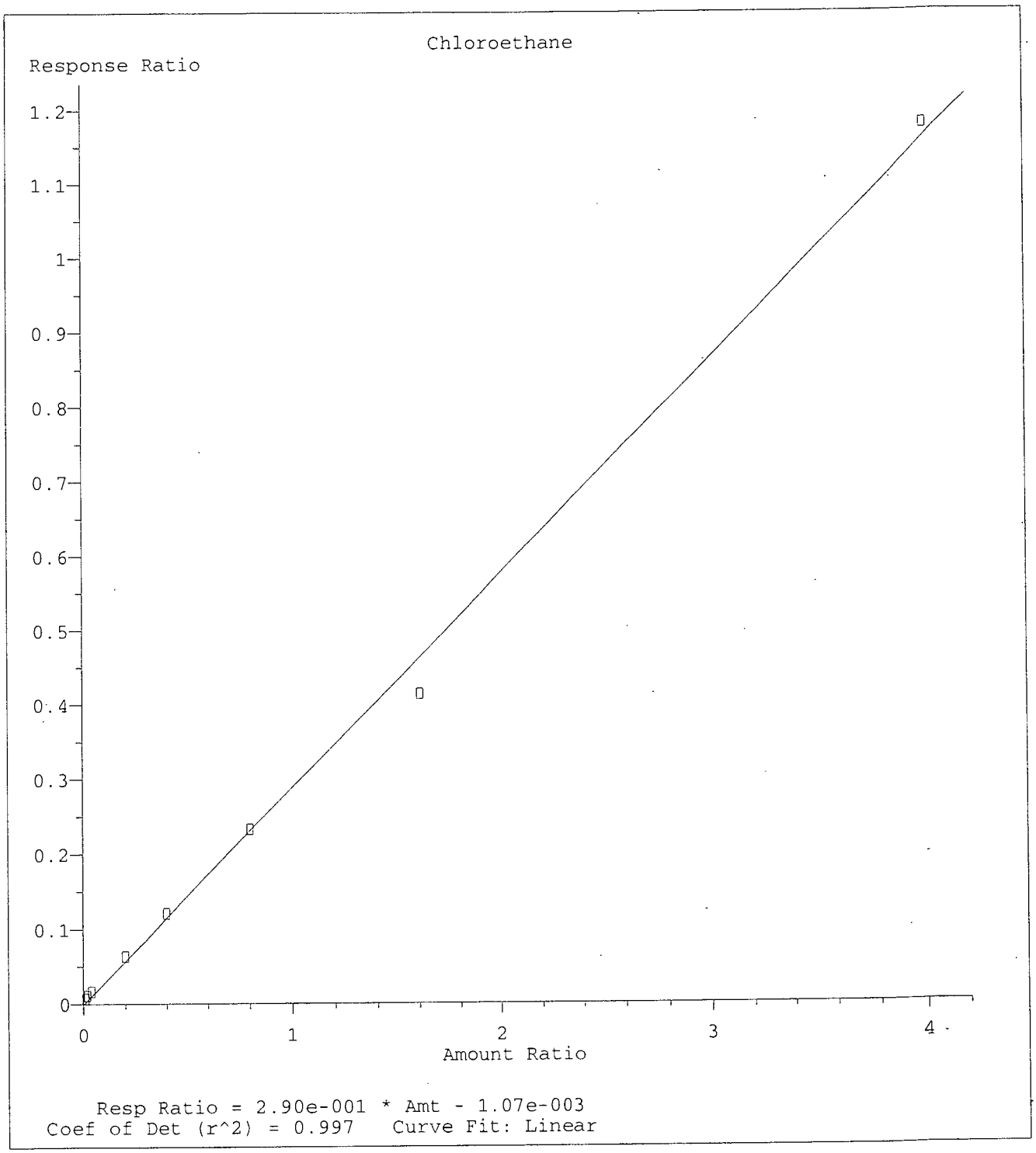




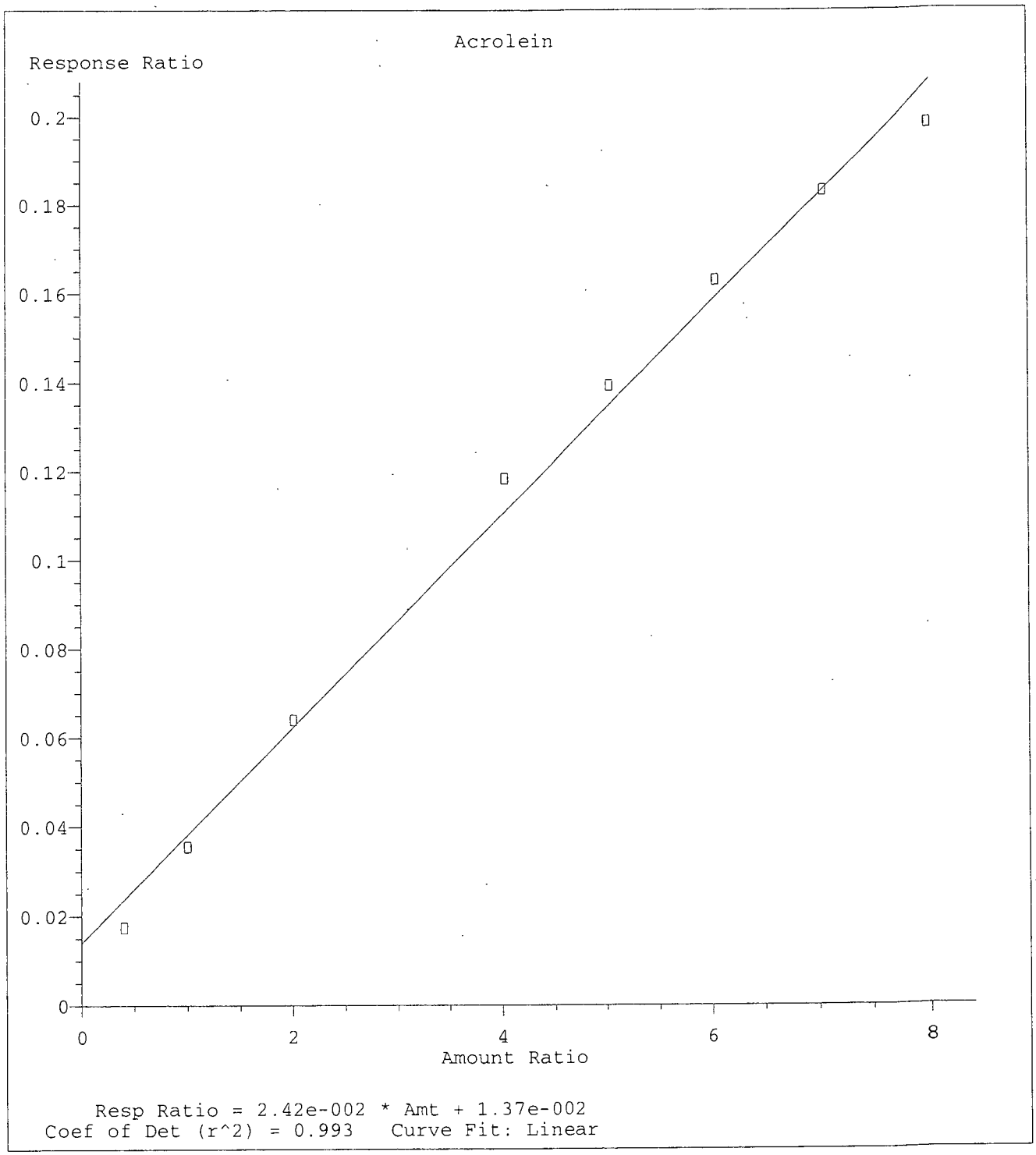

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



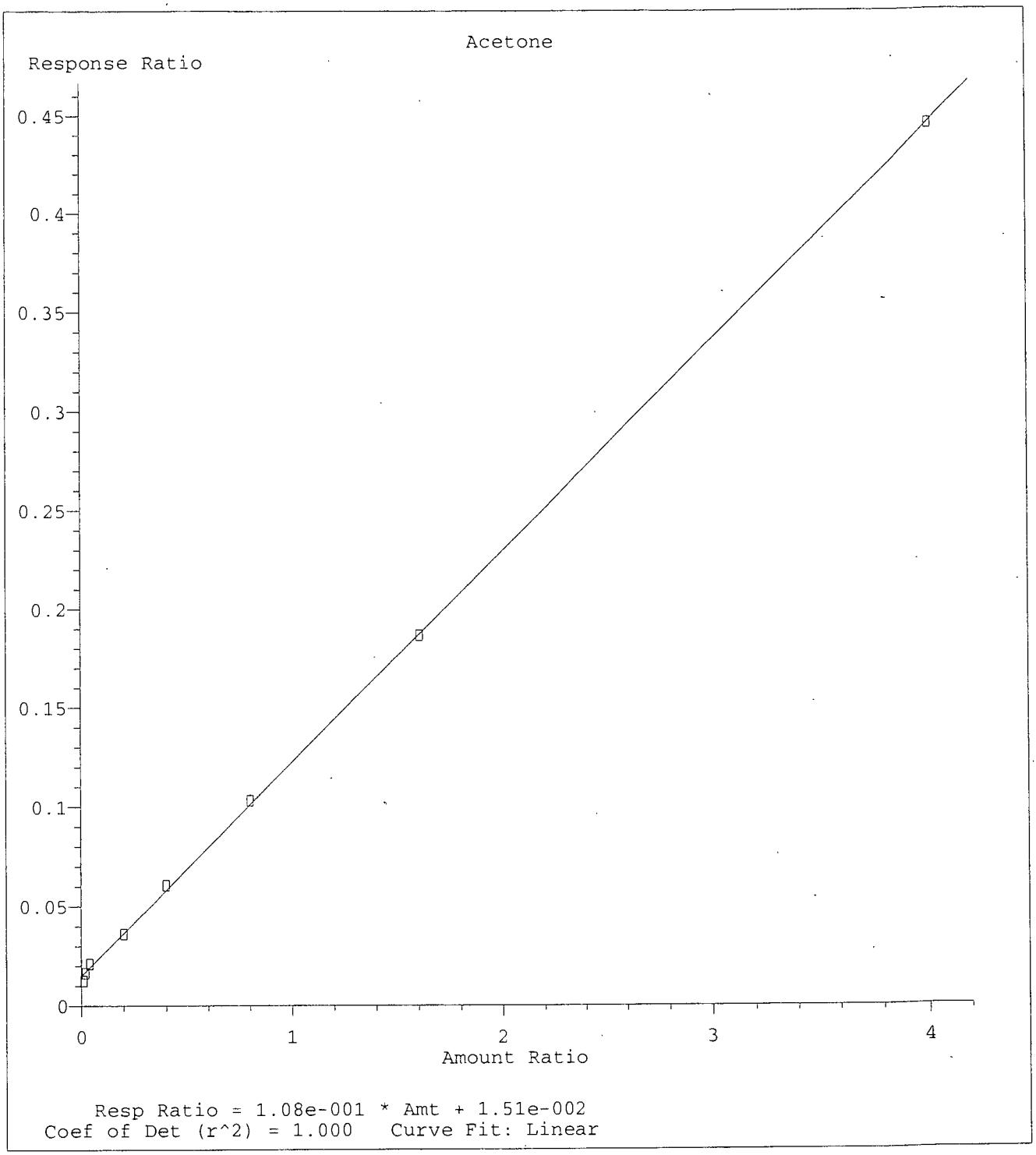

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



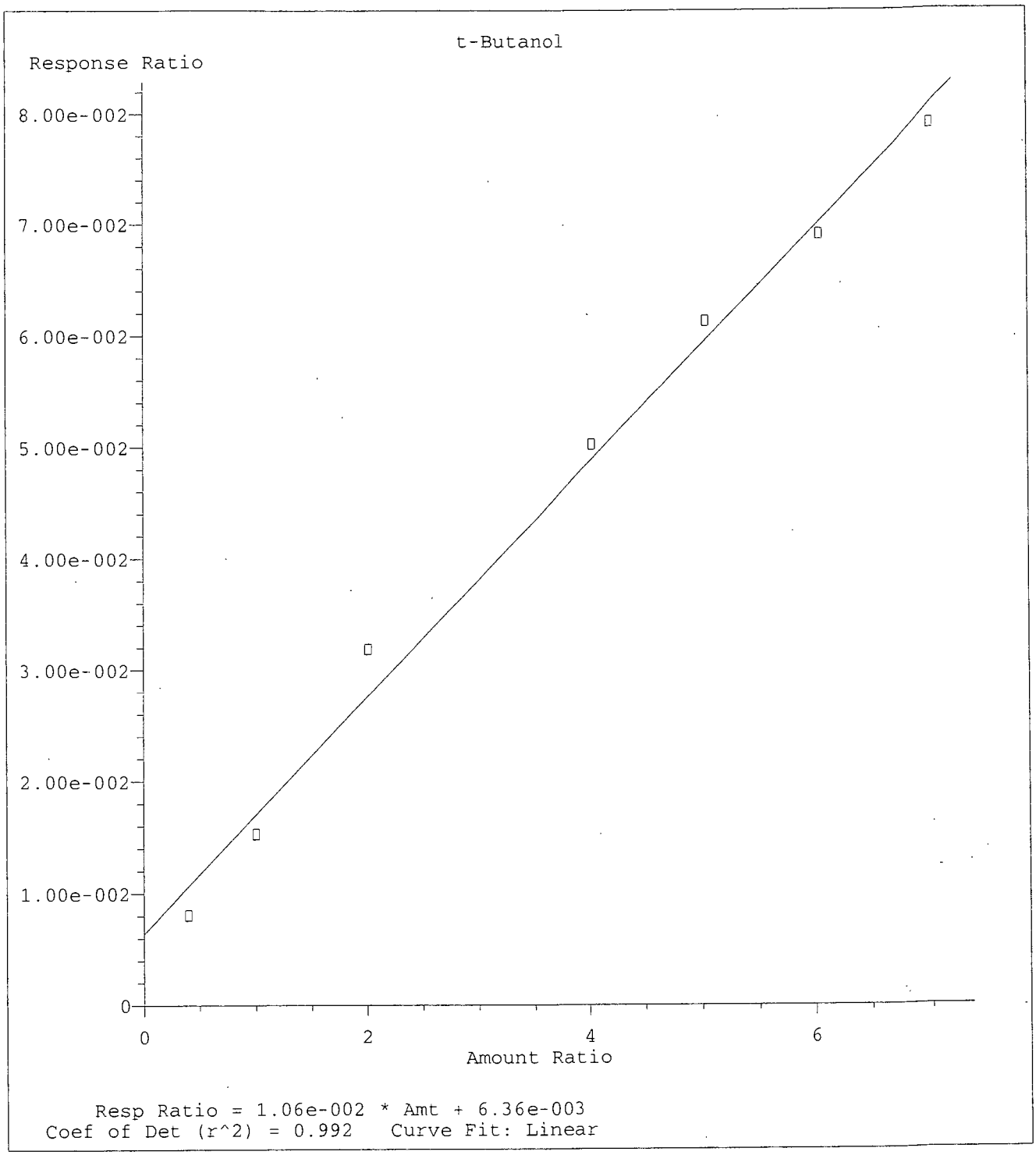

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



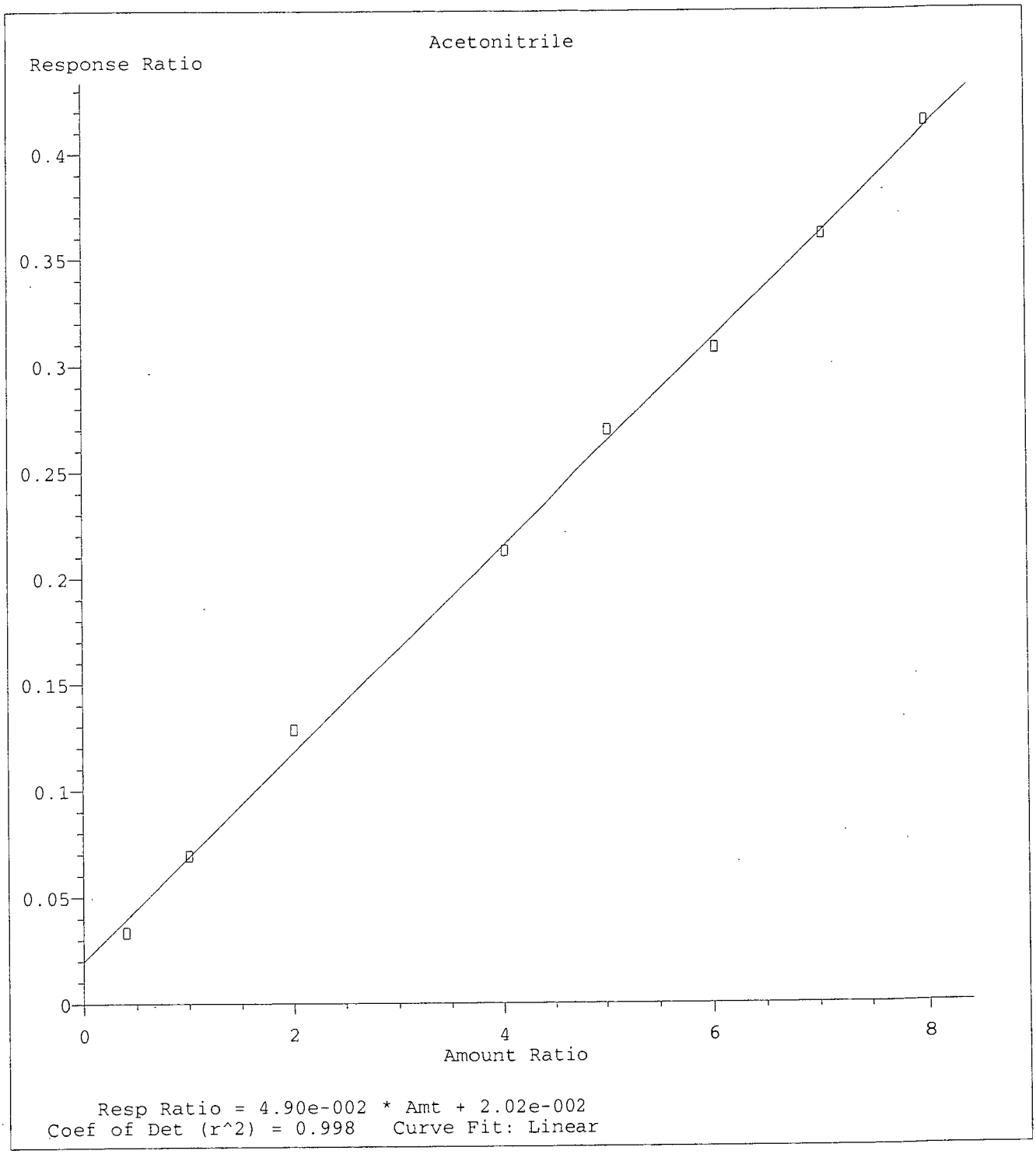

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



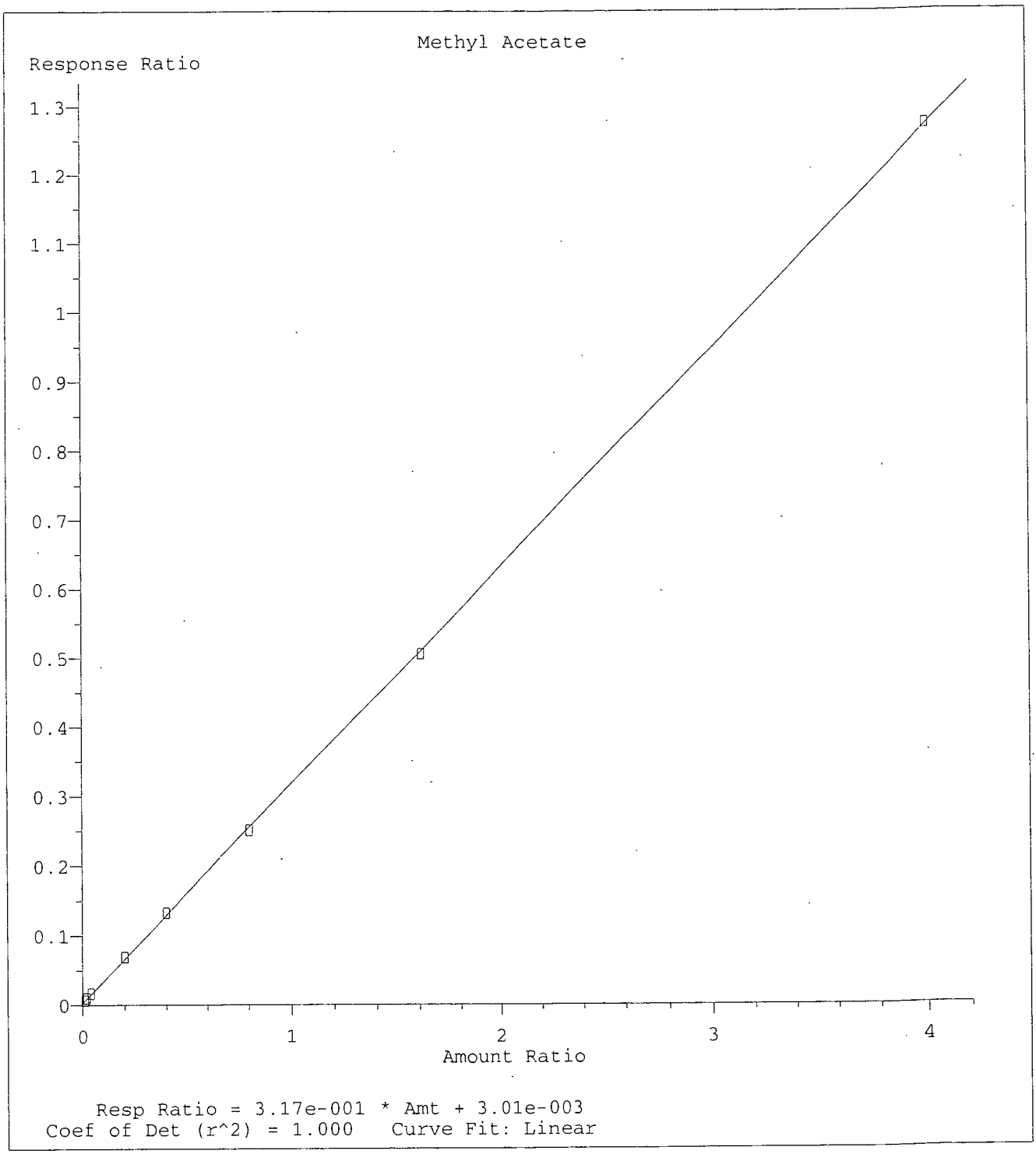

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



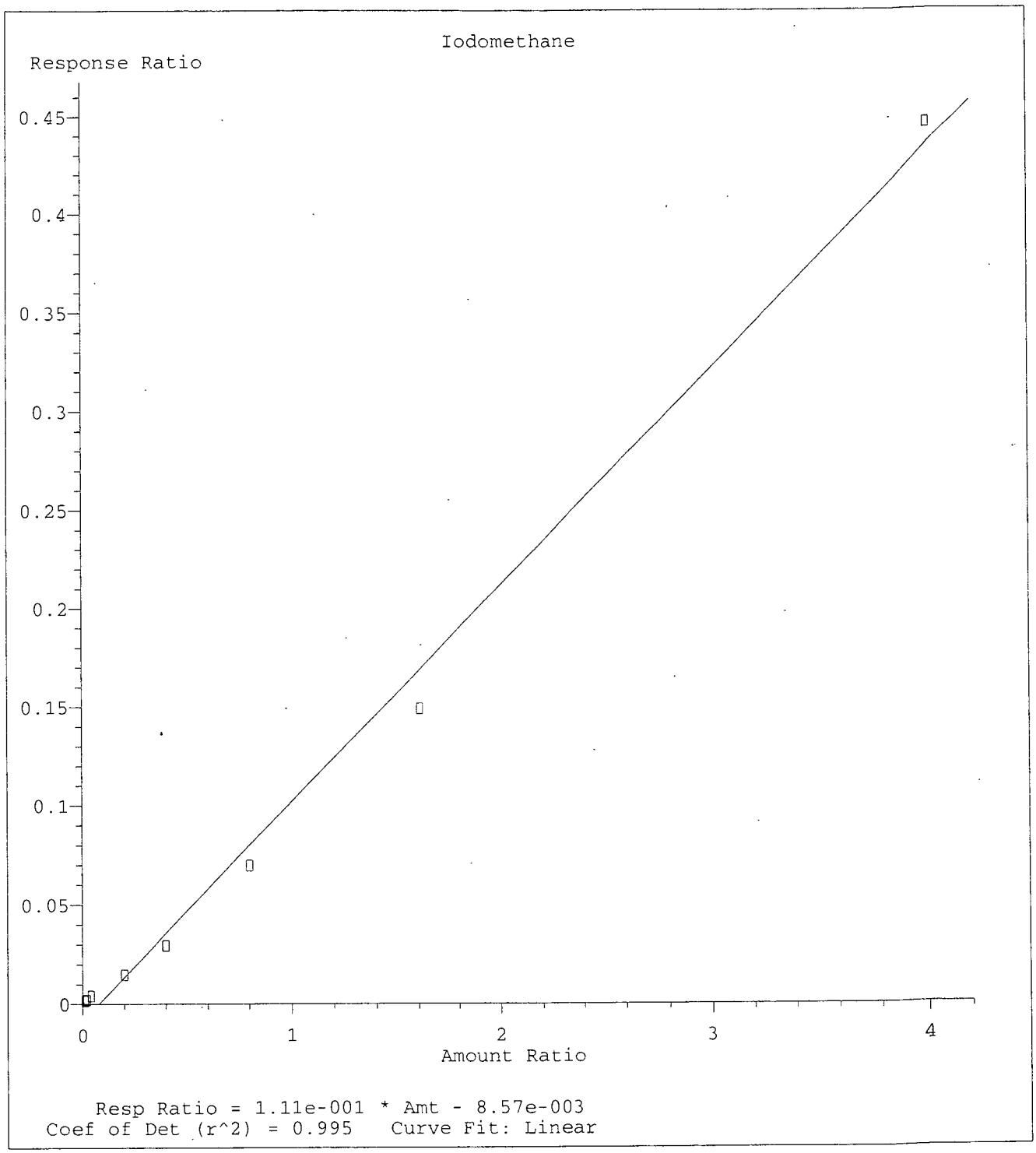

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



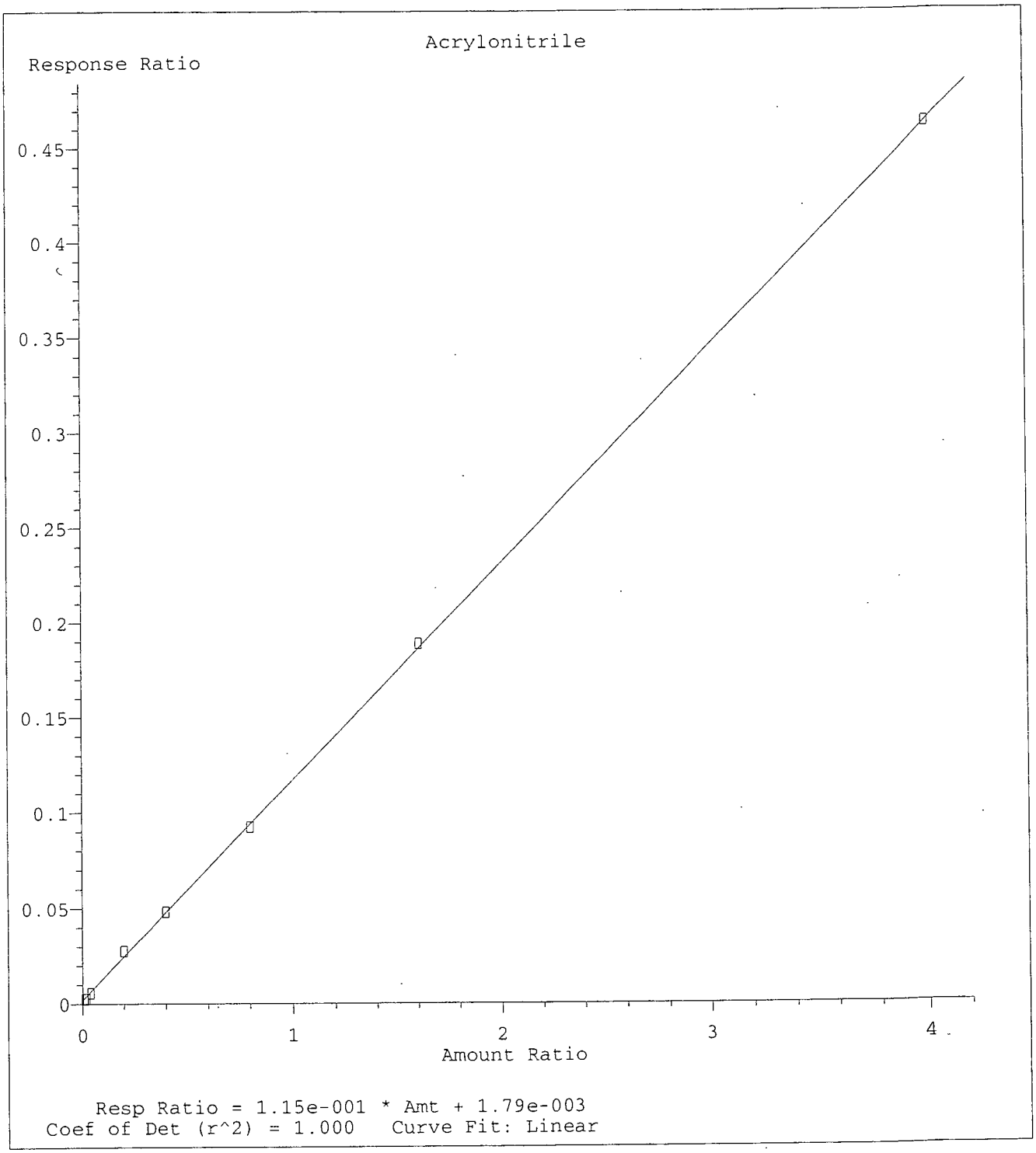

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



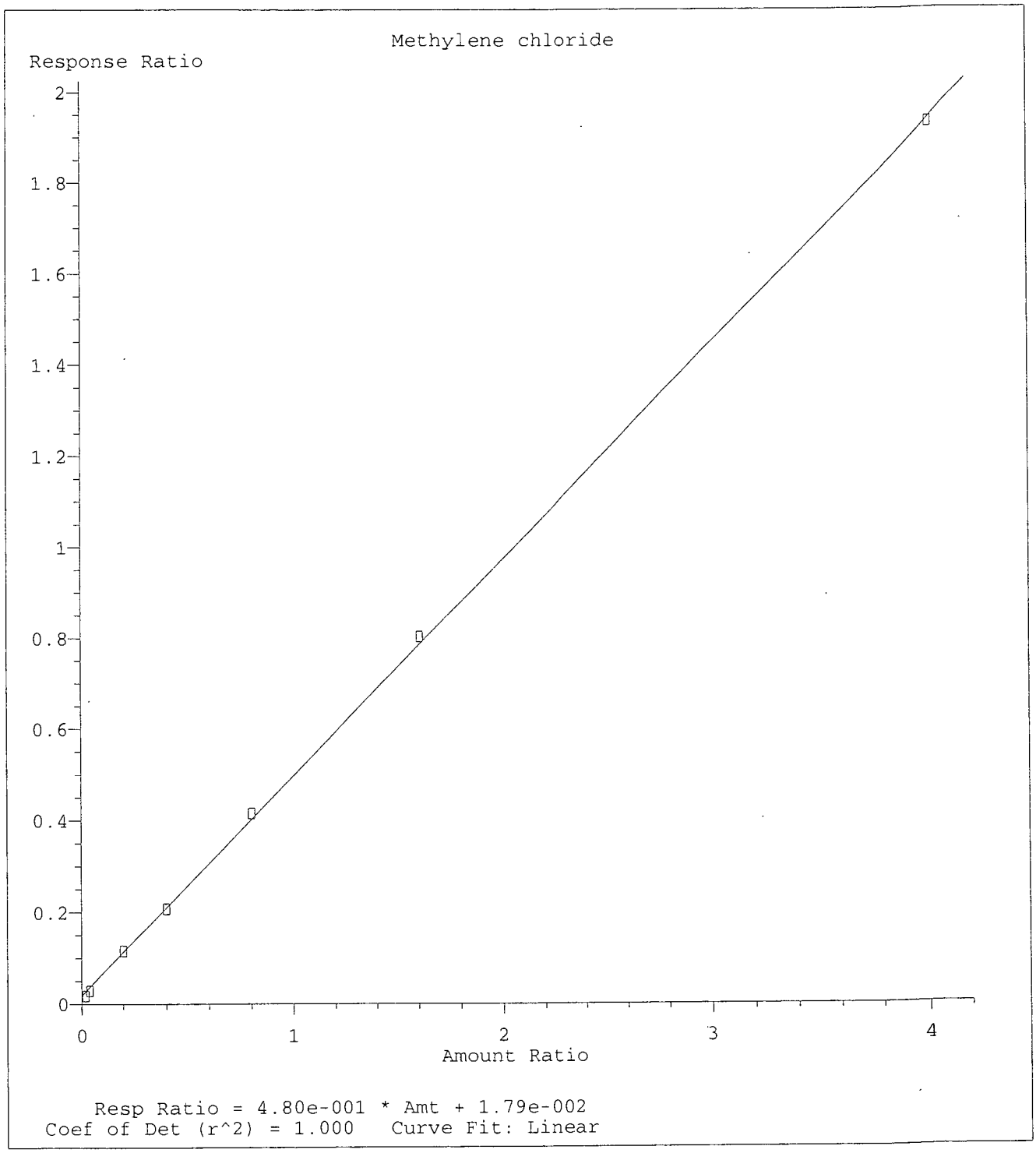

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



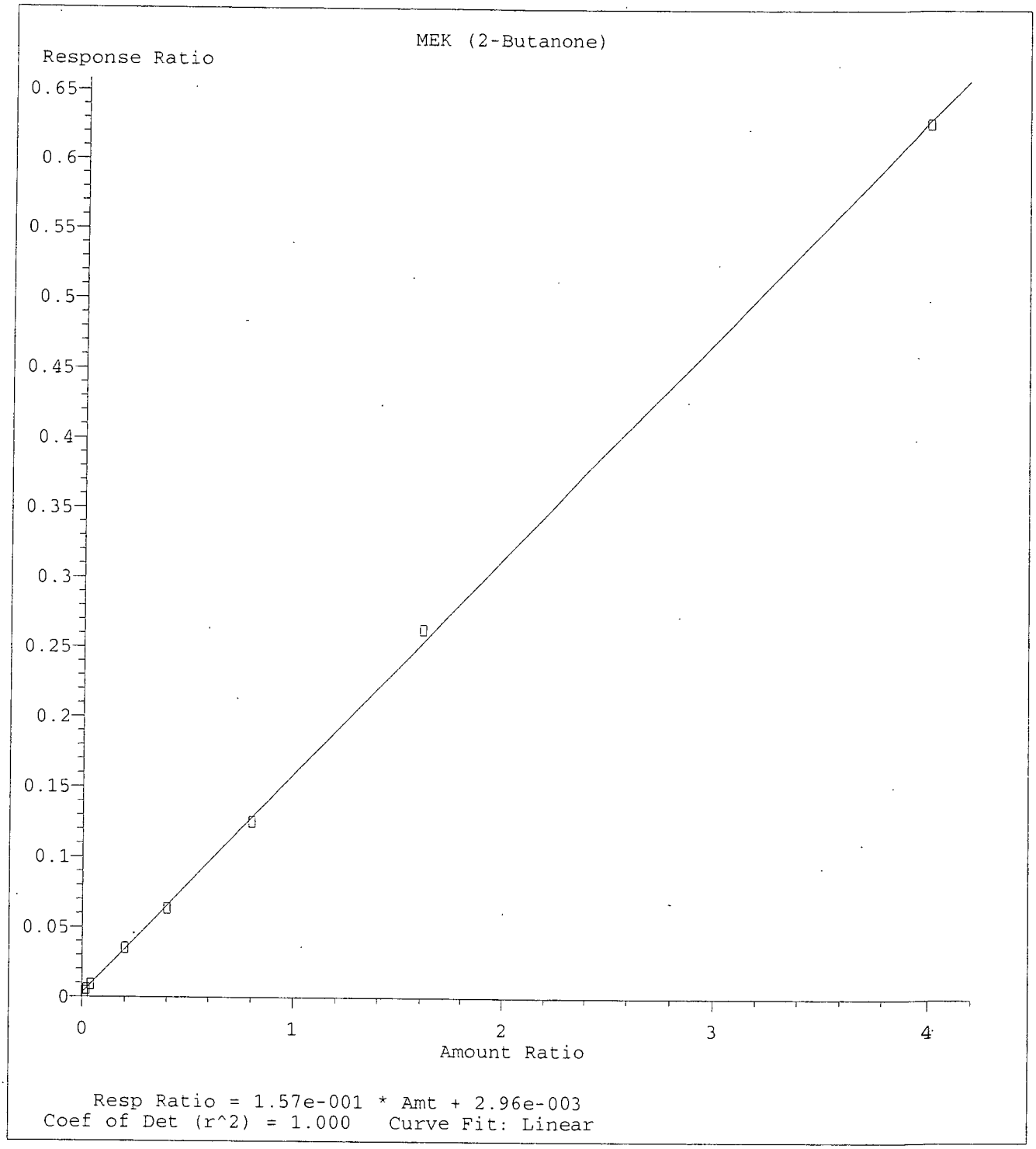

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



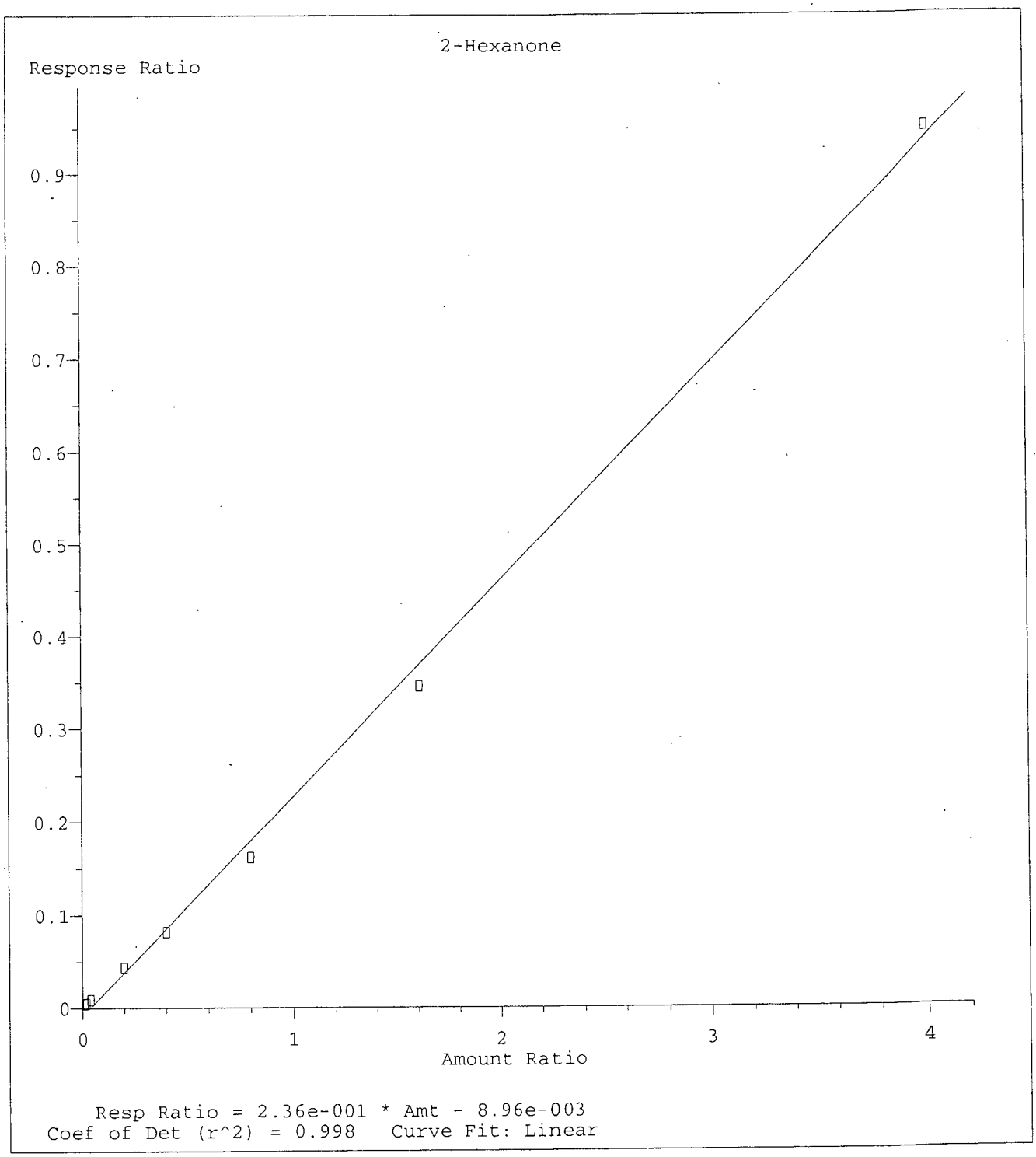

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



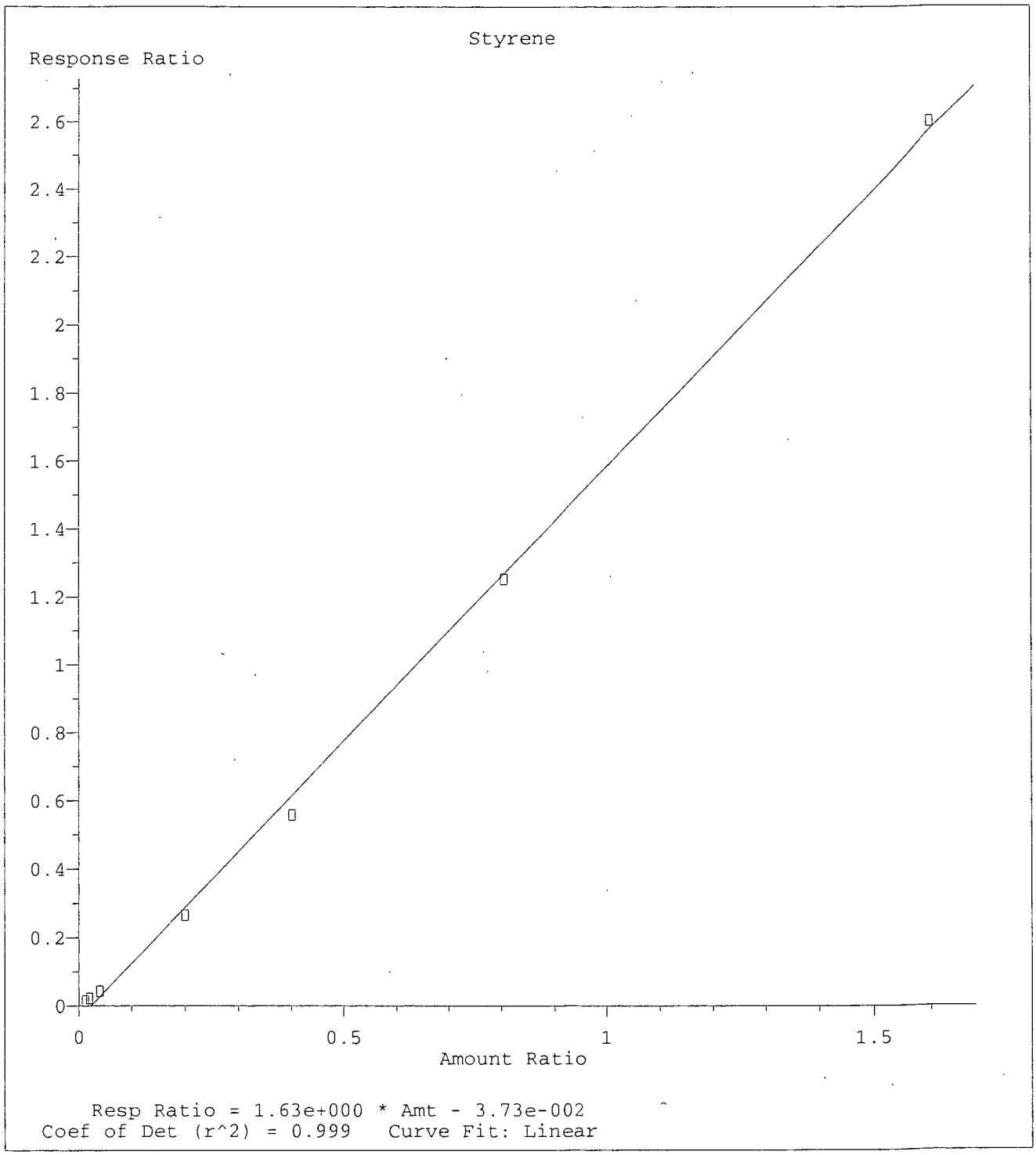

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



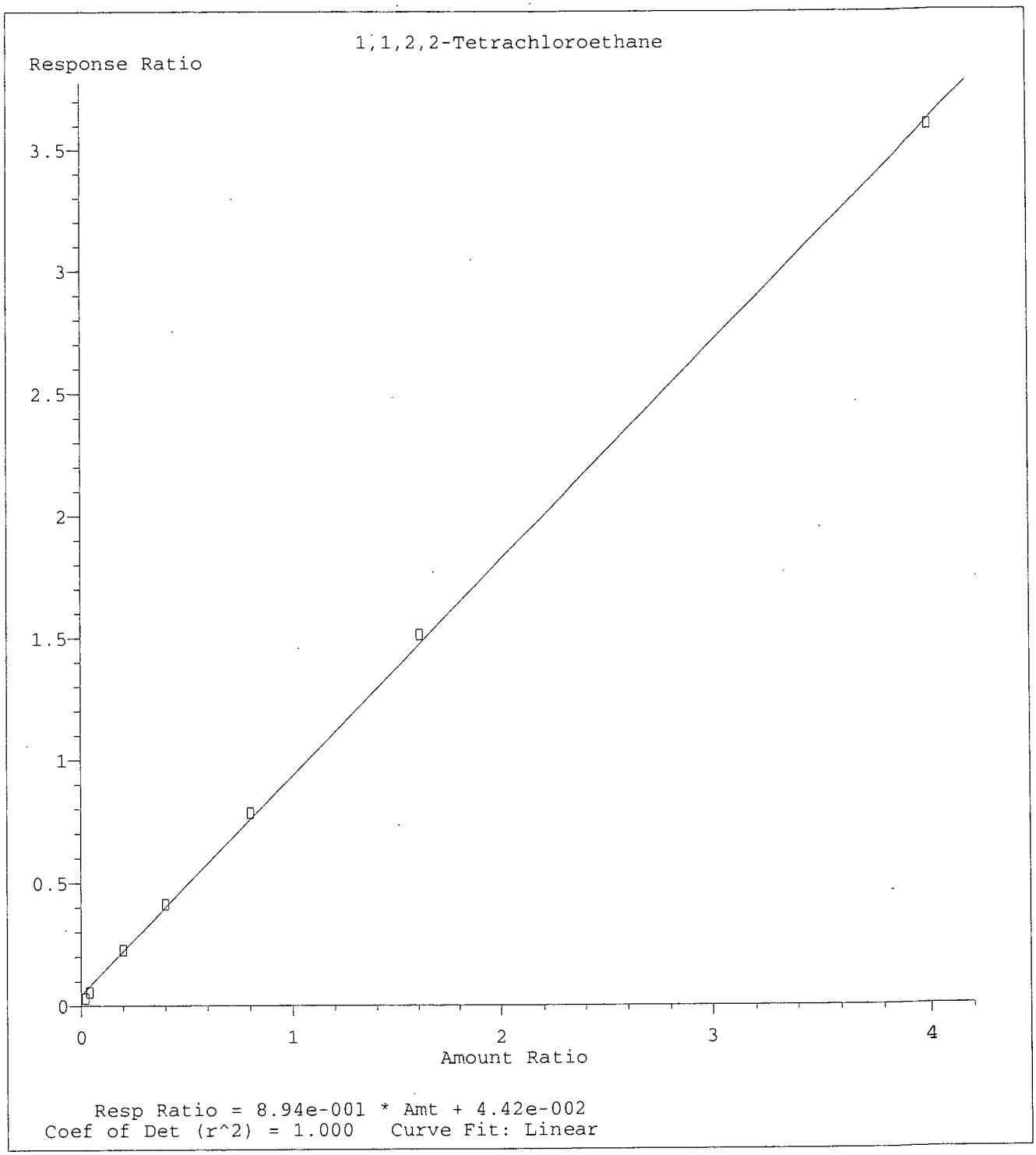

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Thu Nov 13 13:35:08 2014



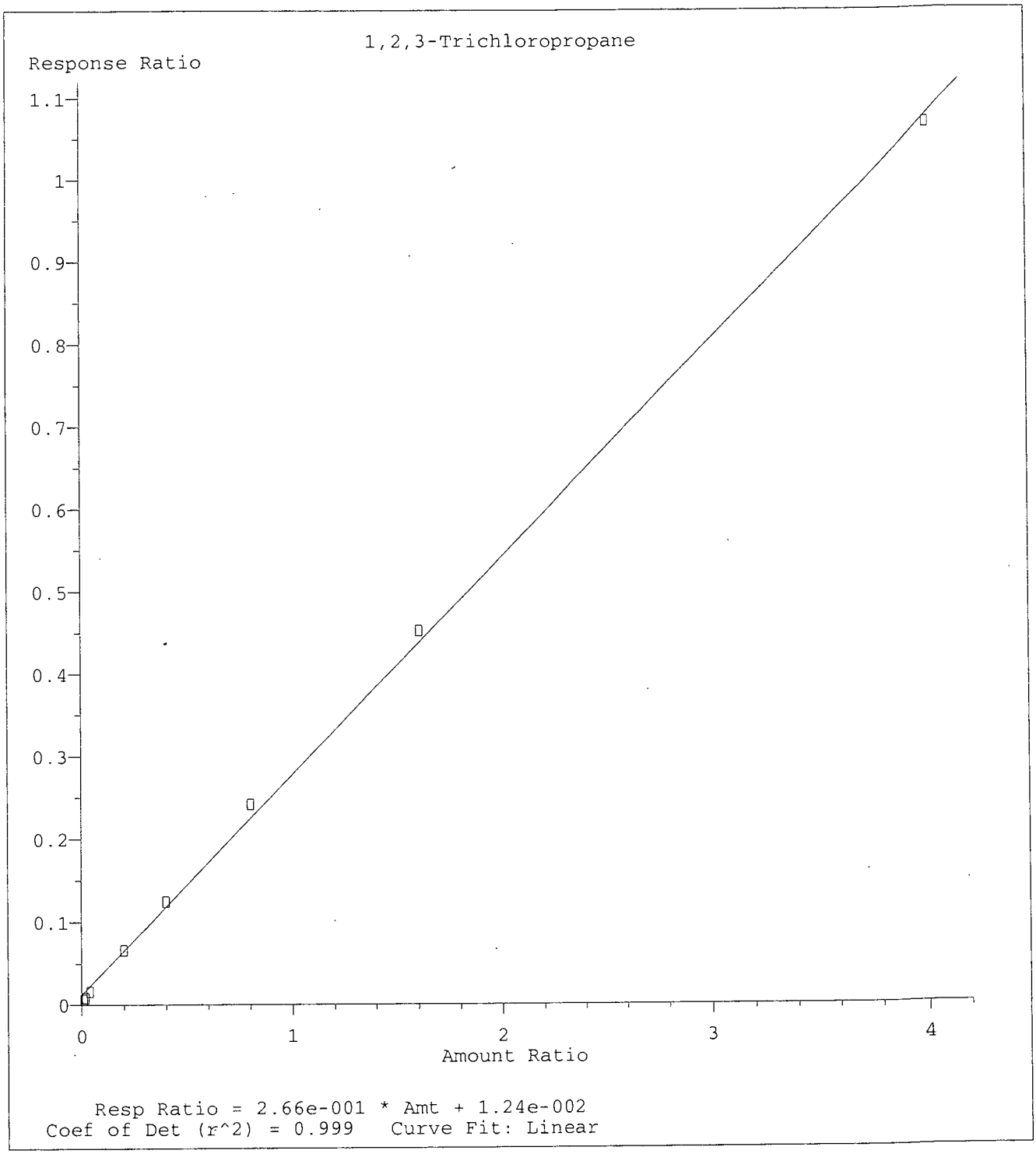

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014



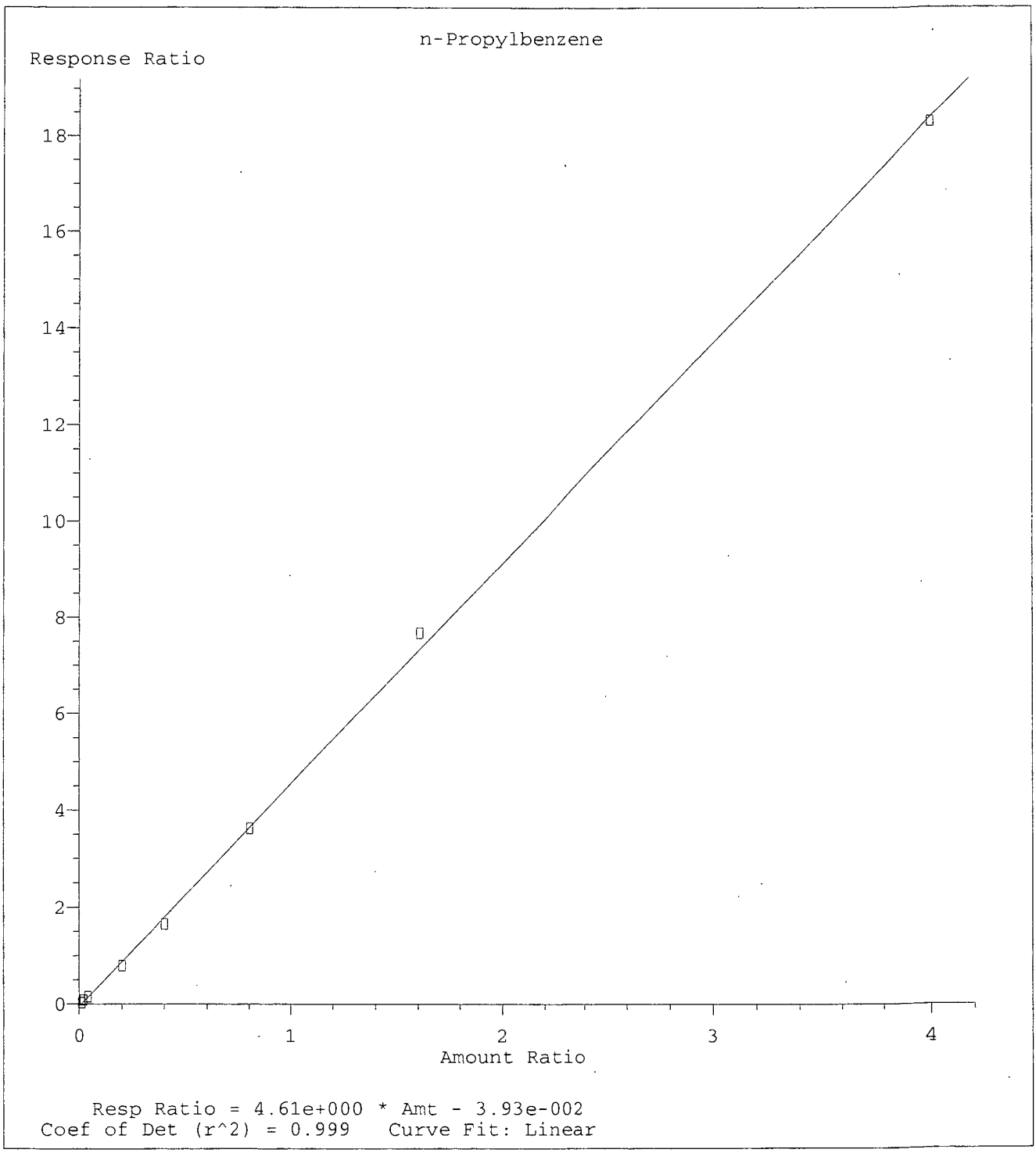

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014



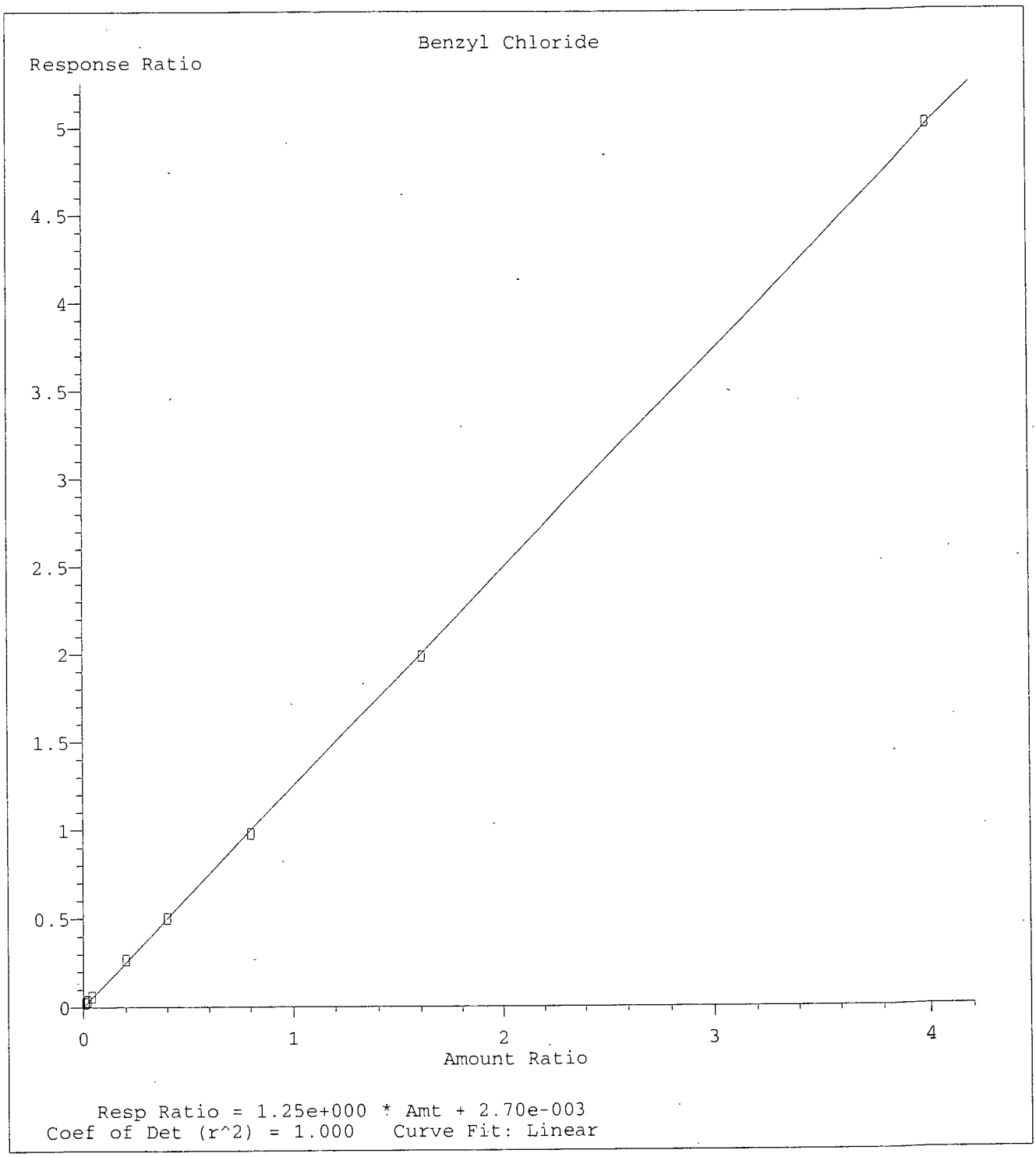

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014



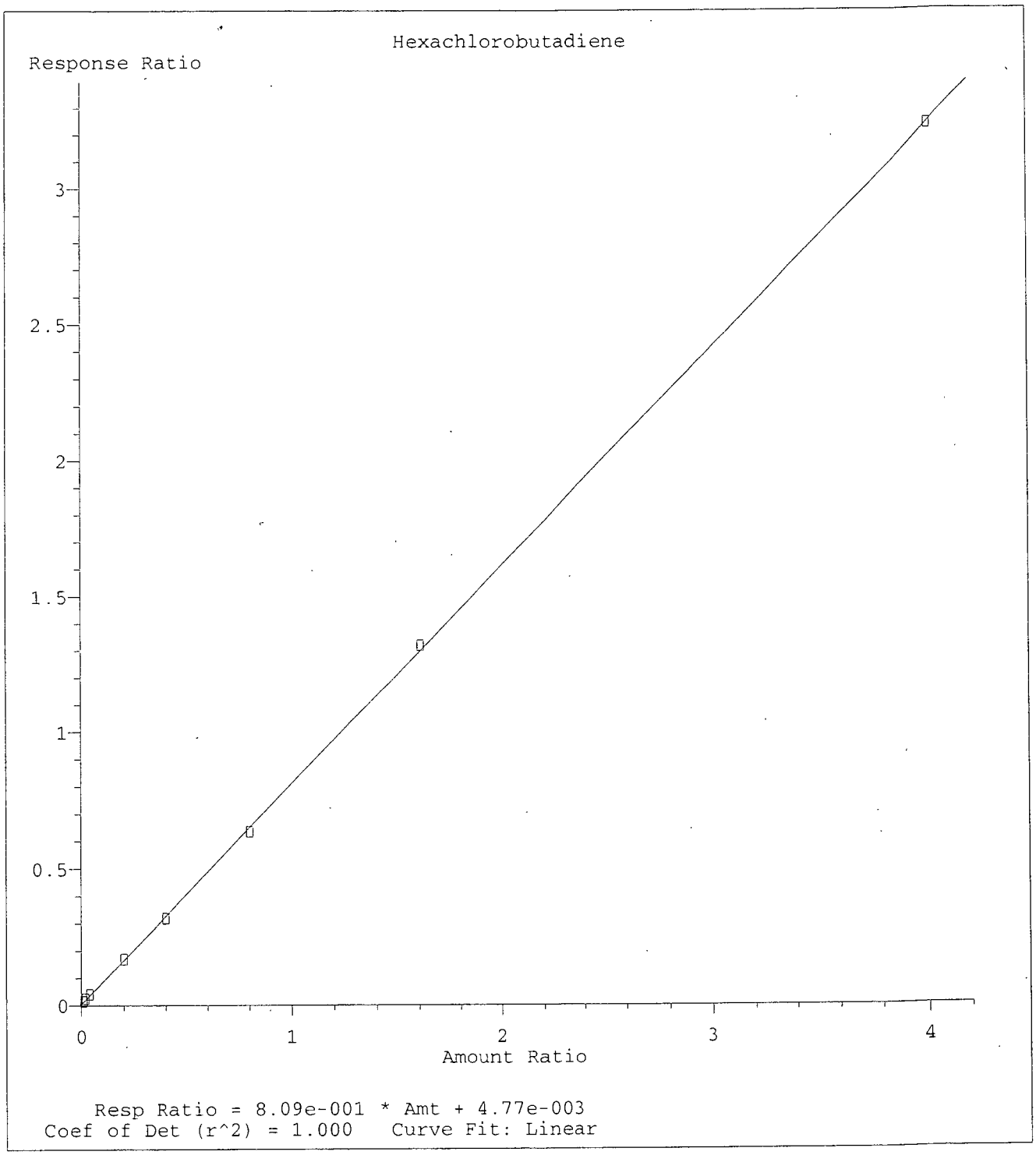

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014



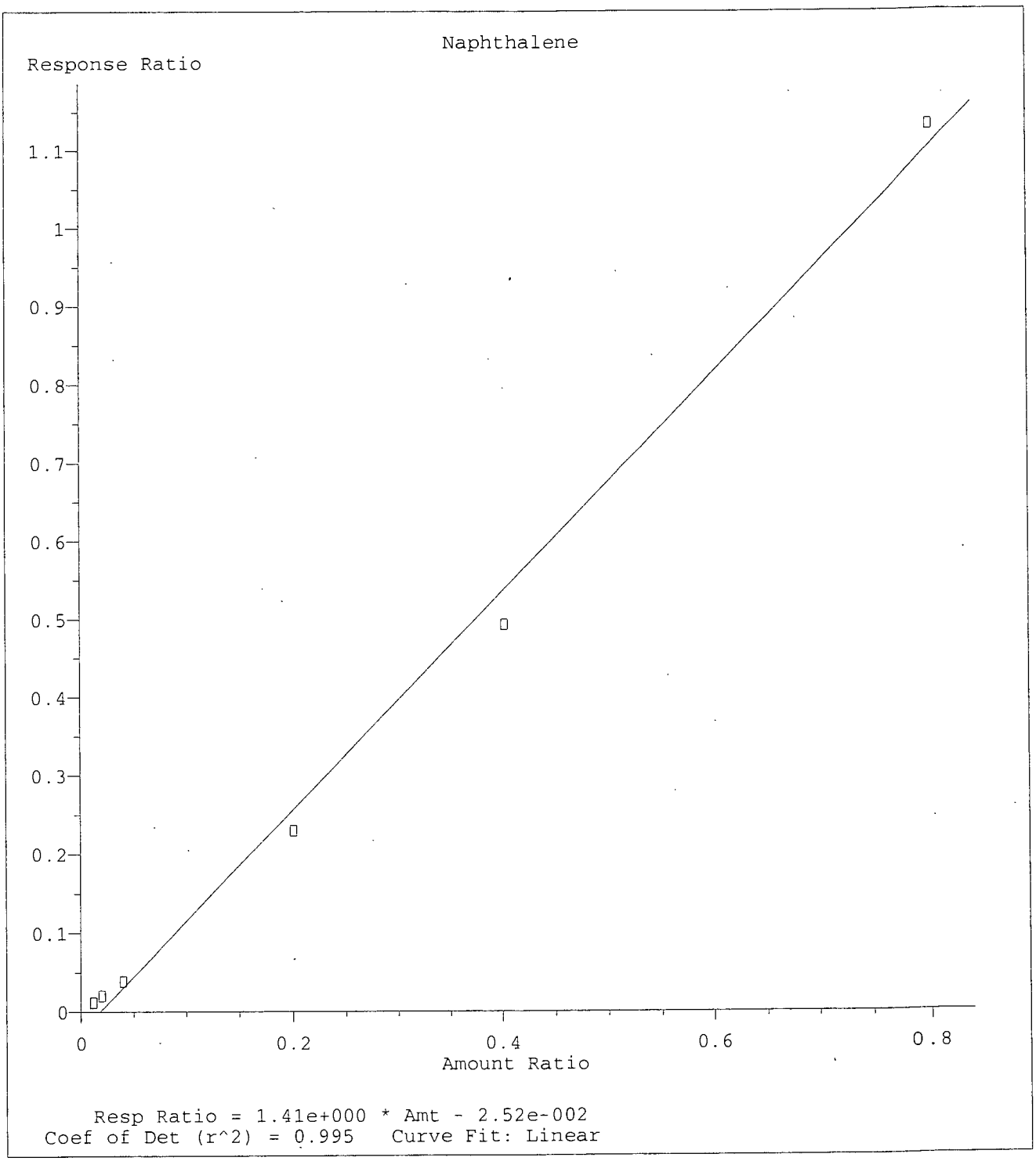

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014




Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014




Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014



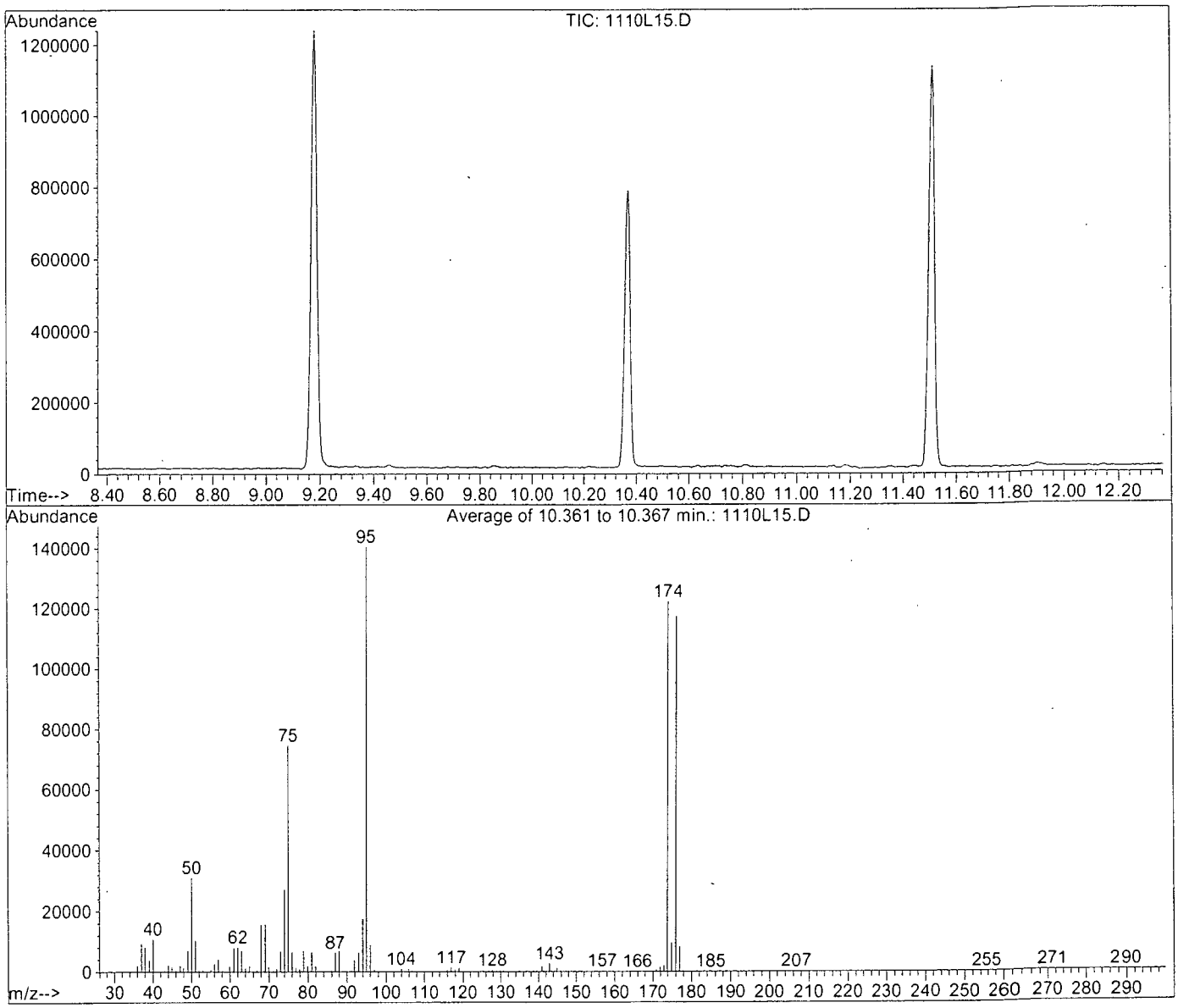

Method Name: M:\LOKI\DATA\141110\LALLW.M
Calibration Table Last Updated: Mon Nov 17 11:06:38 2014

BFB

Data File : M:\LOKI\DATA\141110\1110L15.D
Acq On : 10 Nov 14 22:46
Sample : 25ug/mL BFB Std 09-30-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 14
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B




Spectrum Information: Average of 10.361 to 10.367 min.

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 22.0 | 30947 | PASS |
| 75 | 95 | 30 | 60 | 53.0 | 74491 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 140485 | PASS |
| 96 | 95 | 5 | 9 | 6.2 | 8652 | PASS |
| 173 | 174 | 0.00 | 2 | 1.6 | 1903 | PASS |
| 174 | 95 | 50 | 100 | 87.0 | 122203 | PASS |
| 175 | 174 | 5 | 9 | 7.6 | 9291 | PASS |
| 176 | 174 | 95 | 101 | 96.0 | 117293 | PASS |
| 177 | 176 | 5 | 9 | 6.9 | 8087 | PASS |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 11/10/14
Instrument: Loki
Initial Cal. Date: 11/10/14
Data File: 1110L16.D

| | | Compound | MEAN | CCRF | %D | | %Drift | |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | | |
| 2 | TM | Dichlorodifluoromethane | 0.4271 | 0.4574 | 7.1 | TM | | |
| 3 | TM | Freon 114 | 0.4005 | 0.4583 | 14 | TM | | |
| 4 | TM**L | Chloromethane | 0.8958 | 0.8972 | 0.15 | TM**L | 16 | |
| 5 | TM* | Vinyl chloride | 0.5913 | 0.6346 | 7.3 | TM* | | |
| 6 | TML | Bromomethane | 0.2945 | 0.2768 | 6.0 | TML | 5.8 | |
| 7 | TML | Chloroethane | 0.3766 | 0.3380 | 10 | TML | 17 | |
| 8 | TM | Dichlorofluoromethane | 1.042 | 1.140 | 9.4 | TM | | |
| 9 | TM | Trichlorofluoromethane | 0.7358 | 0.7440 | 1.1 | TM | | |
| 10 | TML | Acrolein | 0.0308 | 0.0290 | 6.0 | TML | 8.3 | |
| 11 | TML | Acetone | 0.3852 | 0.1652 | 57 | TML | 19 | |
| 12 | TM | Freon-113 | 0.4314 | 0.4429 | 2.7 | TM | | |
| 13 | TM* | 1,1-DCE | 0.7168 | 0.7729 | 7.8 | TM* | | |
| 14 | TML | t-Butanol | 0.0141 | 0.0117 | 17 | TML | 2.1 | |
| 15 | TML | Acetonitrile | 0.0598 | 0.0637 | 6.5 | TML | 22 | nt |
| 16 | TML | Methyl Acetate | 0.3848 | 0.3991 | 3.7 | TML | 24 | nt |
| 17 | TML | Iodomethane | 0.0966 | 0.0910 | 5.7 | TML | 1.4 | |
| 18 | TML | Acrylonitrile | 0.1363 | 0.1404 | 3.1 | TML | 18 | |
| 19 | TML | Methylene chloride | 0.5985 | 0.5842 | 2.4 | TML | 12 | |
| 20 | TM | Carbon disulfide | 1.498 | 1.610 | 7.5 | TM | | |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.150 | 1.070 | 6.9 | TM | | |
| 22 | TM | Trans-1,2-DCE | 0.6600 | 0.6865 | 4.0 | TM | | |
| 23 | TM | Diisopropyl Ether | 1.420 | 1.698 | 20 | TM | | |
| 24 | TM** | 1,1-DCA | 0.9086 | 1.020 | 12 | TM** | | |
| 25 | TM | Hexane | 0.4200 | 0.4415 | 5.1 | TM | | |
| 26 | TM | Vinyl Acetate | 0.3139 | 0.3639 | 16 | TM | | |
| 27 | TM | Ethyl tert Butyl Ether | 1.194 | 1.295 | 8.4 | TM | | |
| 28 | TML | MEK (2-Butanone) | 0.2043 | 0.2087 | 2.1 | TML | 28 | * |
| 29 | TM | Cis-1,2-DCE | 0.5353 | 0.5624 | 5.1 | TM | | |
| 30 | TM | 2,2-Dichloropropane | 0.2460 | 0.2461 | 0.06 | TM | | |
| 31 | TM* | Chloroform | 0.9126 | 1.010 | 11 | TM* | | |
| 32 | TM | Bromochloromethane | 0.2741 | 0.2799 | 2.1 | TM | | |
| 33 | S | Dibromofluoromethane(S) | 0.5694 | 0.5863 | 3.0 | S | | |
| 34 | TM | 1,1,1-TCA | 0.7696 | 0.8278 | 7.6 | TM | | |
| 35 | TM | Cyclohexane | 0.3531 | 0.4355 | 23 | TM | | nt |
| 36 | TM | 1,1-Dichloropropene | 0.5796 | 0.6072 | 4.8 | TM | | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.063 | 1.166 | 9.7 | TM | | |
| 38 | S | 1,2-DCA-D4(S) | 0.6381 | 0.6688 | 4.8 | S | | |
| 39 | TM | Carbon Tetrachloride | 0.7039 | 0.6724 | 4.5 | TM | | |
| 40 | TM | Tert Amyl Methyl Ether | 1.071 | 1.063 | 0.82 | TM | | |
| | | Average | | | 8.3 | | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/10/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1110L16.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TM | 1,2-DCA | 0.6774 | 0.6895 | 1.8 | TM | |
| 42 | TM | Benzene | 1.873 | 1.942 | 3.7 | TM | |
| 43 | TM | TCE | 0.4890 | 0.4722 | 3.5 | TM | |
| 44 | TM | 2-Pentanone | 0.3009 | 0.3182 | 5.8 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5483 | 0.5789 | 5.6 | TM* | |
| 46 | TM | Bromodichloromethane | 0.7079 | 0.6979 | 1.4 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5665 | 0.5523 | 2.5 | TM | |
| 48 | TM | Dibromomethane | 0.3253 | 0.3004 | 7.6 | TM | |
| 49 | TML | 2-Chloroethyl vinyl ether | 0.0119 | 0.0134 | 13 | TML | 13 |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3744 | 0.3782 | 1.0 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4135 | 0.4741 | 15 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7600 | 0.7846 | 3.2 | TM | |
| 53 | TM* | Toluene | 1.880 | 2.241 | 19 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6552 | 0.7034 | 7.4 | TM | |
| 55 | TM | 1,1,2-TCA | 0.3661 | 0.4048 | 11 | TM | |
| 56 | TML | 2-Hexanone | 0.2338 | 0.2337 | 0.08 | TML | 8.4 |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.982 | 2.370 | 20 | S | |
| 59 | TM | 1,2-EDB | 0.4964 | 0.5271 | 6.2 | TM | |
| 60 | TM | Tetrachloroethene | 0.6412 | 0.6936 | 8.2 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5880 | 0.6117 | 4.0 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6467 | 0.6069 | 6.2 | TM | |
| 63 | TM | m&p-Xylene | 0.8686 | 0.9151 | 5.4 | TM | |
| 64 | TM | o-Xylene | 0.8064 | 0.8413 | 4.3 | TM | |
| 65 | TML | Styrene | 1.322 | 1.437 | 8.7 | TML | 6.3 |
| 66 | S | 4-Bromofluorobenzene(S) | 0.7314 | 0.7365 | 0.71 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8193 | 0.9666 | 18 | TM | |
| 68 | TM | Dibromochloromethane | 0.6148 | 0.6570 | 6.9 | TM | |
| 69 | TM** | Chlorobenzene | 1.578 | 1.542 | 2.3 | TM** | |
| 70 | TM* | Ethylbenzene | 2.256 | 2.464 | 9.2 | TM* | |
| 71 | TM** | Bromoform | 0.4212 | 0.3809 | 9.6 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.484 | 3.544 | 1.7 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.120 | 1.104 | 1.4 | TM**L | 11 |
| 75 | TML | 1,2,3-Trichloropropane | 0.3504 | 0.3124 | 11 | TML | 5.8 |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2482 | 0.2438 | 1.8 | TM | |
| 77 | TM | Bromobenzene | 1.207 | 1.108 | 8.2 | TM | |
| 78 | TML | n-Propylbenzene | 4.013 | 4.665 | 16 | TML | 3.3 |
| 79 | TM | 4-Ethyltoluene | 3.520 | 3.819 | 8.5 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.767 | 3.052 | 10 | TM | |
| | | Average | | | 7.1 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/10/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1110L16.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 3.183 | 3.541 | 11 | TM | |
| 82 | TM | 4-Chlorotoluene | 0.7255 | 0.7420 | 2.3 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.550 | 2.554 | 0.16 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 3.092 | 3.265 | 5.6 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.695 | 4.058 | 9.8 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.141 | 3.269 | 4.1 | TM | |
| 87 | TML | Benzyl Chloride | 1.420 | 1.165 | 18 | TML | 7.3 |
| 88 | TM | 1,3-DCB | 2.204 | 2.112 | 4.2 | TM | |
| 89 | TM | 1,4-DCB | 2.423 | 2.295 | 5.3 | TM | |
| 90 | TM | n-Butylbenzene | 3.090 | 3.702 | 20 | TM | |
| 91 | TM | 1,2-DCB | 2.132 | 2.350 | 10 | TM | |
| 92 | TM | Hexachloroethane | 0.8269 | 0.9010 | 9.0 | TM | |
| 93 | TM | 1,2-Dibromo-3-chloropropane | 0.2000 | 0.1979 | 1.0 | TM | |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.275 | 1.263 | 0.94 | TM | |
| 95 | TML | Hexachlorobutadiene | 0.9450 | 0.7016 | 26 | TML | 15 |
| 96 | TML | Naphthalene | 1.123 | 1.145 | 2.0 | TML | 14 |
| 97 | TM | 1,2,3-Trichlorobenzene | 0.8074 | 0.6800 | 16 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
| 103 | | | | | | | |
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| 108 | | | | | | | |
| 109 | | | | | | | |
| 110 | | | | | | | |
| 111 | | | | | | | |
| 112 | | | | | | | |
| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 8.6 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L16.D
Acq On : 10 Nov 14 23:14
Sample : 10ug/L Std 11-10-14(CCV)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 15
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 473920 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 382784 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 224640 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 277859 | 25.74267 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 107.208% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 316960 | 26.20200 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 104.874% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 907201 | 29.88784 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 120.043% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 281924 | 25.17627 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 109.916% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 86716 | 10.71051 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 86875 | 11.44157 ppb | | 91 |
| 4) Chloromethane | 1.14 | 50 | 170072 | 11.57814 ppb | | 98 |
| 5) Vinyl chloride | 1.22 | 62 | 120300 | 10.73212 ppb | | 99 |
| 6) Bromomethane | 1.45 | 94 | 52469 | 10.57871 ppb | | 97 |
| 7) Chloroethane | 1.53 | 64 | 64072 | 11.74137 ppb | | 96 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 216138 | 10.94267 ppb | | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 141038 | 10.11176 ppb | | 97 |
| 10) Acrolein | 2.10 | 56 | 68638 | 135.36913 ppb | # | 95 |
| 11) Acetone | 2.25 | 43 | 31317 | 11.85198 ppb | | 95 |
| 12) Freon-113 | 2.20 | 101 | 83962 | 10.26779 ppb | | 93 |
| 13) 1,1-DCE | 2.18 | 61 | 146508 | 10.78267 ppb | | 92 |
| 14) t-Butanol | 2.87 | 59 | 27672 | 122.35213 ppb | | 94 |
| 15) Acetonitrile | 2.51 | 41 | 150918 | 152.32444 ppb | # | 86 |
| 16) Methyl Acetate | 2.59 | 43 | 75653 | 12.36711 ppb | | 94 |
| 17) Iodomethane | 2.31 | 142 | 17256 | 10.13590 ppb | | 97 |
| 18) Acrylonitrile | 2.97 | 52 | 26624 | 11.78319 ppb | | 88 |
| 19) Methylene chloride | 2.67 | 84 | 110737 | 11.23765 ppb | | 99 |
| 20) Carbon disulfide | 2.37 | 76 | 305189 | 10.74826 ppb | | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 202931 | 9.30697 ppb | | 92 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 130139 | 10.40122 ppb | | 93 |
| 23) Diisopropyl Ether | 3.71 | 45 | 321871 | 11.95667 ppb | | 94 |
| 24) 1,1-DCA | 3.53 | 63 | 193453 | 11.23152 ppb | | 95 |
| 25) Hexane | 3.36 | 57 | 83691 | 10.51254 ppb | | 98 |
| 26) Vinyl Acetate | 3.71 | 43 | 68984 | 11.59148 ppb | # | 97 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 245405 | 10.83958 ppb | | 99 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 39564 | 12.84966 ppb | | 91 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 106610 | 10.50658 ppb | | 90 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 46656 | 10.00562 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 191507 | 11.07016 ppb | | 97 |
| 32) Bromochloromethane | 4.75 | 128 | 53063 | 10.21106 ppb | | 89 |
| 34) 1,1,1-TCA | 5.11 | 97 | 156930 | 10.75702 ppb | | 95 |
| 35) Cyclohexane | 5.17 | 41 | 82555 | 12.33289 ppb | | 88 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 115108 | 10.47591 ppb | | 98 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 221086 | 10.97117 ppb | | 98 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 127467 | 9.55205 ppb | | 93 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 201440 | 9.91759 ppb | | 96 |
| 41) 1,2-DCA | 5.62 | 62 | 130709 | 10.17856 ppb | | 98 |
| 42) Benzene | 5.58 | 78 | 368148 | 10.36641 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L16.D
Acq On : 10 Nov 14 23:14
Sample : 10ug/L Std 11-10-14(CCV)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 15
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014
Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| | Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) | TCE | 6.38 | 95 | 89507 | 9.65493 | ppb | 95 |
| 44) | 2-Pentanone | 6.63 | 43 | 754111 | 132.19355 | ppb | 93 |
| 45) | 1,2-Dichloropropane | 6.62 | 63 | 109744 | 10.55907 | ppb | 96 |
| 46) | Bromodichloromethane | 6.95 | 83 | 132299 | 9.85864 | ppb | 99 |
| 47) | Methyl Cyclohexane | 6.58 | 83 | 104703 | 9.74962 | ppb | 92 |
| 48) | Dibromomethane | 6.75 | 93 | 56949 | 9.23624 | ppb | 87 |
| 49) | 2-Chloroethyl vinyl ether | 7.33 | 106 | 2542 | 11.27497 | ppb | 81 |
| 50) | MIBK (methyl isobutyl ket | 7.63 | 43 | 71693 | 10.10163 | ppb | 94 |
| 51) | 1-Bromo-2-chloroethane | 7.26 | 63 | 89880 | 11.46657 | ppb | 99 |
| 52) | Cis-1,3-Dichloropropene | 7.44 | 75 | 148726 | 10.32298 | ppb | 92 |
| 53) | Toluene | 7.78 | 91 | 424858 | 11.92340 | ppb | 94 |
| 54) | Trans-1,3-Dichloropropene | 8.04 | 75 | 133349 | 10.73654 | ppb | 98 |
| 55) | 1,1,2-TCA | 8.21 | 83 | 76732 | 11.05717 | ppb | 94 |
| 56) | 2-Hexanone | 8.50 | 43 | 44293 | 10.84211 | ppb | 99 |
| 59) | 1,2-EDB | 8.69 | 107 | 80700 | 10.61717 | ppb | 92 |
| 60) | Tetrachloroethene | 8.34 | 166 | 106196 | 10.81738 | ppb | 96 |
| 61) | 1-Chlorohexane | 9.22 | 91 | 93655 | 10.40173 | ppb | 87 |
| 62) | 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 92931 | 9.38462 | ppb | 93 |
| 63) | m&p-Xylene | 9.46 | 106 | 280243 | 21.07117 | ppb | 89 |
| 64) | o-Xylene | 9.85 | 106 | 128822 | 10.43383 | ppb | 98 |
| 65) | Styrene | 9.86 | 104 | 219950 | 9.37194 | ppb | 95 |
| 67) | 1,3-Dichloropropane | 8.38 | 76 | 147994 | 11.79782 | ppb | 100 |
| 68) | Dibromochloromethane | 8.60 | 129 | 100595 | 10.68649 | ppb | 99 |
| 69) | Chlorobenzene | 9.21 | 112 | 236029 | 9.76698 | ppb | 96 |
| 70) | Ethylbenzene | 9.34 | 91 | 377243 | 10.92171 | ppb | 96 |
| 71) | Bromoform | 10.02 | 173 | 58322 | 9.04313 | ppb | 92 |
| 73) | Isopropylbenzene | 10.22 | 105 | 318468 | 10.17151 | ppb | 98 |
| 74) | 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 99192 | 11.11569 | ppb | 94 |
| 75) | 1,2,3-Trichloropropane | 10.55 | 110 | 28074 | 10.58029 | ppb | 98 |
| 76) | t-1,4-Dichloro-2-Butene | 10.58 | 53 | 21911 | 9.82340 | ppb | 87 |
| 77) | Bromobenzene | 10.49 | 156 | 99559 | 9.17592 | ppb | 99 |
| 78) | n-Propylbenzene | 10.63 | 91 | 419178 | 10.33099 | ppb | 95 |
| 79) | 4-Ethyltoluene | 10.75 | 105 | 343176 | 10.84917 | ppb | 94 |
| 80) | 2-Chlorotoluene | 10.70 | 91 | 274198 | 11.02966 | ppb | 96 |
| 81) | 1,3,5-Trimethylbenzene | 10.81 | 105 | 318135 | 11.12191 | ppb | 96 |
| 82) | 4-Chlorotoluene | 10.81 | 126 | 66672 | 10.22734 | ppb | 85 |
| 83) | Tert-Butylbenzene | 11.13 | 119 | 229483 | 10.01580 | ppb | 96 |
| 84) | 1,2,4-Trimethylbenzene | 11.18 | 105 | 293388 | 10.56033 | ppb | 94 |
| 85) | Sec-Butylbenzene | 11.35 | 105 | 364626 | 10.98253 | ppb | 96 |
| 86) | p-Isopropyltoluene | 11.50 | 119 | 293704 | 10.40555 | ppb | 98 |
| 87) | Benzyl Chloride | 11.67 | 91 | 104666 | 9.27119 | ppb | 97 |
| 88) | 1,3-DCB | 11.44 | 146 | 189772 | 9.58412 | ppb | 97 |
| 89) | 1,4-DCB | 11.53 | 146 | 206263 | 9.47383 | ppb | 97 |
| 90) | n-Butylbenzene | 11.91 | 91 | 332655 | 11.97951 | ppb | 99 |
| 91) | 1,2-DCB | 11.89 | 146 | 211184 | 11.02463 | ppb | 98 |
| 92) | Hexachloroethane | 12.15 | 117 | 80964 | 10.89649 | ppb | 99 |
| 93) | 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 17787 | 9.89842 | ppb | 98 |
| 94) | 1,2,4-Trichlorobenzene | 13.49 | 180 | 113515 | 9.90637 | ppb | 96 |
| 95) | Hexachlorobutadiene | 13.68 | 225 | 63039 | 8.52668 | ppb | 94 |
| 96) | Naphthalene | 13.72 | 128 | 102864 | 8.56904 | ppb | 96 |
| 97) | 1,2,3-Trichlorobenzene | 13.97 | 180 | 61104 | 8.42203 | ppb | 99 |

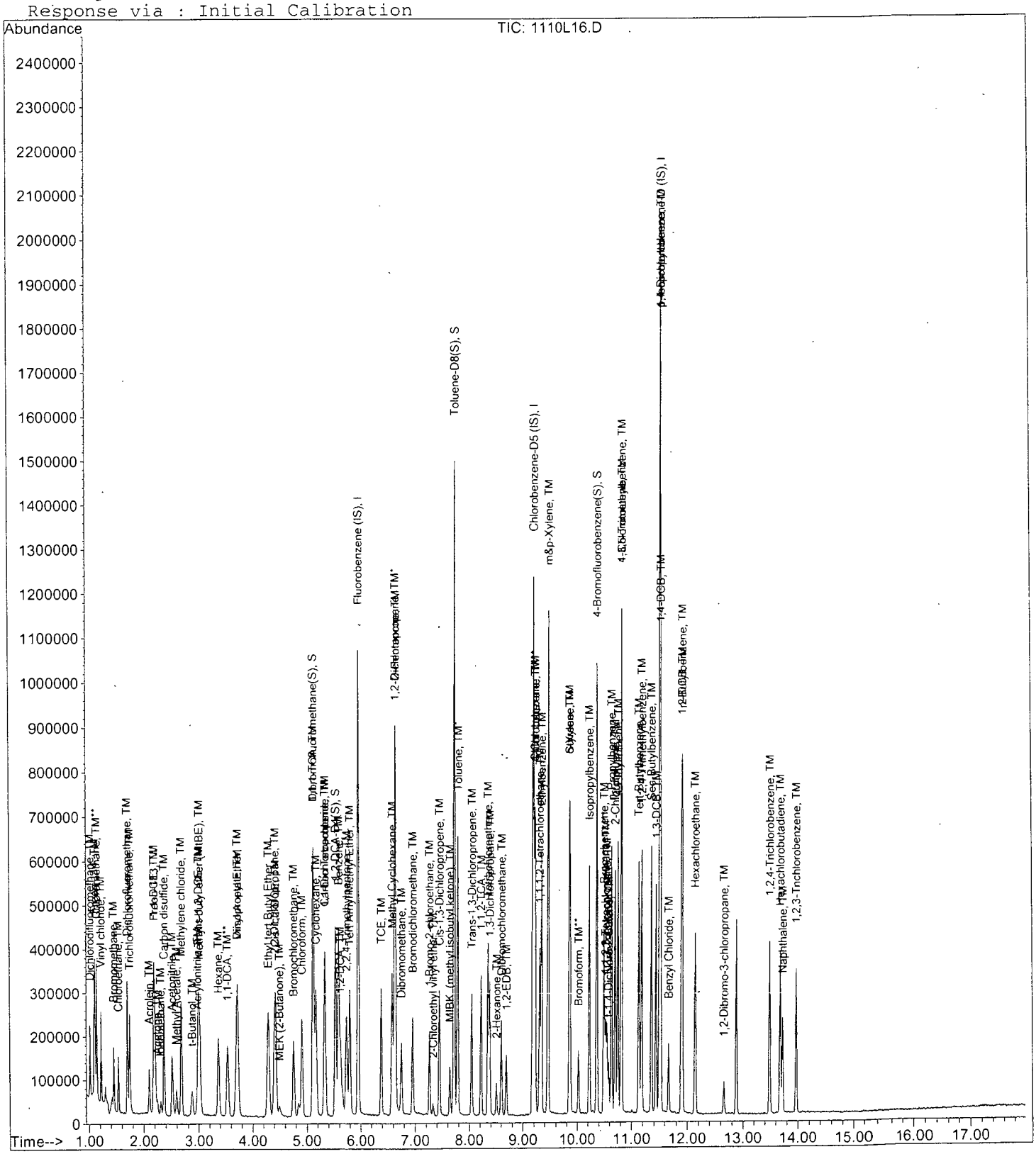
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141110\1110L16.D  Vial: 15
Acq On : 10 Nov 14 23:14  Operator: DG,SV,RS
Sample : 10ug/L Std 11-10-14(CCV)  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Nov 13 14:42 2014  Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 11/10/14
Instrument: Loki
Initial Cal. Date: 11/10/14
Data File: 1110L17.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TM | Dichlorodifluoromethane | 0.4271 | 0.4546 | 6.4 | TM | |
| 3 | TM | Freon 114 | 0.4005 | 0.4635 | 16 | TM | |
| 4 | TM**L | Chloromethane | 0.8958 | 0.8817 | 1.6 | TM**L | 14 |
| 5 | TM* | Vinyl chloride | 0.5913 | 0.6170 | 4.3 | TM* | |
| 6 | TML | Bromomethane | 0.2945 | 0.2493 | 15 | TML | 5.5 |
| 7 | TML | Chloroethane | 0.3766 | 0.3201 | 15 | TML | 11 |
| 8 | TM | Dichlorofluoromethane | 1.042 | 1.058 | 1.6 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7358 | 0.6920 | 5.9 | TM | |
| 10 | TML | Acrolein | 0.0308 | 0.0265 | 14 | TML | 2.0 |
| 11 | TML | Acetone | 0.3852 | 0.1457 | 62 | TML | 0.40 |
| 12 | TM | Freon-113 | 0.4314 | 0.4086 | 5.3 | TM | |
| 13 | TM* | 1,1-DCE | 0.7168 | 0.7406 | 3.3 | TM* | |
| 14 | TML | t-Butanol | 0.0141 | 0.0104 | 26 | TML | 14 |
| 15 | TML | Acetonitrile | 0.0598 | 0.0553 | 7.6 | TML | 4.7 |
| 16 | TML | Methyl Acetate | 0.3848 | 0.3524 | 8.4 | TML | 8.9 |
| 17 | TML | Iodomethane | 0.0966 | 0.0896 | 7.3 | TML | 0.05 |
| 18 | TML | Acrylonitrile | 0.1363 | 0.1110 | 19 | TML | 7.6 |
| 19 | TML | Methylene chloride | 0.5985 | 0.5340 | 11 | TML | 1.9 |
| 20 | TM | Carbon disulfide | 1.498 | 1.508 | 0.70 | TM | |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.150 | 0.9566 | 17 | TM | |
| 22 | TM | Trans-1,2-DCE | 0.6600 | 0.6244 | 5.4 | TM | |
| 23 | TM | Diisopropyl Ether | 1.420 | 1.495 | 5.3 | TM | |
| 24 | TM** | 1,1-DCA | 0.9086 | 0.8712 | 4.1 | TM** | |
| 25 | TM | Hexane | 0.4200 | 0.4261 | 1.5 | TM | |
| 26 | TM | Vinyl Acetate | 0.3139 | 0.3135 | 0.13 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.194 | 1.238 | 3.7 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.2043 | 0.1701 | 17 | TML | 3.8 |
| 29 | TM | Cis-1,2-DCE | 0.5353 | 0.5173 | 3.4 | TM | |
| 30 | TM | 2,2-Dichloropropane | 0.2460 | 0.2324 | 5.5 | TM | |
| 31 | TM* | Chloroform | 0.9126 | 0.9303 | 1.9 | TM* | |
| 32 | TM | Bromochloromethane | 0.2741 | 0.2519 | 8.1 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5694 | 0.5247 | 7.8 | S | |
| 34 | TM | 1,1,1-TCA | 0.7696 | 0.7742 | 0.60 | TM | |
| 35 | TM | Cyclohexane | 0.3531 | 0.4214 | 19 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5796 | 0.6265 | 8.1 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.063 | 1.235 | 16 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.6381 | 0.6060 | 5.0 | S | |
| 39 | TM | Carbon Tetrachloride | 0.7039 | 0.6830 | 3.0 | TM | |
| 40 | TM | Tert Amyl Methyl Ether | 1.071 | 1.108 | 3.4 | TM | |
| | | Average | | | 9.4 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/10/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1110L17.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TM | 1,2-DCA | 0.6774 | 0.7052 | 4.1 | TM | |
| 42 | TM | Benzene | 1.873 | 2.001 | 6.8 | TM | |
| 43 | TM | TCE | 0.4890 | 0.4499 | 8.0 | TM | |
| 44 | TM | 2-Pentanone | 0.3009 | 0.2811 | 6.6 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5483 | 0.5349 | 2.4 | TM* | |
| 46 | TM | Bromodichloromethane | 0.7079 | 0.6178 | 13 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5665 | 0.5174 | 8.7 | TM | |
| 48 | TM | Dibromomethane | 0.3253 | 0.2705 | 17 | TM | |
| 49 | TML | 2-Chloroethyl vinyl ether | 0.0119 | 0.0137 | 16 | TML | 16 |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3744 | 0.3087 | 18 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4135 | 0.3775 | 8.7 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7600 | 0.6501 | 14 | TM | |
| 53 | TM* | Toluene | 1.880 | 1.838 | 2.2 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6552 | 0.6393 | 2.4 | TM | |
| 55 | TM | 1,1,2-TCA | 0.3661 | 0.3550 | 3.0 | TM | |
| 56 | TML | 2-Hexanone | 0.2338 | 0.2139 | 8.5 | TML | 0.04 |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.982 | 1.997 | 0.74 | S | |
| 59 | TM | 1,2-EDB | 0.4964 | 0.5224 | 5.2 | TM | |
| 60 | TM | Tetrachloroethene | 0.6412 | 0.6377 | 0.53 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5880 | 0.6041 | 2.7 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6467 | 0.5806 | 10 | TM | |
| 63 | TM | m&p-Xylene | 0.8686 | 0.9101 | 4.8 | TM | |
| 64 | TM | o-Xylene | 0.8064 | 0.8196 | 1.6 | TM | |
| 65 | TML | Styrene | 1.322 | 1.403 | 6.1 | TML | 8.3 |
| 66 | S | 4-Bromofluorobenzene(S) | 0.7314 | 0.7041 | 3.7 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8193 | 0.9278 | 13 | TM | |
| 68 | TM | Dibromochloromethane | 0.6148 | 0.6698 | 8.9 | TM | |
| 69 | TM** | Chlorobenzene | 1.578 | 1.511 | 4.3 | TM** | |
| 70 | TM* | Ethylbenzene | 2.256 | 2.468 | 9.4 | TM* | |
| 71 | TM** | Bromoform | 0.4212 | 0.3445 | 18 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.484 | 3.840 | 10 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.120 | 1.157 | 3.3 | TM**L | 17 |
| 75 | TML | 1,2,3-Trichloropropane | 0.3504 | 0.3298 | 5.9 | TML | 12 |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2482 | 0.2612 | 5.2 | TM | |
| 77 | TM | Bromobenzene | 1.207 | 1.150 | 4.8 | TM | |
| 78 | TML | n-Propylbenzene | 4.013 | 5.107 | 27 | TML | 13 |
| 79 | TM | 4-Ethyltoluene | 3.520 | 4.212 | 20 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.767 | 3.247 | 17 | TM | |
| | | Average | | | 8.5 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/10/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1110L17.D

| | | Compound | MEAN | CCRF | %D | | %Drift | |
|---|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 3.183 | 3.826 | 20 | TM | | |
| 82 | TM | 4-Chlorotoluene | 0.7255 | 0.7992 | 10 | TM | | |
| 83 | TM | Tert-Butylbenzene | 2.550 | 2.798 | 9.7 | TM | | |
| 84 | TM | 1,2,4-Trimethylbenzene | 3.092 | 3.507 | 13 | TM | | |
| 85 | TM | Sec-Butylbenzene | 3.695 | 4.354 | 18 | TM | | |
| 86 | TM | p-Isopropyltoluene | 3.141 | 3.492 | 11 | TM | | |
| 87 | TML | Benzyl Chloride | 1.420 | 1.386 | 2.4 | TML | 10 | |
| 88 | TM | 1,3-DCB | 2.204 | 2.268 | 2.9 | TM | | |
| 89 | TM | 1,4-DCB | 2.423 | 2.365 | 2.4 | TM | | |
| 90 | TM | n-Butylbenzene | 3.090 | 3.947 | 28 | TM | | * |
| 91 | TM | 1,2-DCB | 2.132 | 2.396 | 12 | TM | | |
| 92 | TM | Hexachloroethane | 0.8269 | 1.008 | 22 | TM | | nt |
| 93 | TM | 1,2-Dibromo-3-chloropropane | 0.2000 | 0.1992 | 0.41 | TM | | |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.275 | 1.203 | 5.7 | TM | | |
| 95 | TML | Hexachlorobutadiene | 0.9450 | 0.7833 | 17 | TML | 4.6 | |
| 96 | TML | Naphthalene | 1.123 | 1.207 | 7.5 | TML | 9.9 | |
| 97 | TM | 1,2,3-Trichlorobenzene | 0.8074 | 0.7372 | 8.7 | TM | | |
| 98 | | | | | | | | |
| 99 | | | | | | | | |
| 100 | | | | | | | | |
| 101 | | | | | | | | |
| 102 | | | | | | | | |
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| 115 | | | | | | | | |
| 116 | | | | | | | | |
| 117 | | | | | | | | |
| 118 | | | | | | | | |
| 119 | | | | | | | | |
| 120 | | | | | | | | |
| | | Average | | | 11.2 | | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L17.D
Acq On : 10 Nov 14 23:42
Sample : 10ug/L Std 11-10-14(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

130435 x 25 / 528512 x 0.5913 = 10.43

SV 11/17/14

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 528512 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 403840 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 217280 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 277319 | 23.03875 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 95.947% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 320264 | 23.74042 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 95.020% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 806484 | 25.18438 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 101.150% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 284344 | 24.06843 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 105.079% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 96106 | 10.64417 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 97980 | 11.57120 ppb | | 93 |
| 4) Chloromethane | 1.14 | 50 | 186400 | 11.37900 ppb | | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 130435 | 10.43432 ppb | | 100 |
| 6) Bromomethane | 1.45 | 94 | 52696 | 9.44609 ppb | | 100 |
| 7) Chloroethane | 1.53 | 64 | 67662 | 11.12335 ppb | | 95 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 223689 | 10.15517 ppb | | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 146294 | 9.40518 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 69983 | 122.55218 ppb | # | 98 |
| 11) Acetone | 2.25 | 43 | 30803 | 10.03970 ppb | | 97 |
| 12) Freon-113 | 2.20 | 101 | 86370 | 9.47125 ppb | | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 156559 | 10.33221 ppb | | 92 |
| 14) t-Butanol | 2.87 | 59 | 27584 | 107.77757 ppb | | 95 |
| 15) Acetonitrile | 2.51 | 41 | 146075 | 130.84697 ppb | # | 59 |
| 16) Methyl Acetate | 2.60 | 43 | 74508 | 10.89405 ppb | | 95 |
| 17) Iodomethane | 2.31 | 142 | 18936 | 10.00468 ppb | | 97 |
| 18) Acrylonitrile | 2.96 | 52 | 23475 | 9.23515 ppb | | 81 |
| 19) Methylene chloride | 2.67 | 84 | 112898 | 10.19339 ppb | | 98 |
| 20) Carbon disulfide | 2.37 | 76 | 318860 | 10.06977 ppb | | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 202236 | 8.31704 ppb | | 92 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 132011 | 9.46100 ppb | | 91 |
| 23) Diisopropyl Ether | 3.71 | 45 | 316057 | 10.52795 ppb | | 95 |
| 24) 1,1-DCA | 3.53 | 63 | 184169 | 9.58804 ppb | | 96 |
| 25) Hexane | 3.36 | 57 | 90076 | 10.14585 ppb | | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 66280 | 9.98672 ppb | # | 98 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 261802 | 10.36937 ppb | | 100 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 35958 | 10.38478 ppb | # | 82 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 109351 | 9.66354 ppb | | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 49128 | 9.44748 ppb | | 96 |
| 31) Chloroform | 4.90 | 83 | 196671 | 10.19435 ppb | | 97 |
| 32) Bromochloromethane | 4.76 | 128 | 53261 | 9.19049 ppb | | 100 |
| 34) 1,1,1-TCA | 5.11 | 97 | 163665 | 10.05986 ppb | | 97 |
| 35) Cyclohexane | 5.16 | 41 | 89087 | 11.93400 ppb | | 95 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 132442 | 10.80842 ppb | | 97 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 261124 | 11.61954 ppb | | 99 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 144390 | 9.70255 ppb | | 92 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 234194 | 10.33919 ppb | | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 149087 | 10.41048 ppb | | 99 |
| 42) Benzene | 5.58 | 78 | 423046 | 10.68179 ppb | | 96 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L17.D
Acq On : 10 Nov 14 23:42
Sample : 10ug/L Std 11-10-14(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014
Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| | Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|---|
| 43) | TCE | 6.38 | 95 | 95104 | 9.19901 | ppb | | 94 |
| 44) | 2-Pentanone | 6.63 | 43 | 742736 | 116.75074 | ppb | | 92 |
| 45) | 1,2-Dichloropropane | 6.62 | 63 | 113072 | 9.75551 | ppb | | 96 |
| 46) | Bromodichloromethane | 6.95 | 83 | 130602 | 8.72691 | ppb | # | 95 |
| 47) | Methyl Cyclohexane | 6.58 | 83 | 109391 | 9.13399 | ppb | | 92 |
| 48) | Dibromomethane | 6.75 | 93 | 57177 | 8.31536 | ppb | | 86 |
| 49) | 2-Chloroethyl vinyl ether | 7.33 | 106 | 2904 | 11.55013 | ppb | # | 63 |
| 50) | MIBK (methyl isobutyl ket | 7.63 | 43 | 65269 | 8.24654 | ppb | | 95 |
| 51) | 1-Bromo-2-chloroethane | 7.26 | 63 | 79808 | 9.12992 | ppb | | 98 |
| 52) | Cis-1,3-Dichloropropene | 7.44 | 75 | 137434 | 8.55387 | ppb | | 93 |
| 53) | Toluene | 7.78 | 91 | 388458 | 9.77576 | ppb | | 96 |
| 54) | Trans-1,3-Dichloropropene | 8.04 | 75 | 135153 | 9.75776 | ppb | | 97 |
| 55) | 1,1,2-TCA | 8.21 | 83 | 75049 | 9.69756 | ppb | | 95 |
| 56) | 2-Hexanone | 8.50 | 43 | 45212 | 10.00425 | ppb | | 97 |
| 59) | 1,2-EDB | 8.69 | 107 | 84379 | 10.52238 | ppb | | 100 |
| 60) | Tetrachloroethene | 8.34 | 166 | 103019 | 9.94662 | ppb | | 96 |
| 61) | 1-Chlorohexane | 9.22 | 91 | 97577 | 10.27227 | ppb | | 85 |
| 62) | 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 93789 | 8.97743 | ppb | | 91 |
| 63) | m&p-Xylene | 9.46 | 106 | 294042 | 20.95597 | ppb | | 94 |
| 64) | o-Xylene | 9.85 | 106 | 132390 | 10.16373 | ppb | | 91 |
| 65) | Styrene | 9.86 | 104 | 226636 | 9.16665 | ppb | # | 95 |
| 67) | 1,3-Dichloropropane | 8.38 | 76 | 149870 | 11.32445 | ppb | | 100 |
| 68) | Dibromochloromethane | 8.60 | 129 | 108198 | 10.89488 | ppb | | 96 |
| 69) | Chlorobenzene | 9.21 | 112 | 244099 | 9.57426 | ppb | | 96 |
| 70) | Ethylbenzene | 9.34 | 91 | 398708 | 10.94130 | ppb | | 95 |
| 71) | Bromoform | 10.02 | 173 | 55643 | 8.17789 | ppb | | 98 |
| 73) | Isopropylbenzene | 10.23 | 105 | 333748 | 11.02061 | ppb | | 99 |
| 74) | 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 100566 | 11.71106 | ppb | | 96 |
| 75) | 1,2,3-Trichloropropane | 10.55 | 110 | 28666 | 11.23433 | ppb | | 98 |
| 76) | t-1,4-Dichloro-2-Butene | 10.58 | 53 | 22701 | 10.52233 | ppb | | 77 |
| 77) | Bromobenzene | 10.50 | 156 | 99952 | 9.52419 | ppb | | 98 |
| 78) | n-Propylbenzene | 10.63 | 91 | 443862 | 11.28973 | ppb | | 93 |
| 79) | 4-Ethyltoluene | 10.75 | 105 | 366088 | 11.96554 | ppb | | 94 |
| 80) | 2-Chlorotoluene | 10.70 | 91 | 282246 | 11.73797 | ppb | | 97 |
| 81) | 1,3,5-Trimethylbenzene | 10.82 | 105 | 332539 | 12.01926 | ppb | | 94 |
| 82) | 4-Chlorotoluene | 10.81 | 126 | 69459 | 11.01577 | ppb | | 84 |
| 83) | Tert-Butylbenzene | 11.13 | 119 | 243196 | 10.97385 | ppb | | 98 |
| 84) | 1,2,4-Trimethylbenzene | 11.18 | 105 | 304782 | 11.34206 | ppb | | 94 |
| 85) | Sec-Butylbenzene | 11.35 | 105 | 378378 | 11.78278 | ppb | | 96 |
| 86) | p-Isopropyltoluene | 11.51 | 119 | 303532 | 11.11800 | ppb | | 98 |
| 87) | Benzyl Chloride | 11.67 | 91 | 120442 | 11.04023 | ppb | | 99 |
| 88) | 1,3-DCB | 11.44 | 146 | 197148 | 10.29389 | ppb | | 98 |
| 89) | 1,4-DCB | 11.53 | 146 | 205526 | 9.75974 | ppb | | 97 |
| 90) | n-Butylbenzene | 11.91 | 91 | 343035 | 12.77176 | ppb | | 98 |
| 91) | 1,2-DCB | 11.89 | 146 | 208199 | 11.23696 | ppb | | 97 |
| 92) | Hexachloroethane | 12.15 | 117 | 87629 | 12.19298 | ppb | | 91 |
| 93) | 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 17310 | 9.95927 | ppb | | 96 |
| 94) | 1,2,4-Trichlorobenzene | 13.49 | 180 | 104523 | 9.43063 | ppb | | 97 |
| 95) | Hexachlorobutadiene | 13.68 | 225 | 68075 | 9.53692 | ppb | | 93 |
| 96) | Naphthalene | 13.72 | 128 | 104904 | 9.01071 | ppb | | 98 |
| 97) | 1,2,3-Trichlorobenzene | 13.97 | 180 | 64072 | 9.13025 | ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

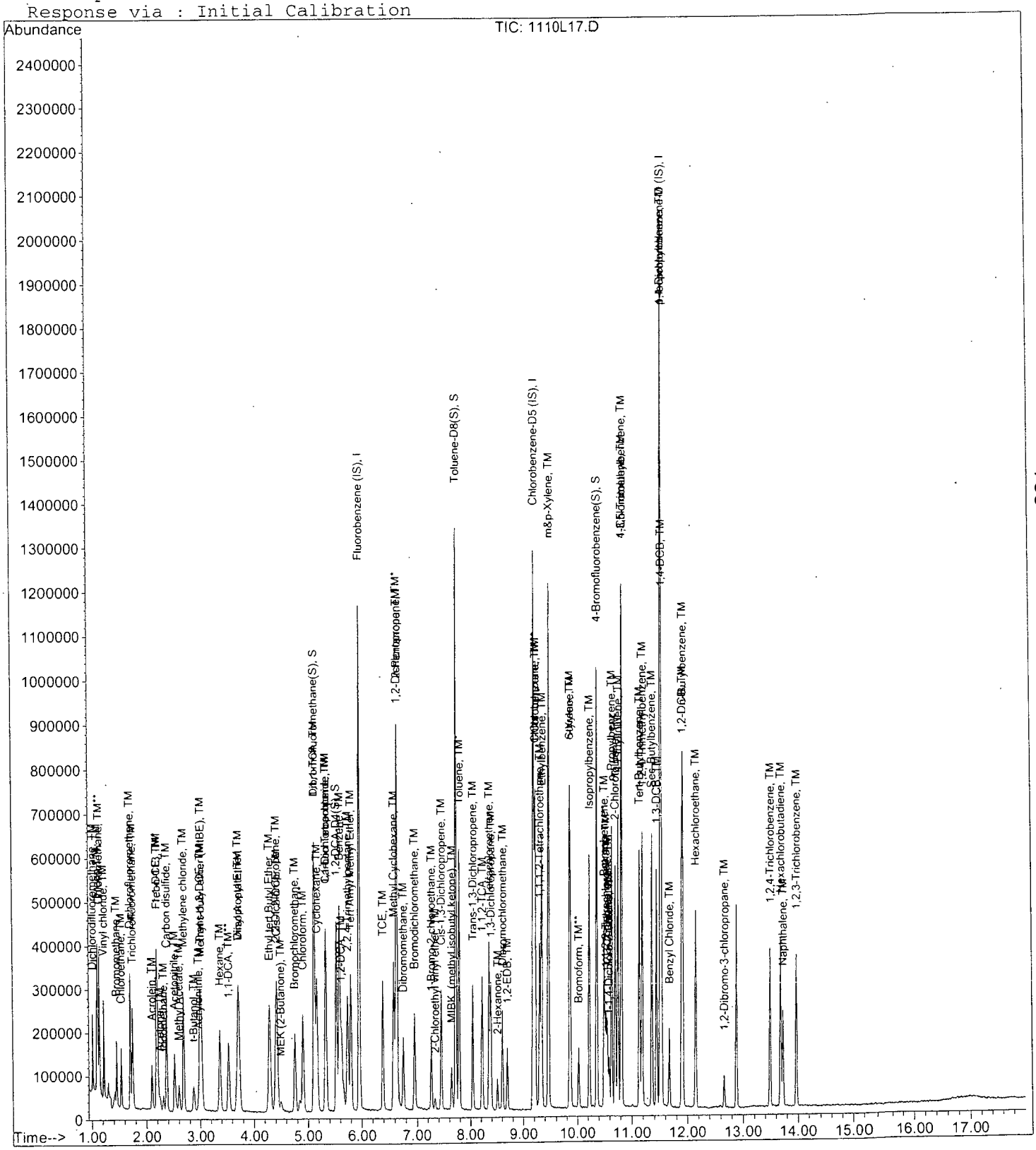
Data File : M:\LOKI\DATA\141110\1110L17.D
Acq On : 10 Nov 14 23:42
Sample : 10ug/L Std 11-10-14(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 16
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 13 14:42 2014

Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Thu Nov 13 13:35:08 2014
Response via : Initial Calibration

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VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 11/17/2014
Instrument: Loki
Initial Cal. Date: 11/10/2014
Data File: 1117L10.D

| | | Compound | MEAN | CCRF | %D | %Drift | | |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | | |
| 2 | TM | Dichlorodifluoromethane | 0.4271 | 0.3616 | 15 | TM | | |
| 3 | TM | Freon 114 | 0.4005 | 0.4082 | 1.9 | TM | | |
| 4 | TM**L | Chloromethane | 0.8958 | 0.6383 | 29 | TM**L | 18 | |
| 5 | TM* | Vinyl chloride | 0.5913 | 0.5436 | 8.1 | TM* | | |
| 6 | TML | Bromomethane | 0.2945 | 0.2548 | 13 | TML | 3.2 | |
| 7 | TML | Chloroethane | 0.3766 | 0.2874 | 24 | TML | 0.03 | |
| 8 | TM | Dichlorofluoromethane | 1.042 | 0.9454 | 9.3 | TM | | |
| 9 | TM | Trichlorofluoromethane | 0.7358 | 0.6599 | 10 | TM | | |
| 10 | TML | Acrolein | 0.0308 | 0.0234 | 24 | TML | 15 | |
| 11 | TML | Acetone | 0.3852 | 0.1180 | 69 | TML | 25 | *NT |
| 12 | TM | Freon-113 | 0.4314 | 0.4173 | 3.3 | TM | | |
| 13 | TM* | 1,1-DCE | 0.7168 | 0.6614 | 7.7 | TM* | | |
| 14 | TML | t-Butanol | 0.0141 | 0.0104 | 27 | TML | 14 | |
| 15 | TML | Acetonitrile | 0.0598 | 0.0518 | 13 | TML | 2.4 | |
| 16 | TML | Methyl Acetate | 0.3848 | 0.3069 | 20 | TML | 5.5 | |
| 17 | TML | Iodomethane | 0.0966 | 0.1271 | 32 | TML | 34 | *NT |
| 18 | TML | Acrylonitrile | 0.1363 | 0.1140 | 16 | TML | 5.1 | |
| 19 | TML | Methylene chloride | 0.5985 | 0.5053 | 16 | TML | 4.0 | |
| 20 | TM | Carbon disulfide | 1.498 | 1.274 | 15 | TM | | |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.150 | 0.9781 | 15 | TM | | |
| 22 | TM | Trans-1,2-DCE | 0.6600 | 0.6372 | 3.5 | TM | | |
| 23 | TM | Diisopropyl Ether | 1.420 | 1.398 | 1.5 | TM | | |
| 24 | TM** | 1,1-DCA | 0.9086 | 0.8676 | 4.5 | TM** | | |
| 25 | TM | Hexane | 0.4200 | 0.4504 | 7.3 | TM | | |
| 26 | TM | Vinyl Acetate | 0.3139 | 0.3060 | 2.5 | TM | | |
| 27 | TM | Ethyl tert Butyl Ether | 1.194 | 1.101 | 7.8 | TM | | |
| 28 | TML | MEK (2-Butanone) | 0.2043 | 0.1449 | 29 | TML | 12 | |
| 29 | TM | Cis-1,2-DCE | 0.5353 | 0.4859 | 9.2 | TM | | |
| 30 | TM | 2,2-Dichloropropane | 0.2460 | 0.2488 | 1.1 | TM | | |
| 31 | TM* | Chloroform | 0.9126 | 0.8359 | 8.4 | TM* | | |
| 32 | TM | Bromochloromethane | 0.2741 | 0.2329 | 15 | TM | | |
| 33 | S | Dibromofluoromethane(S) | 0.5694 | 0.5058 | 11 | S | | |
| 34 | TM | 1,1,1-TCA | 0.7696 | 0.7097 | 7.8 | TM | | |
| 35 | TM | Cyclohexane | 0.3531 | 0.3685 | 4.4 | TM | | |
| 36 | TM | 1,1-Dichloropropene | 0.5796 | 0.5645 | 2.6 | TM | | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.063 | 1.237 | 16 | TM | | |
| 38 | S | 1,2-DCA-D4(S) | 0.6381 | 0.5750 | 9.9 | S | | |
| 39 | TM | Carbon Tetrachloride | 0.7039 | 0.6368 | 9.5 | TM | | |
| 40 | TM | Tert Amyl Methyl Ether | 1.071 | 1.018 | 5.0 | TM | | |
| | | Average | | | 13.4 | | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/17/2014
Instrument: Loki
Cal. Date: 11/10/2014
Data File: 1117L10.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TM | 1,2-DCA | 0.6774 | 0.6323 | 6.7 | TM | |
| 42 | TM | Benzene | 1.873 | 1.793 | 4.3 | TM | |
| 43 | TM | TCE | 0.4890 | 0.4399 | 10 | TM | |
| 44 | TM | 2-Pentanone | 0.3009 | 0.2733 | 9.2 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5483 | 0.5296 | 3.4 | TM* | |
| 46 | TM | Bromodichloromethane | 0.7079 | 0.6430 | 9.2 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5665 | 0.5623 | 0.74 | TM | |
| 48 | TM | Dibromomethane | 0.3253 | 0.2782 | 14 | TM | |
| 49 | TML | 2-Chloroethyl vinyl ether | 0.0000 | 0.0114 | 0.00 | TML | |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3744 | 0.3035 | 19 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4135 | 0.3701 | 11 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7600 | 0.6843 | 10.0 | TM | |
| 53 | TM* | Toluene | 1.880 | 1.874 | 0.31 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6552 | 0.5932 | 9.5 | TM | |
| 55 | TM | 1,1,2-TCA | 0.3661 | 0.3320 | 9.3 | TM | |
| 56 | TML | 2-Hexanone | 0.2338 | 0.1931 | 17 | TML | 8.8 |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.982 | 2.028 | 2.3 | S | |
| 59 | TM | 1,2-EDB | 0.4964 | 0.4298 | 13 | TM | |
| 60 | TM | Tetrachloroethene | 0.6412 | 0.6196 | 3.4 | TM | |
| 61 | TM | 1-Chlorohexane | 0.5880 | 0.6105 | 3.8 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6467 | 0.5878 | 9.1 | TM | |
| 63 | TM | m&p-Xylene | 0.8686 | 0.8868 | 2.1 | TM | |
| 64 | TM | o-Xylene | 0.8064 | 0.8079 | 0.19 | TM | |
| 65 | TML | Styrene | 1.322 | 1.393 | 5.4 | TML | 8.9 |
| 66 | S | 4-Bromofluorobenzene(S) | 0.7314 | 0.7469 | 2.1 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8193 | 0.7917 | 3.4 | TM | |
| 68 | TM | Dibromochloromethane | 0.6148 | 0.5403 | 12 | TM | |
| 69 | TM** | Chlorobenzene | 1.578 | 1.510 | 4.3 | TM** | |
| 70 | TM* | Ethylbenzene | 2.256 | 2.380 | 5.5 | TM* | |
| 71 | TM** | Bromoform | 0.4212 | 0.3606 | 14 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.484 | 3.389 | 2.7 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.120 | 0.9820 | 12 | TM**L | 2.5 |
| 75 | TML | 1,2,3-Trichloropropane | 0.3504 | 0.2808 | 20 | TML | 6.1 |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2482 | 0.2291 | 7.7 | TM | |
| 77 | TM | Bromobenzene | 1.207 | 1.071 | 11 | TM | |
| 78 | TML | n-Propylbenzene | 4.013 | 4.458 | 11 | TML | 1.2 |
| 79 | TM | 4-Ethyltoluene | 3.520 | 3.690 | 4.8 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.767 | 2.847 | 2.9 | TM | |
| | | Average | | | 7.5 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/17/2014
Instrument: Loki
Cal. Date: 11/10/2014
Data File: 1117L10.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 3.183 | 3.475 | 9.2 | TM | |
| 82 | TM | 4-Chlorotoluene | 0.7255 | 0.6868 | 5.3 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.550 | 2.561 | 0.45 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 3.092 | 3.177 | 2.8 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.695 | 3.960 | 7.2 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.141 | 3.300 | 5.0 | TM | |
| 87 | TML | Benzyl Chloride | 1.420 | 1.372 | 3.4 | TML | 9.3 |
| 88 | TM | 1,3-DCB | 2.204 | 2.118 | 3.9 | TM | |
| 89 | TM | 1,4-DCB | 2.423 | 2.185 | 9.8 | TM | |
| 90 | TM | n-Butylbenzene | 3.090 | 3.192 | 3.3 | TM | |
| 91 | TM | 1,2-DCB | 2.132 | 1.921 | 9.9 | TM | |
| 92 | TM | Hexachloroethane | 0.8269 | 0.7803 | 5.6 | TM | |
| 93 | TM | 1,2-Dibromo-3-chloropropane | 0.2000 | 0.1626 | 19 | TM | |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.275 | 1.136 | 11 | TM | |
| 95 | TML | Hexachlorobutadiene | 0.9450 | 0.8345 | 12 | TML | 1.7 |
| 96 | TML | Naphthalene | 1.123 | 1.076 | 4.1 | TML | 19 |
| 97 | TM | 1,2,3-Trichlorobenzene | 0.8074 | 0.7329 | 9.2 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
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| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 7.1 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L10.D
Acq On : 17 Nov 14 12:14
Sample : 10ug/L Vol Std 11-17-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 17 12:48 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 572224 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 471168 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.50 | 152 | 281408 | 25.00 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 289439 | 22.21 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery = 92.491% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 329020 | 22.53 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery = 90.161% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 955367 | 25.57 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery = 102.704% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 351937 | 25.53 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery = 111.475% | | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 82757 | 8.47 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 93427 | 10.19 ppb | 85 |
| 4) Chloromethane | 1.14 | 50 | 146100 | 8.24 ppb | 100 |
| 5) Vinyl chloride | 1.21 | 62 | 124429 | 9.19 ppb | 98 |
| 6) Bromomethane | 1.45 | 94 | 58328 | 9.68 ppb | 96 |
| 7) Chloroethane | 1.53 | 64 | 65780 | 10.00 ppb | 97 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 216393 | 9.07 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 151055 | 8.97 ppb | 99 |
| 10) Acrolein | 2.10 | 56 | 66862 | 106.48 ppb | 95 |
| 11) Acetone | 2.25 | 43 | 27005 | 7.46 ppb | 96 |
| 12) Freon-113 | 2.20 | 101 | 95508 | 9.67 ppb | 97 |
| 13) 1,1-DCE | 2.18 | 61 | 151392 | 9.23 ppb | 96 |
| 14) t-Butanol | 2.87 | 59 | 29680 | 107.02 ppb | 97 |
| 15) Acetonitrile | 2.51 | 41 | 148301 | 122.05 ppb | 98 |
| 16) Methyl Acetate | 2.59 | 43 | 70241 | 9.45 ppb | 97 |
| 17) Iodomethane | 2.31 | 142 | 29096 | 13.39 ppb | 92 |
| 18) Acrylonitrile | 2.97 | 52 | 26096 | 9.49 ppb | 83 |
| 19) Methylene chloride | 2.67 | 84 | 115668 | 9.60 ppb | 96 |
| 20) Carbon disulfide | 2.36 | 76 | 291507 | 8.50 ppb | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 223871 | 8.50 ppb | 95 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 145844 | 9.65 ppb | 95 |
| 23) Diisopropyl Ether | 3.71 | 45 | 320074 | 9.85 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 198590 | 9.55 ppb | 95 |
| 25) Hexane | 3.36 | 57 | 103101 | 10.73 ppb | 98 |
| 26) Vinyl Acetate | 3.71 | 43 | 70040 | 9.75 ppb | 99 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 251931 | 9.22 ppb | 97 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 33170 | 8.78 ppb | 85 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 111222 | 9.08 ppb | 95 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 56944 | 10.11 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 191333 | 9.16 ppb | 97 |
| 32) Bromochloromethane | 4.75 | 128 | 53317 | 8.50 ppb | 95 |
| 34) 1,1,1-TCA | 5.10 | 97 | 162436 | 9.22 ppb | 97 |
| 35) Cyclohexane | 5.16 | 41 | 84352 | 10.44 ppb | 95 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 129206 | 9.74 ppb | 98 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 283065 | 11.63 ppb | 97 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 145763 | 9.05 ppb | 92 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 232930 | 9.50 ppb | 94 |
| 41) 1,2-DCA | 5.62 | 62 | 144731 | 9.33 ppb | 97 |
| 42) Benzene | 5.58 | 78 | 410410 | 9.57 ppb | 98 |
| 43) TCE | 6.38 | 95 | 100679 | 8.99 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L10.D
Acq On : 17 Nov 14 12:14
Sample : 10ug/L Vol Std 11-17-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 17 12:48 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 44) 2-Pentanone | 6.63 | 43 | 782017 | 113.54 ppb | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 121231 | 9.66 ppb | 98 |
| 46) Bromodichloromethane | 6.95 | 83 | 147166 | 9.08 ppb | 97 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 128705 | 9.93 ppb | 100 |
| 48) Dibromomethane | 6.75 | 93 | 63674 | 8.55 ppb | 95 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 69478 | 8.11 ppb | 97 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 84704 | 8.95 ppb | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 156637 | 9.00 ppb | 96 |
| 53) Toluene | 7.78 | 91 | 428882 | 9.97 ppb | 98 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 135772 | 9.05 ppb | 97 |
| 55) 1,1,2-TCA | 8.21 | 83 | 75994 | 9.07 ppb | 95 |
| 56) 2-Hexanone | 8.50 | 43 | 44194 | 9.12 ppb | 94 |
| 59) 1,2-EDB | 8.69 | 107 | 81000 | 8.66 ppb | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 116781 | 9.66 ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 115063 | 10.38 ppb | 96 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 110778 | 9.09 ppb | 99 |
| 63) m&p-Xylene | 9.46 | 106 | 334261 | 20.42 ppb | 93 |
| 64) o-Xylene | 9.85 | 106 | 152257 | 10.02 ppb | 97 |
| 65) Styrene | 9.86 | 104 | 262599 | 9.11 ppb | 98 |
| 67) 1,3-Dichloropropane | 8.37 | 76 | 149205 | 9.66 ppb | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 101822 | 8.79 ppb | 98 |
| 69) Chlorobenzene | 9.20 | 112 | 284530 | 9.57 ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 448579 | 10.55 ppb | 96 |
| 71) Bromoform | 10.02 | 173 | 67953 | 8.56 ppb | 98 |
| 73) Isopropylbenzene | 10.22 | 105 | 381525 | 9.73 ppb | 96 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 110539 | 9.75 ppb | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 31603 | 9.39 ppb | 96 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 25785 | 9.23 ppb | 83 |
| 77) Bromobenzene | 10.49 | 156 | 120581 | 8.87 ppb | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 501843 | 9.88 ppb | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 415344 | 10.48 ppb | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 320417 | 10.29 ppb | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 391212 | 10.92 ppb | 97 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 77312 | 9.47 ppb | 84 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 288301 | 10.04 ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 357664 | 10.28 ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 445780 | 10.72 ppb | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 371403 | 10.50 ppb | 99 |
| 87) Benzyl Chloride | 11.66 | 91 | 154433 | 10.93 ppb | 98 |
| 88) 1,3-DCB | 11.43 | 146 | 238368 | 9.61 ppb | 99 |
| 89) 1,4-DCB | 11.52 | 146 | 245955 | 9.02 ppb | 98 |
| 90) n-Butylbenzene | 11.90 | 91 | 359317 | 10.33 ppb | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 216232 | 9.01 ppb | 99 |
| 92) Hexachloroethane | 12.14 | 117 | 87830 | 9.44 ppb | 98 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 18305 | 8.13 ppb | 94 |
| 94) 1,2,4-Trichlorobenzene | 13.48 | 180 | 127835 | 8.91 ppb | 97 |
| 95) Hexachlorobutadiene | 13.67 | 225 | 93931 | 10.17 ppb | 97 |
| 96) Naphthalene | 13.71 | 128 | 121168 | 8.08 ppb | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 82496 | 9.08 ppb | 99 |

(#) = qualifier out of range (m) = manual integration

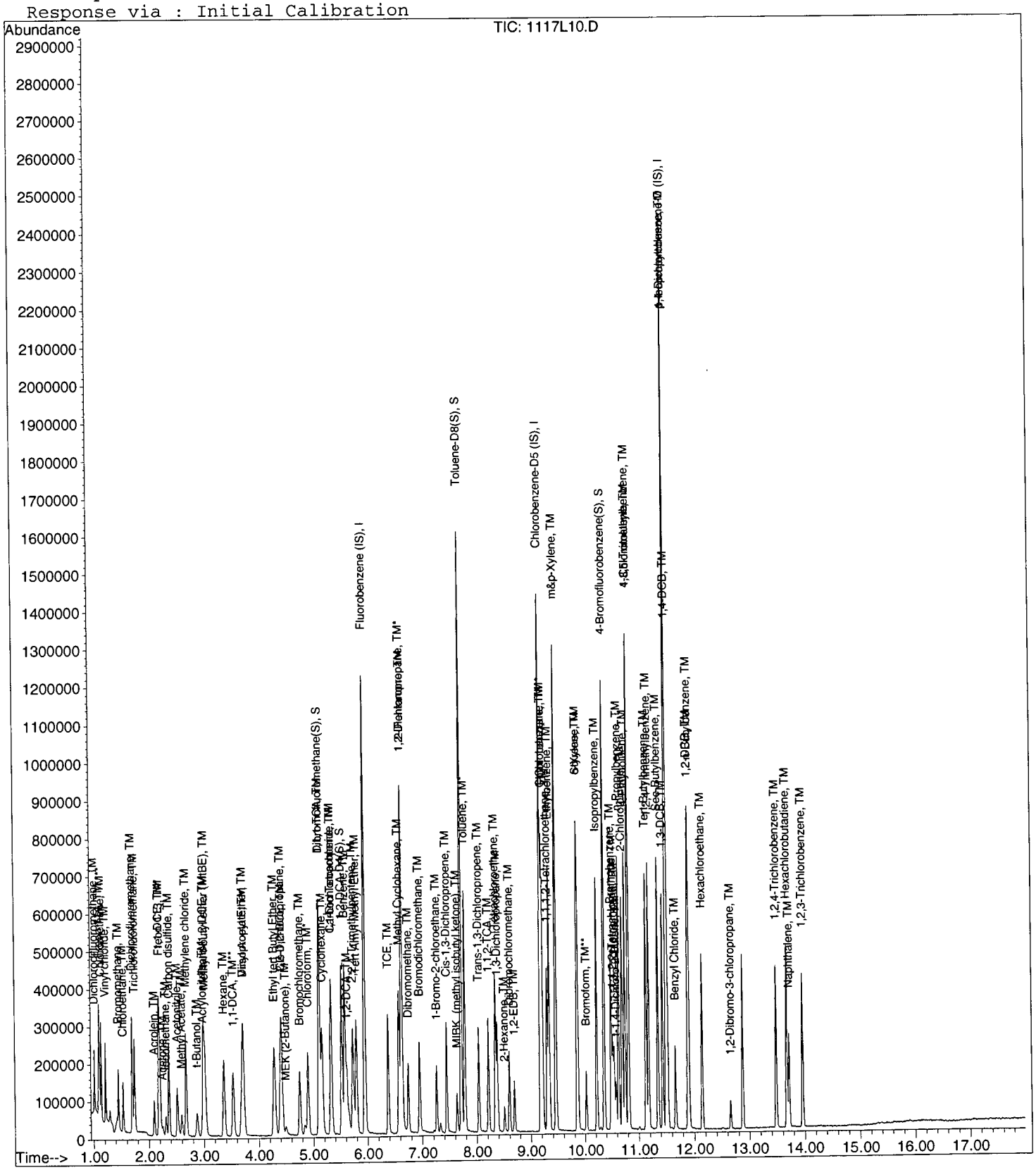
Quantitation Report

Data File : M:\LOKI\DATA\141110\1117L10.D
Acq On : 17 Nov 14 12:14
Sample : 10ug/L Vol Std 11-17-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 17 12:48 2014 Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration




227

# EPA METHOD 8260C
# Volatile Organic Compounds
# Raw Data

APPL, INC.

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DIBROMO-3-CHLOROPROPA | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,3-DICHLOROPROPENE (TOTA | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 10/26/2014 | 10/26/2014 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/17/2014 3:27:01 PM*

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141026W-05593 - 191309**
Batch ID: #86CRE-141026AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: 1,2-DICHLOROET | 104 | 70-120 | | | % | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: 4-BROMOFLUOR | 99.4 | 75-120 | | | % | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: DIBROMOFLUOR | 104 | 85-115 | | | % | 10/26/2014 | 10/26/2014 |
| BLANK | SURROGATE: TOLUENE-D8 (S) | 98.2 | 85-120 | | | % | 10/26/2014 | 10/26/2014 |

Quant Method: LALLW2.M
Run #: 1026L10
Instrument: Loki
Sequence: 141024
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/17/2014 3:27:01 PM*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141024\1026L10.D Vial: 9
Acq On : 26 Oct 14 14:57 Operator: DG,SV,RS
Sample : 141026A BLK-1WL Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 29 15:08 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 333440 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 314944 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 147328 | 25.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 204259 | 28.12 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery | = 103.501% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 220891 | 28.70 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery | = 103.642% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 573395 | 25.69 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery | = 98.232% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 188032 | 22.10 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery | = 99.411% | |

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
1026L10.D LALLW2.M Mon Nov 17 15:37:28 2014

Quantitation Report

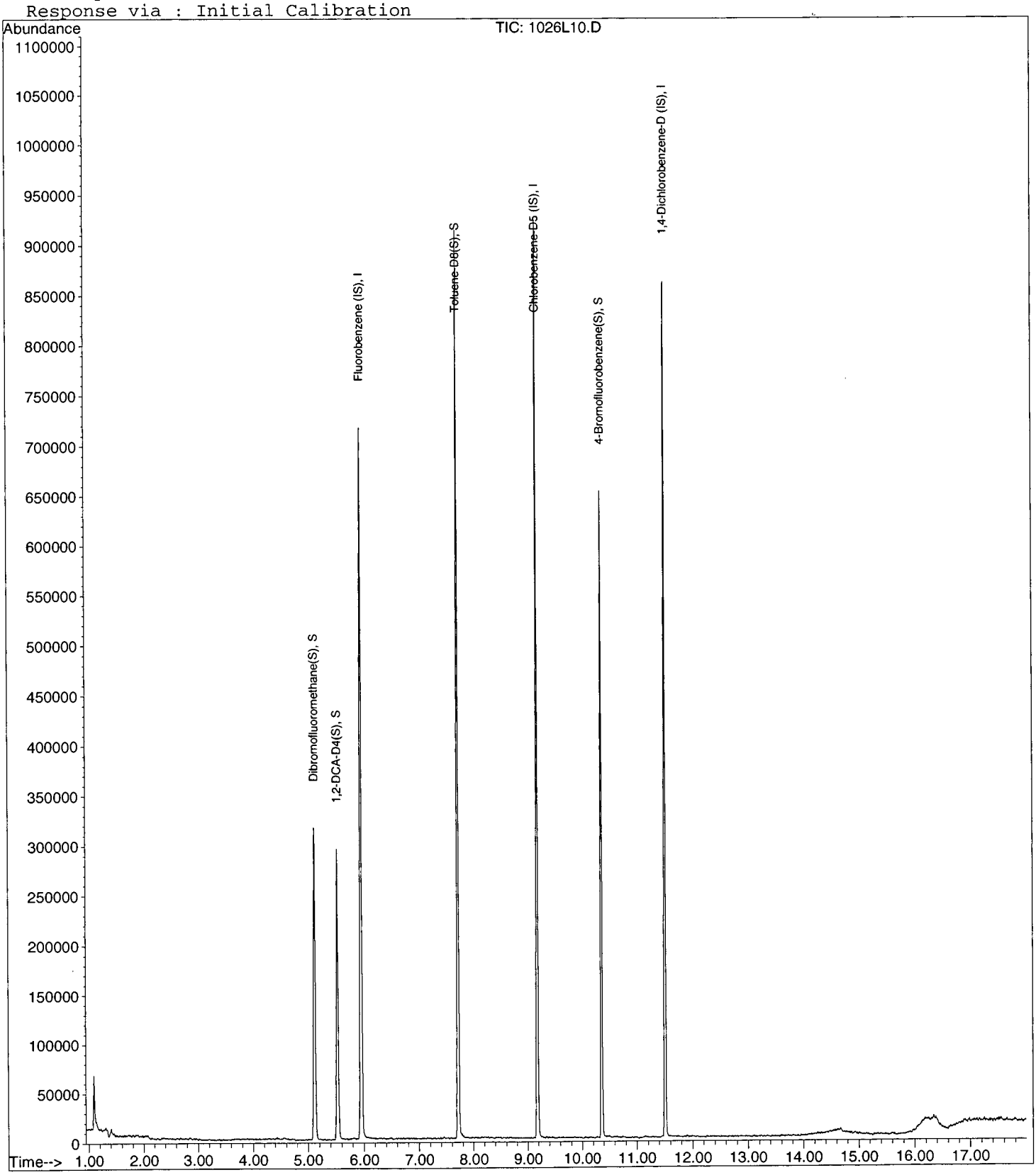
Data File : M:\LOKI\DATA\141024\1026L10.D
Acq On : 26 Oct 14 14:57
Sample : 141026A BLK-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 29 15:08 2014

Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration



# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | 9.15 | 91.5 | 80-130 |
| 1,1,1-TRICHLOROETHANE | 10.00 | 9.54 | 95.4 | 65-130 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | 10.9 | 109 | 65-130 |
| 1,1,2-TRICHLOROETHANE | 10.00 | 9.15 | 91.5 | 75-125 |
| 1,1-DICHLOROETHANE | 10.00 | 8.64 | 86.4 | 70-135 |
| 1,1-DICHLOROETHENE | 10.00 | 9.46 | 94.6 | 70-130 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | 9.50 | 95.0 | 75-125 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | 8.72 | 87.2 | 65-135 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | 10.6 | 106 | 50-130 |
| 1,2-DIBROMOETHANE | 10.00 | 9.54 | 95.4 | 80-120 |
| 1,2-DICHLOROBENZENE | 10.00 | 10.0 | 100 | 70-120 |
| 1,2-DICHLOROETHANE | 10.00 | 10.2 | 102 | 70-130 |
| 1,2-DICHLOROPROPANE | 10.00 | 9.39 | 93.9 | 75-125 |
| 1,3-DICHLOROBENZENE | 10.00 | 10.7 | 107 | 75-125 |
| 1,3-DICHLOROPROPENE (TOTAL) | 20.0 | 18.4 | 92.0 | 55-140 |
| 1,4-DICHLOROBENZENE | 10.00 | 10.4 | 104 | 75-125 |
| 2-BUTANONE | 10.00 | 9.58 | 95.8 | 30-150 |
| 4-METHYL-2-PENTANONE | 10.00 | 8.53 | 85.3 | 60-135 |
| ACETONE | 10.00 | 9.06 | 90.6 | 40-140 |
| BENZENE | 10.00 | 10.2 | 102 | 80-120 |
| BROMODICHLOROMETHANE | 10.00 | 9.43 | 94.3 | 75-120 |
| BROMOFORM | 10.00 | 8.95 | 89.5 | 70-130 |
| BROMOMETHANE | 10.00 | 11.0 | 110 | 30-145 |
| CARBON TETRACHLORIDE | 10.00 | 10.3 | 103 | 65-140 |
| CHLOROBENZENE | 10.00 | 9.77 | 97.7 | 80-120 |
| CHLOROETHANE | 10.00 | 11.4 | 114 | 60-135 |
| CHLOROFORM | 10.00 | 8.92 | 89.2 | 65-135 |
| CHLOROMETHANE | 10.00 | 8.91 | 89.1 | 40-125 |
| CIS-1,2-DICHLOROETHENE | 10.00 | 9.83 | 98.3 | 70-125 |
| DIBROMOCHLOROMETHANE | 10.00 | 9.40 | 94.0 | 60-135 |
| ETHYLBENZENE | 10.00 | 10.4 | 104 | 75-125 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/2014 |
| Analysis Date : | 10/26/2014 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

*Printed: 11/17/2014 3:27:01 PM*
*APPL Standard LCS*

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141026W-05593 LCS - 191309**
Batch ID: #86CRE-141026AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | 9.79 | 97.9 | 50-140 |
| METHYL TERT-BUTYL ETHER | 10.00 | 9.21 | 92.1 | 65-125 |
| METHYLENE CHLORIDE | 10.00 | 9.94 | 99.4 | 55-140 |
| STYRENE | 10.00 | 11.1 | 111 | 65-135 |
| TETRACHLOROETHENE | 10.00 | 9.14 | 91.4 | 45-150 |
| TOLUENE | 10.00 | 10.5 | 105 | 75-120 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | 9.32 | 93.2 | 60-140 |
| TRICHLOROETHENE | 10.00 | 9.30 | 93.0 | 70-125 |
| VINYL CHLORIDE | 10.00 | 7.75 | 77.5 | 50-145 |
| XYLENES (TOTAL) | 30.0 | 31.3 | 104 | 75-130 |
| SURROGATE: 1,2-DICHLOROETHANE-D | 27.7 | 24.3 | 87.7 | 70-120 |
| SURROGATE: 4-BROMOFLUOROBENZ | 22.2 | 26.5 | 119 | 75-120 |
| SURROGATE: DIBROMOFLUOROMETH | 27.2 | 23.9 | 88.0 | 85-115 |
| SURROGATE: TOLUENE-D8 (S) | 26.2 | 27.6 | 106 | 85-120 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | LALLW2.M |
| Extraction Date : | 10/26/2014 |
| Analysis Date : | 10/26/2014 |
| Instrument : | Loki |
| Run : | 1026L05 |
| Initials : | SV |

*Printed: 11/17/2014 3:27:01 PM*
*APPL Standard LCS*

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L05.D Vial: 4
Acq On : 26 Oct 14 12:35 Operator: DG,SV,RS
Sample : 141026A LCS-1WL Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Oct 27 14:44 2014 Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 395328 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 342336 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 219328 | 25.00 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 205484 | 23.86 ppb | 0.00 |
| Spiked Amount 27.165 | | | Recovery = 87.819% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 221268 | 24.25 ppb | 0.00 |
| Spiked Amount 27.695 | | | Recovery = 87.567% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 669448 | 27.59 ppb | 0.00 |
| Spiked Amount 26.150 | | | Recovery = 105.513% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 245134 | 26.51 ppb | 0.00 |
| Spiked Amount 22.231 | | | Recovery = 119.230% | | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 41407 | 8.38 ppb | 95 |
| 3) Freon 114 | 1.10 | 85 | 42122 | 9.38 ppb | 100 |
| 4) Chloromethane | 1.14 | 50 | 71040 | 8.91 ppb | 98 |
| 5) Vinyl chloride | 1.22 | 62 | 75437 | 7.75 ppb | 97 |
| 6) Bromomethane | 1.45 | 94 | 56885 | 11.01 ppb | 95 |
| 7) Chloroethane | 1.53 | 64 | 42336 | 11.39 ppb | 94 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 157465 | 9.92 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 102283 | 8.66 ppb | 100 |
| 10) Acrolein | 2.10 | 56 | 108940 | 122.89 ppb | 92 |
| 11) Acetone | 2.25 | 43 | 19700 | 9.06 ppb | 97 |
| 12) Freon-113 | 2.20 | 101 | 67673 | 9.94 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 104697 | 9.46 ppb | 99 |
| 14) t-Butanol | 2.87 | 59 | 27756 | 114.02 ppb | 99 |
| 15) Acetonitrile | 2.52 | 41 | 110531 | 110.98 ppb | 94 |
| 16) Methyl Acetate | 2.59 | 43 | 60984 | 9.90 ppb | 99 |
| 17) Iodomethane | 2.31 | 142 | 27784 | 11.46 ppb | 92 |
| 18) Acrylonitrile | 2.96 | 52 | 18857 | 8.93 ppb | 87 |
| 19) Methylene chloride | 2.67 | 84 | 80079 | 9.94 ppb | 93 |
| 20) Carbon disulfide | 2.36 | 76 | 184431 | 10.33 ppb | 98 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 162171 | 9.21 ppb | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 71924 | 9.32 ppb | 96 |
| 23) Diisopropyl Ether | 3.71 | 45 | 191840 | 9.29 ppb | 98 |
| 24) 1,1-DCA | 3.53 | 63 | 127377 | 8.64 ppb | 98 |
| 25) Hexane | 3.36 | 57 | 59485 | 10.23 ppb | 95 |
| 26) Vinyl Acetate | 3.71 | 43 | 42048 | 9.23 ppb | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 173049 | 9.94 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 26317 | 9.58 ppb | 97 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 82543 | 9.83 ppb | 94 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 41448 | 11.68 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 140419 | 8.92 ppb | 98 |
| 32) Bromochloromethane | 4.75 | 128 | 40978 | 9.45 ppb | 98 |
| 34) 1,1,1-TCA | 5.10 | 97 | 118260 | 9.54 ppb | 95 |
| 35) Cyclohexane | 5.16 | 41 | 52421 | 10.10 ppb | 89 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 90766 | 10.44 ppb | 94 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 183117 | 11.47 ppb # | 88 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 102773 | 10.30 ppb | 98 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 172309 | 9.99 ppb | 98 |
| 41) 1,2-DCA | 5.62 | 62 | 103352 | 10.22 ppb | 94 |
| 42) Benzene | 5.58 | 78 | 292495 | 10.25 ppb | 98 |
| 43) TCE | 6.38 | 95 | 73100 | 9.30 ppb | 96 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141024\1026L05.D
Acq On : 26 Oct 14 12:35
Sample : 141026A LCS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Oct 27 14:44 2014

Quant Results File: LALLW2.RES

Quant Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| | Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 44) | 2-Pentanone | 6.63 | 43 | 626443 | 124.01 ppb | | 99 |
| 45) | 1,2-Dichloropropane | 6.62 | 63 | 84864 | 9.39 ppb | | 98 |
| 46) | Bromodichloromethane | 6.95 | 83 | 108807 | 9.43 ppb | # | 99 |
| 47) | Methyl Cyclohexane | 6.58 | 83 | 87477 | 10.03 ppb | | 94 |
| 48) | Dibromomethane | 6.75 | 93 | 49174 | 9.14 ppb | | 94 |
| 49) | 2-Chloroethyl vinyl ether | 7.33 | 106 | 5800 | 7.28 ppb | | 90 |
| 50) | MIBK (methyl isobutyl ket | 7.63 | 43 | 51189 | 8.53 ppb | | 97 |
| 51) | 1-Bromo-2-chloroethane | 7.26 | 63 | 62160 | 9.22 ppb | | 99 |
| 52) | Cis-1,3-Dichloropropene | 7.44 | 75 | 114168 | 9.06 ppb | | 93 |
| 53) | Toluene | 7.78 | 91 | 311052 | 10.53 ppb | | 100 |
| 54) | Trans-1,3-Dichloropropene | 8.04 | 75 | 102943 | 9.32 ppb | | 94 |
| 55) | 1,1,2-TCA | 8.21 | 83 | 58442 | 9.15 ppb | | 96 |
| 56) | 2-Hexanone | 8.50 | 43 | 33402 | 8.70 ppb | # | 87 |
| 59) | 1,2-EDB | 8.69 | 107 | 67116 | 9.54 ppb | | 88 |
| 60) | Tetrachloroethene | 8.34 | 166 | 92261 | 9.14 ppb | | 98 |
| 61) | 1-Chlorohexane | 9.22 | 91 | 79024 | 10.27 ppb | | 98 |
| 62) | 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 85284 | 9.15 ppb | | 91 |
| 63) | m&p-Xylene | 9.46 | 106 | 253746 | 21.20 ppb | | 95 |
| 64) | o-Xylene | 9.85 | 106 | 112848 | 10.05 ppb | | 95 |
| 65) | Styrene | 9.86 | 104 | 197591 | 11.14 ppb | | 97 |
| 67) | 1,3-Dichloropropane | 8.38 | 76 | 111502 | 9.56 ppb | | 94 |
| 68) | Dibromochloromethane | 8.60 | 129 | 81891 | 9.40 ppb | | 95 |
| 69) | Chlorobenzene | 9.21 | 112 | 212406 | 9.77 ppb | | 96 |
| 70) | Ethylbenzene | 9.34 | 91 | 317226 | 10.42 ppb | | 99 |
| 71) | Bromoform | 10.02 | 173 | 56319 | 8.95 ppb | | 91 |
| 73) | Isopropylbenzene | 10.22 | 105 | 282426 | 10.15 ppb | | 99 |
| 74) | 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 95110 | 10.91 ppb | | 96 |
| 75) | 1,2,3-Trichloropropane | 10.55 | 110 | 26982 | 9.50 ppb | | 97 |
| 76) | t-1,4-Dichloro-2-Butene | 10.58 | 53 | 17486 | 9.96 ppb | | 92 |
| 77) | Bromobenzene | 10.49 | 156 | 96604 | 10.19 ppb | | 99 |
| 78) | n-Propylbenzene | 10.63 | 91 | 354576 | 10.42 ppb | | 98 |
| 79) | 4-Ethyltoluene | 10.75 | 105 | 325167 | 10.87 ppb | | 98 |
| 80) | 2-Chlorotoluene | 10.70 | 91 | 240297 | 11.00 ppb | | 100 |
| 81) | 1,3,5-Trimethylbenzene | 10.82 | 105 | 293984 | 11.20 ppb | | 92 |
| 82) | 4-Chlorotoluene | 10.81 | 91 | 288723 | 11.12 ppb | | 100 |
| 83) | Tert-Butylbenzene | 11.13 | 119 | 219351 | 10.43 ppb | | 100 |
| 84) | 1,2,4-Trimethylbenzene | 11.18 | 105 | 273459 | 10.77 ppb | | 95 |
| 85) | Sec-Butylbenzene | 11.35 | 105 | 332725 | 10.73 ppb | | 99 |
| 86) | p-Isopropyltoluene | 11.51 | 119 | 289073 | 10.87 ppb | | 98 |
| 87) | Benzyl Chloride | 11.67 | 91 | 127262 | 10.12 ppb | | 99 |
| 88) | 1,3-DCB | 11.44 | 146 | 197395 | 10.73 ppb | | 97 |
| 89) | 1,4-DCB | 11.53 | 146 | 206895 | 10.41 ppb | | 98 |
| 90) | n-Butylbenzene | 11.91 | 91 | 258804 | 10.54 ppb | | 99 |
| 91) | 1,2-DCB | 11.89 | 146 | 181383 | 10.05 ppb | | 98 |
| 92) | Hexachloroethane | 12.14 | 117 | 61810 | 10.79 ppb | | 94 |
| 93) | 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 12280 | 10.62 ppb | | 94 |
| 94) | 1,2,4-Trichlorobenzene | 13.49 | 180 | 106615 | 8.72 ppb | | 99 |
| 95) | Hexachlorobutadiene | 13.68 | 225 | 72414 | 9.79 ppb | | 94 |
| 96) | Naphthalene | 13.72 | 128 | 123488 | 9.16 ppb | | 98 |
| 97) | 1,2,3-Trichlorobenzene | 13.96 | 180 | 110689 | 9.17 ppb | | 95 |

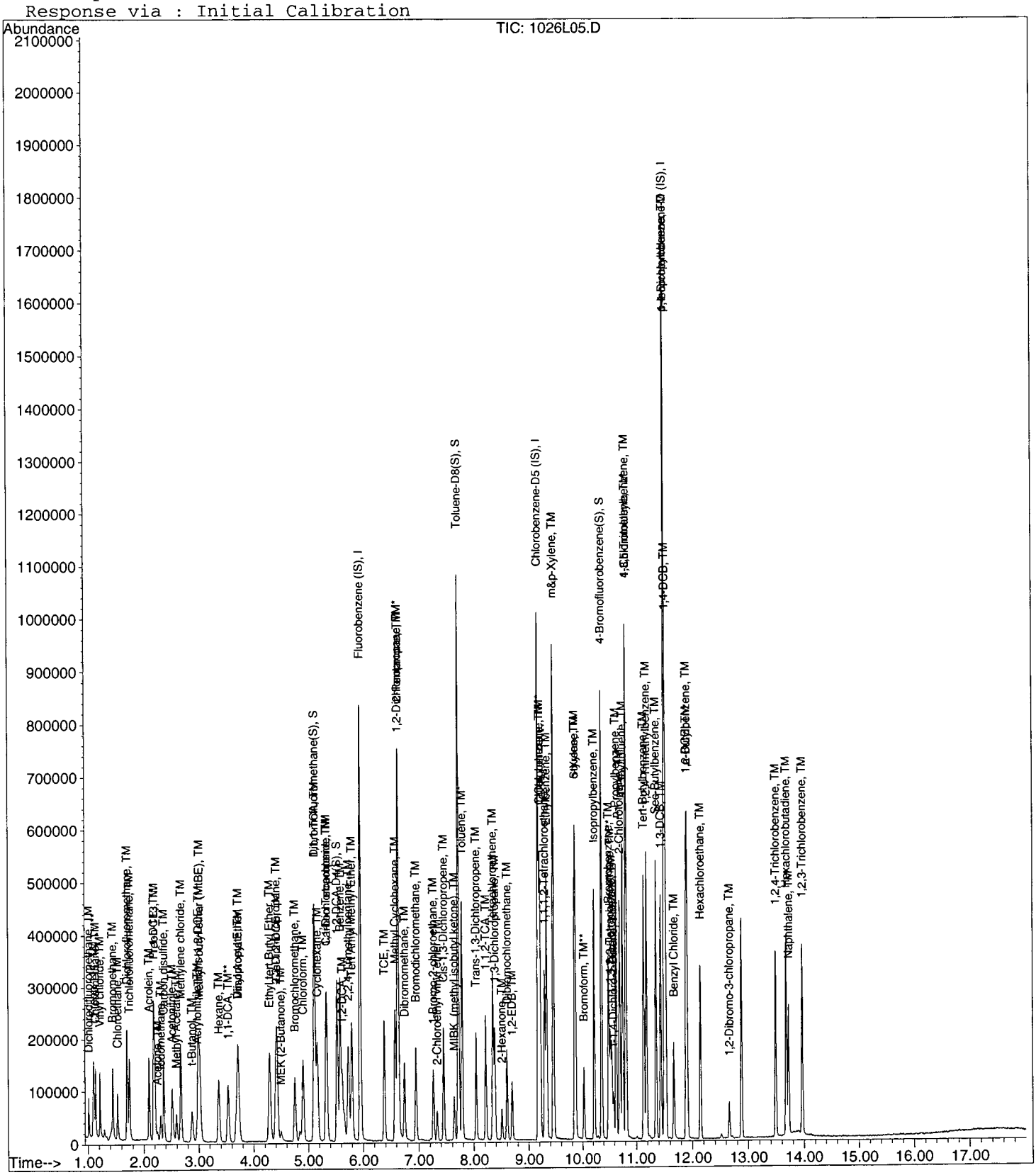
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141024\1026L05.D  Vial: 4
Acq On : 26 Oct 14 12:35  Operator: DG,SV,RS
Sample : 141026A LCS-1WL  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Oct 27 14:44 2014  Quant Results File: LALLW2.RES

Method : M:\LOKI\DATA\141024\LALLW2.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Oct 27 15:42:00 2014
Response via : Initial Calibration

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# Matrix Spike Recoveries

## EPA 8260C WATER

APPL ID: **141117W-05593 MS - 191309**
Batch ID: #86CRE-141026AL
Sample ID: AZ05593
Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | Matrix Result ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | ND | 12.6 | 12.2 | 126 | 122 | 80-130 | 3.2 | 30 |
| 1,1,1-TRICHLOROETHANE | 10.00 | ND | 12.6 | 12.0 | 126 | 120 | 65-130 | 4.9 | 30 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | ND | 13.8 | 13.5 | 138 # | 135 # | 65-130 | 2.2 | 30 |
| 1,1,2-TRICHLOROETHANE | 10.00 | ND | 12.3 | 11.6 | 123 | 116 | 75-125 | 5.9 | 30 |
| 1,1-DICHLOROETHANE | 10.00 | ND | 13.6 | 12.7 | 136 # | 127 | 70-135 | 6.8 | 30 |
| 1,1-DICHLOROETHENE | 10.00 | ND | 12.2 | 11.6 | 122 | 116 | 70-130 | 5.0 | 30 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | ND | 12.2 | 12.3 | 122 | 123 | 75-125 | 0.82 | 30 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | ND | 11.8 | 11.8 | 118 | 118 | 65-135 | 0.0 | 30 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | ND | 9.74 | 10.3 | 97.4 | 103 | 50-130 | 5.6 | 30 |
| 1,2-DIBROMOETHANE | 10.00 | ND | 12.0 | 11.4 | 120 | 114 | 80-120 | 5.1 | 30 |
| 1,2-DICHLOROBENZENE | 10.00 | ND | 12.4 | 11.9 | 124 # | 119 | 70-120 | 4.1 | 30 |
| 1,2-DICHLOROETHANE | 10.00 | ND | 12.6 | 12.2 | 126 | 122 | 70-130 | 3.2 | 30 |
| 1,2-DICHLOROPROPANE | 10.00 | ND | 13.4 | 13.2 | 134 # | 132 # | 75-125 | 1.5 | 30 |
| 1,3-DICHLOROBENZENE | 10.00 | ND | 13.3 | 12.7 | 133 # | 127 # | 75-125 | 4.6 | 30 |
| 1,4-DICHLOROBENZENE | 10.00 | ND | 12.5 | 12.2 | 125 | 122 | 75-125 | 2.4 | 30 |
| 2-BUTANONE | 10.00 | ND | 7.90 | 7.69 | 79.0 | 76.9 | 30-150 | 2.7 | 30 |
| 4-METHYL-2-PENTANONE | 10.00 | ND | 6.78 | 7.21 | 67.8 | 72.1 | 60-135 | 6.1 | 30 |
| ACETONE | 10.00 | ND | 7.59 | 6.94 | 75.9 | 69.4 | 40-140 | 8.9 | 30 |
| BENZENE | 10.00 | ND | 13.4 | 12.9 | 134 # | 129 # | 80-120 | 3.8 | 30 |
| BROMODICHLOROMETHANE | 10.00 | ND | 12.5 | 12.1 | 125 # | 121 # | 75-120 | 3.3 | 30 |
| BROMOFORM | 10.00 | ND | 11.4 | 11.1 | 114 | 111 | 70-130 | 2.7 | 30 |
| BROMOMETHANE | 10.00 | ND | 13.1 | 13.0 | 131 | 130 | 30-145 | 0.77 | 30 |
| CARBON TETRACHLORIDE | 10.00 | ND | 12.1 | 11.7 | 121 | 117 | 65-140 | 3.4 | 30 |
| CHLOROBENZENE | 10.00 | ND | 13.3 | 12.6 | 133 # | 126 # | 80-120 | 5.4 | 30 |
| CHLOROETHANE | 10.00 | ND | 9.53 | 9.51 | 95.3 | 95.1 | 60-135 | 0.21 | 30 |
| CHLOROFORM | 10.00 | ND | 13.0 | 12.5 | 130 | 125 | 65-135 | 3.9 | 30 |
| CHLOROMETHANE | 10.00 | ND | 8.69 | 8.43 | 86.9 | 84.3 | 40-125 | 3.0 | 30 |
| CIS-1,2-DICHLOROETHENE | 10.00 | ND | 12.6 | 12.2 | 126 # | 122 | 70-125 | 3.2 | 30 |
| DIBROMOCHLOROMETHANE | 10.00 | ND | 12.1 | 11.6 | 121 | 116 | 60-135 | 4.2 | 30 |
| ETHYLBENZENE | 10.00 | ND | 14.9 | 14.2 | 149 # | 142 # | 75-125 | 4.8 | 30 |

# = Recovery is outside QC limits.

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | LALLW.M | LALLW.M |
| Extraction Date : | 11/17/2014 | 11/17/2014 |
| Analysis Date : | 11/17/2014 | 11/17/2014 |
| Instrument : | Loki | Loki |
| Run : | 1117L31 | 1117L32 |
| Initials : | SV | |

Comments: _____

*Printed: 11/18/2014 8:47:31 AM*
*APPL MSD SCII*

# Matrix Spike Recoveries

## EPA 8260C WATER

APPL ID: **141117W-05593 MS - 191309**
Batch ID: #86CRE-141026AL
Sample ID: AZ05593
Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | Matrix Result ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | ND | 12.5 | 11.7 | 125 | 117 | 50-140 | 6.6 | 30 |
| METHYL TERT-BUTYL ETHER | 10.00 | ND | 11.2 | 11.2 | 112 | 112 | 65-125 | 0.0 | 30 |
| METHYLENE CHLORIDE | 10.00 | ND | 13.6 | 13.4 | 136 | 134 | 55-140 | 1.5 | 30 |
| STYRENE | 10.00 | ND | 13.1 | 12.5 | 131 | 125 | 65-135 | 4.7 | 30 |
| TETRACHLOROETHENE | 10.00 | ND | 12.8 | 11.8 | 128 | 118 | 45-150 | 8.1 | 30 |
| TOLUENE | 10.00 | ND | 13.9 | 13.4 | 139 # | 134 # | 75-120 | 3.7 | 30 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | ND | 13.2 | 12.8 | 132 | 128 | 60-140 | 3.1 | 30 |
| TRICHLOROETHENE | 10.00 | ND | 12.2 | 12.2 | 122 | 122 | 70-125 | 0.0 | 30 |
| VINYL CHLORIDE | 10.00 | ND | 9.12 | 8.81 | 91.2 | 88.1 | 50-145 | 3.5 | 30 |
| XYLENES (TOTAL) | 30.0 | ND | 43.7 | 41.8 | 146 # | 139 # | 75-130 | 4.4 | 30 |
| SURROGATE: 1,2-DICHLOROETHANE-D | 25.0 | NA | 22.5 | 22.7 | 90.1 | 90.9 | 70-120 | | |
| SURROGATE: 4-BROMOFLUOROBENZE | 22.9 | NA | 26.4 | 25.9 | 115 | 113 | 75-120 | | |
| SURROGATE: DIBROMOFLUOROMETH | 24.0 | NA | 22.7 | 22.5 | 94.5 | 93.7 | 85-115 | | |
| SURROGATE: TOLUENE-D8 (S) | 24.9 | NA | 26.3 | 25.6 | 106 | 103 | 85-120 | | |

# = Recovery is outside QC limits.

Comments:

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | LALLW.M | LALLW.M |
| Extraction Date : | 11/17/2014 | 11/17/2014 |
| Analysis Date : | 11/17/2014 | 11/17/2014 |
| Instrument : | Loki | Loki |
| Run : | 1117L31 | 1117L32 |
| Initials : | SV | |

*Printed: 11/18/2014 8:47:31 AM*
*APPL MSD SCII*

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L31.D
Acq On : 17 Nov 14 22:04
Sample : AZ05593W458 MS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 27
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:31 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 536640 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 438208 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.50 | 152 | 259200 | 25.00 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 277842 | 22.73 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 94.673% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 307642 | 22.46 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 89.892% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 915581 | 26.35 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 105.829% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 338038 | 26.37 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 115.125% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 80633 | 8.80 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 89709 | 10.43 ppb | 89 |
| 4) Chloromethane | 1.14 | 50 | 144604 | 8.69 ppb | 98 |
| 5) Vinyl chloride | 1.22 | 62 | 115793 | 9.12 ppb | 99 |
| 6) Bromomethane | 1.45 | 94 | 72656 | 13.12 ppb | 100 |
| 7) Chloroethane | 1.53 | 64 | 58751 | 9.53 ppb | 98 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 289065 | 12.92 ppb | 97 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 141936 | 8.99 ppb | 94 |
| 10) Acrolein | 2.10 | 56 | 44993 | 72.41 ppb # | 88 |
| 11) Acetone | 2.25 | 43 | 25611 | 7.59 ppb | 99 |
| 12) Freon-113 | 2.20 | 101 | 107929 | 11.66 ppb | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 187570 | 12.19 ppb | 93 |
| 14) t-Butanol | 2.87 | 59 | 23896 | 89.76 ppb | 98 |
| 15) Acetonitrile | 2.51 | 41 | 129457 | 112.90 ppb | 99 |
| 16) Methyl Acetate | 2.59 | 43 | 83403 | 12.03 ppb | 96 |
| 17) Iodomethane | 2.31 | 142 | 23152 | 11.65 ppb | 92 |
| 18) Acrylonitrile | 2.97 | 52 | 30964 | 12.11 ppb | 100 |
| 19) Methylene chloride | 2.67 | 84 | 150149 | 13.64 ppb | 96 |
| 20) Carbon disulfide | 2.36 | 76 | 372562 | 11.59 ppb | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 276436 | 11.20 ppb | 94 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 187357 | 13.22 ppb | 94 |
| 23) Diisopropyl Ether | 3.71 | 45 | 415693 | 13.64 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 264456 | 13.56 ppb | 96 |
| 25) Hexane | 3.36 | 57 | 96409 | 10.69 ppb | 96 |
| 26) Vinyl Acetate | 3.71 | 43 | 90614 | 13.45 ppb | 98 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 321532 | 12.54 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 28162 | 7.90 ppb | 87 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 144863 | 12.61 ppb | 91 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 65040 | 12.32 ppb | 98 |
| 31) Chloroform | 4.90 | 83 | 254240 | 12.98 ppb | 99 |
| 32) Bromochloromethane | 4.75 | 128 | 68246 | 11.60 ppb | 94 |
| 34) 1,1,1-TCA | 5.10 | 97 | 208795 | 12.64 ppb | 98 |
| 35) Cyclohexane | 5.16 | 41 | 96276 | 12.70 ppb | 94 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 163480 | 13.14 ppb | 98 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 277005 | 12.14 ppb | 98 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 183536 | 12.15 ppb | 97 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 282344 | 12.28 ppb | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 183766 | 12.64 ppb | 100 |
| 42) Benzene | 5.58 | 78 | 539326 | 13.41 ppb | 98 |
| 43) TCE | 6.38 | 95 | 128190 | 12.21 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L31.D
Acq On : 17 Nov 14 22:04
Sample : AZ05593W458 MS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 27
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:31 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 44) 2-Pentanone | 6.63 | 43 | 623711 | 96.56 ppb | 100 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 157129 | 13.35 ppb | 97 |
| 46) Bromodichloromethane | 6.95 | 83 | 189877 | 12.50 ppb | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 140968 | 11.59 ppb | 90 |
| 48) Dibromomethane | 6.75 | 93 | 82080 | 11.76 ppb | 93 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 54509 | 6.78 ppb | 99 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 107880 | 12.15 ppb | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 193480 | 11.86 ppb | 95 |
| 53) Toluene | 7.78 | 91 | 562630 | 13.94 ppb | 98 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 168399 | 11.97 ppb | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 96339 | 12.26 ppb | 94 |
| 56) 2-Hexanone | 8.50 | 43 | 32964 | 7.45 ppb | 99 |
| 59) 1,2-EDB | 8.69 | 107 | 104219 | 11.98 ppb | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 144349 | 12.84 ppb | 96 |
| 61) 1-Chlorohexane | 9.22 | 91 | 140083 | 13.59 ppb | 95 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 142846 | 12.60 ppb | 99 |
| 63) m&p-Xylene | 9.46 | 106 | 448503 | 29.46 ppb | 92 |
| 64) o-Xylene | 9.84 | 106 | 201712 | 14.27 ppb | 99 |
| 65) Styrene | 9.86 | 104 | 357468 | 13.07 ppb | 97 |
| 67) 1,3-Dichloropropane | 8.37 | 76 | 189653 | 13.21 ppb | 96 |
| 68) Dibromochloromethane | 8.60 | 129 | 130723 | 12.13 ppb | 98 |
| 69) Chlorobenzene | 9.20 | 112 | 366958 | 13.26 ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 587700 | 14.86 ppb | 95 |
| 71) Bromoform | 10.02 | 173 | 84306 | 11.42 ppb | 100 |
| 73) Isopropylbenzene | 10.22 | 105 | 501825 | 13.89 ppb | 100 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 139186 | 13.79 ppb | 97 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 36846 | 12.20 ppb | 93 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 30039 | 11.67 ppb | 85 |
| 77) Bromobenzene | 10.49 | 156 | 156263 | 12.48 ppb | 99 |
| 78) n-Propylbenzene | 10.63 | 91 | 663648 | 14.10 ppb | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 545891 | 14.96 ppb | 97 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 424481 | 14.80 ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 503334 | 15.25 ppb | 98 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 103752 | 13.79 ppb | 84 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 368349 | 13.93 ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 461745 | 14.40 ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 567088 | 14.80 ppb | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 467515 | 14.35 ppb | 99 |
| 87) Benzyl Chloride | 11.66 | 91 | 106304 | 8.15 ppb | 98 |
| 88) 1,3-DCB | 11.43 | 146 | 302819 | 13.25 ppb | 99 |
| 89) 1,4-DCB | 11.52 | 146 | 313242 | 12.47 ppb | 98 |
| 90) n-Butylbenzene | 11.90 | 91 | 437919 | 13.67 ppb | 99 |
| 91) 1,2-DCB | 11.88 | 146 | 273801 | 12.39 ppb | 97 |
| 92) Hexachloroethane | 12.14 | 117 | 85020 | 9.92 ppb | 90 |
| 93) 1,2-Dibromo-3-chloropropan | 12.65 | 157 | 20199 | 9.74 ppb | 88 |
| 94) 1,2,4-Trichlorobenzene | 13.48 | 180 | 155921 | 11.79 ppb | 98 |
| 95) Hexachlorobutadiene | 13.67 | 225 | 105736 | 12.46 ppb | 94 |
| 96) Naphthalene | 13.71 | 128 | 140224 | 10.04 ppb | 98 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 97248 | 11.62 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

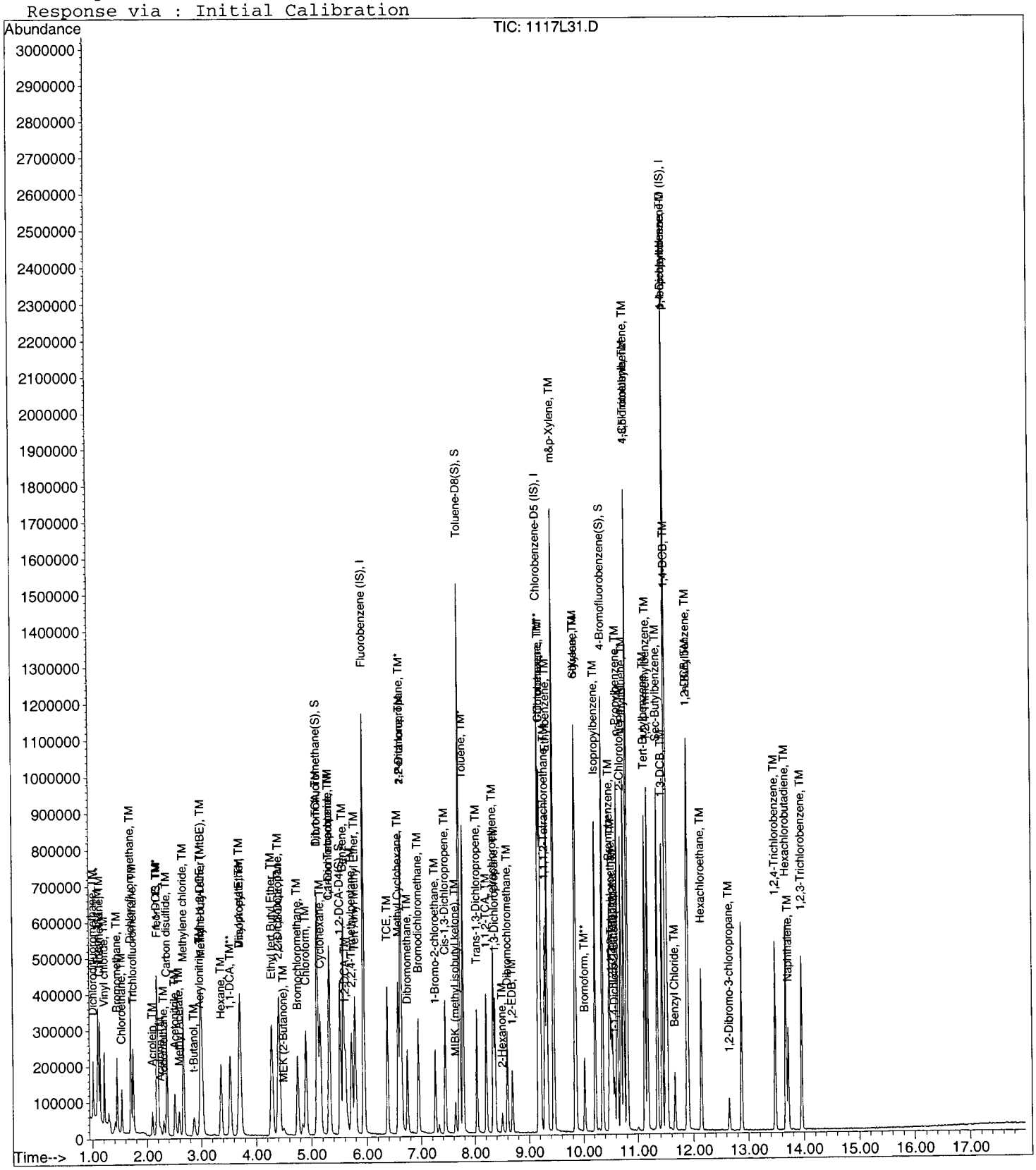
Quantitation Report

Data File : M:\LOKI\DATA\141110\1117L31.D
Acq On : 17 Nov 14 22:04
Sample : AZ05593W458 MS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 27
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:31 2014 Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L32.D
Acq On : 17 Nov 14 22:32
Sample : AZ05593W458 MSD-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 28
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:31 2014 Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 548672 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 456448 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.50 | 152 | 264512 | 25.00 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 280800 | 22.47 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 93.582% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 317937 | 22.70 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 90.865% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 927625 | 25.63 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 102.937% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 346150 | 25.92 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 113.178% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 74408 | 7.94 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 85583 | 9.74 ppb | | 92 |
| 4) Chloromethane | 1.14 | 50 | 143408 | 8.43 ppb | | 98 |
| 5) Vinyl chloride | 1.22 | 62 | 114342 | 8.81 ppb | | 100 |
| 6) Bromomethane | 1.45 | 94 | 73648 | 13.00 ppb | | 95 |
| 7) Chloroethane | 1.53 | 64 | 59949 | 9.51 ppb | | 98 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 281066 | 12.29 ppb | | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 136797 | 8.47 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 44776 | 70.10 ppb | # | 92 |
| 11) Acetone | 2.25 | 43 | 24671 | 6.94 ppb | | 96 |
| 12) Freon-113 | 2.20 | 101 | 103094 | 10.89 ppb | | 98 |
| 13) 1,1-DCE | 2.18 | 61 | 181919 | 11.56 ppb | | 97 |
| 14) t-Butanol | 2.87 | 59 | 23712 | 86.67 ppb | | 97 |
| 15) Acetonitrile | 2.51 | 41 | 128255 | 109.07 ppb | | 97 |
| 16) Methyl Acetate | 2.59 | 43 | 88391 | 12.48 ppb | | 91 |
| 17) Iodomethane | 2.31 | 142 | 26600 | 12.86 ppb | | 96 |
| 18) Acrylonitrile | 2.97 | 52 | 30804 | 11.78 ppb | | 89 |
| 19) Methylene chloride | 2.67 | 84 | 151214 | 13.42 ppb | | 95 |
| 20) Carbon disulfide | 2.37 | 76 | 363895 | 11.07 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 281589 | 11.15 ppb | | 97 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 185140 | 12.78 ppb | | 94 |
| 23) Diisopropyl Ether | 3.71 | 45 | 422494 | 13.56 ppb | | 95 |
| 24) 1,1-DCA | 3.53 | 63 | 253463 | 12.71 ppb | | 99 |
| 25) Hexane | 3.36 | 57 | 93370 | 10.13 ppb | | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 92208 | 13.38 ppb | # | 97 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 318003 | 12.13 ppb | | 100 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 28048 | 7.69 ppb | | 87 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 143730 | 12.23 ppb | | 91 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 62720 | 11.62 ppb | | 98 |
| 31) Chloroform | 4.90 | 83 | 250291 | 12.50 ppb | | 96 |
| 32) Bromochloromethane | 4.75 | 128 | 67662 | 11.25 ppb | | 92 |
| 34) 1,1,1-TCA | 5.10 | 97 | 202634 | 12.00 ppb | | 97 |
| 35) Cyclohexane | 5.16 | 41 | 96461 | 12.45 ppb | | 100 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 159865 | 12.57 ppb | | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 269143 | 11.54 ppb | | 97 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 181521 | 11.75 ppb | | 95 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 282424 | 12.01 ppb | | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 181098 | 12.18 ppb | | 100 |
| 42) Benzene | 5.58 | 78 | 530651 | 12.91 ppb | | 98 |
| 43) TCE | 6.38 | 95 | 131132 | 12.22 ppb | | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L32.D
Acq On : 17 Nov 14 22:32
Sample : AZ05593W458 MSD-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 28
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:31 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 44) 2-Pentanone | 6.63 | 43 | 636139 | 96.32 ppb | | 95 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 158335 | 13.16 ppb | # | 95 |
| 46) Bromodichloromethane | 6.95 | 83 | 188261 | 12.12 ppb | | 96 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 138976 | 11.18 ppb | | 99 |
| 48) Dibromomethane | 6.75 | 93 | 82618 | 11.57 ppb | | 90 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 59257 | 7.21 ppb | | 96 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 110216 | 12.15 ppb | | 96 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 196267 | 11.77 ppb | | 96 |
| 53) Toluene | 7.78 | 91 | 552841 | 13.40 ppb | | 95 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 166812 | 11.60 ppb | | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 93480 | 11.64 ppb | | 94 |
| 56) 2-Hexanone | 8.50 | 43 | 34832 | 7.67 ppb | | 99 |
| 59) 1,2-EDB | 8.69 | 107 | 103023 | 11.37 ppb | | 92 |
| 60) Tetrachloroethene | 8.34 | 166 | 137630 | 11.76 ppb | | 96 |
| 61) 1-Chlorohexane | 9.22 | 91 | 140145 | 13.05 ppb | | 95 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 143885 | 12.19 ppb | | 98 |
| 63) m&p-Xylene | 9.46 | 106 | 440910 | 27.80 ppb | | 93 |
| 64) o-Xylene | 9.85 | 106 | 206774 | 14.04 ppb | | 98 |
| 65) Styrene | 9.86 | 104 | 355814 | 12.51 ppb | | 97 |
| 67) 1,3-Dichloropropane | 8.37 | 76 | 188064 | 12.57 ppb | | 99 |
| 68) Dibromochloromethane | 8.60 | 129 | 130311 | 11.61 ppb | | 98 |
| 69) Chlorobenzene | 9.20 | 112 | 362467 | 12.58 ppb | | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 583049 | 14.16 ppb | | 99 |
| 71) Bromoform | 10.02 | 173 | 85391 | 11.10 ppb | | 95 |
| 73) Isopropylbenzene | 10.22 | 105 | 500245 | 13.57 ppb | | 100 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 139200 | 13.49 ppb | | 94 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 37901 | 12.30 ppb | | 100 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 30404 | 11.58 ppb | | 89 |
| 77) Bromobenzene | 10.49 | 156 | 153203 | 11.99 ppb | | 98 |
| 78) n-Propylbenzene | 10.63 | 91 | 650379 | 13.55 ppb | | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 533962 | 14.34 ppb | | 97 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 417741 | 14.27 ppb | | 98 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 498291 | 14.79 ppb | | 97 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 99048 | 12.90 ppb | | 85 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 362155 | 13.42 ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 466380 | 14.26 ppb | | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 561404 | 14.36 ppb | | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 462208 | 13.91 ppb | | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 104795 | 7.88 ppb | | 98 |
| 88) 1,3-DCB | 11.43 | 146 | 295232 | 12.66 ppb | | 98 |
| 89) 1,4-DCB | 11.52 | 146 | 313899 | 12.24 ppb | | 99 |
| 90) n-Butylbenzene | 11.90 | 91 | 433267 | 13.25 ppb | | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 269032 | 11.93 ppb | | 98 |
| 92) Hexachloroethane | 12.14 | 117 | 84062 | 9.61 ppb | | 92 |
| 93) 1,2-Dibromo-3-chloropropan | 12.65 | 157 | 21790 | 10.30 ppb | | 97 |
| 94) 1,2,4-Trichlorobenzene | 13.48 | 180 | 158724 | 11.76 ppb | | 98 |
| 95) Hexachlorobutadiene | 13.67 | 225 | 101580 | 11.72 ppb | | 95 |
| 96) Naphthalene | 13.71 | 128 | 138176 | 9.71 ppb | | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 96704 | 11.32 ppb | | 95 |

(#) = qualifier out of range (m) = manual integration

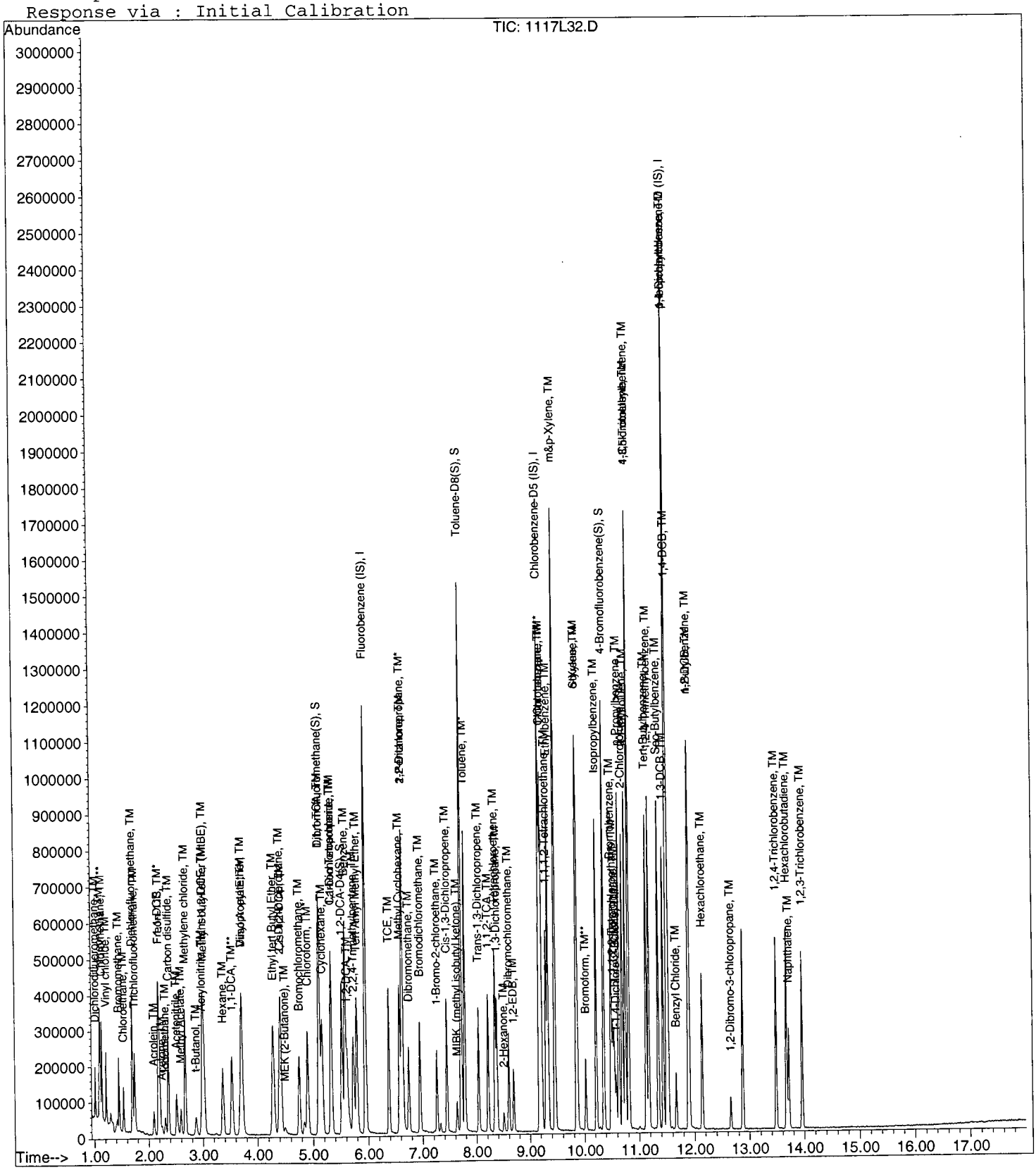
Quantitation Report

Data File : M:\LOKI\DATA\141110\1117L32.D
Acq On : 17 Nov 14 22:32
Sample : AZ05593W458 MSD-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 28
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:31 2014 Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration




245

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L11.D
Acq On : 17 Nov 14 12:42
Sample : 141117A LCS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:51 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 572864 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 474880 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.50 | 152 | 283072 | 25.00 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 290011 | 22.23 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery = | 92.570% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 328005 | 22.43 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery = | 89.784% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 970058 | 25.76 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery = | 103.467% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 355301 | 25.58 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery = | 111.663% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 81779 | 8.36 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 87580 | 9.54 ppb | 90 |
| 4) Chloromethane | 1.14 | 50 | 149268 | 8.41 ppb | 100 |
| 5) Vinyl chloride | 1.21 | 62 | 120506 | 8.89 ppb | 99 |
| 6) Bromomethane | 1.45 | 94 | 57474 | 9.51 ppb | 93 |
| 7) Chloroethane | 1.53 | 64 | 62728 | 9.53 ppb | 97 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 214513 | 8.98 ppb | 96 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 150907 | 8.95 ppb | 99 |
| 10) Acrolein | 2.10 | 56 | 65253 | 103.44 ppb # | 98 |
| 11) Acetone | 2.25 | 43 | 28515 | 8.06 ppb | 96 |
| 12) Freon-113 | 2.20 | 101 | 95550 | 9.67 ppb | 97 |
| 13) 1,1-DCE | 2.18 | 61 | 141312 | 8.60 ppb | 98 |
| 14) t-Butanol | 2.87 | 59 | 30536 | 110.39 ppb | 100 |
| 15) Acetonitrile | 2.51 | 41 | 147039 | 120.78 ppb | 98 |
| 16) Methyl Acetate | 2.60 | 43 | 75033 | 10.10 ppb | 92 |
| 17) Iodomethane | 2.31 | 142 | 28456 | 13.12 ppb | 92 |
| 18) Acrylonitrile | 2.96 | 52 | 25176 | 9.13 ppb | 88 |
| 19) Methylene chloride | 2.67 | 84 | 113092 | 9.35 ppb | 94 |
| 20) Carbon disulfide | 2.36 | 76 | 282267 | 8.22 ppb | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 228237 | 8.66 ppb | 98 |
| 22) Trans-1,2-DCE | 2.99 | 61 | 139642 | 9.23 ppb | 95 |
| 23) Diisopropyl Ether | 3.72 | 45 | 325679 | 10.01 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 193877 | 9.31 ppb | 97 |
| 25) Hexane | 3.36 | 57 | 98308 | 10.22 ppb | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 69951 | 9.72 ppb | 99 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 251652 | 9.20 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 33833 | 8.95 ppb | 92 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 108514 | 8.85 ppb | 93 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 56496 | 10.02 ppb | 96 |
| 31) Chloroform | 4.90 | 83 | 187475 | 8.97 ppb | 98 |
| 32) Bromochloromethane | 4.75 | 128 | 51657 | 8.22 ppb | 100 |
| 34) 1,1,1-TCA | 5.10 | 97 | 160111 | 9.08 ppb | 96 |
| 35) Cyclohexane | 5.16 | 41 | 83851 | 10.36 ppb | 94 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 123687 | 9.31 ppb | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 267413 | 10.98 ppb | 100 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 144096 | 8.93 ppb | 96 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 231540 | 9.43 ppb | 95 |
| 41) 1,2-DCA | 5.62 | 62 | 140480 | 9.05 ppb | 99 |
| 42) Benzene | 5.58 | 78 | 401451 | 9.35 ppb | 97 |
| 43) TCE | 6.38 | 95 | 102007 | 9.10 ppb | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1117L11.D
Acq On : 17 Nov 14 12:42
Sample : 141117A LCS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:51 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 44) 2-Pentanone | 6.63 | 43 | 788151 | 114.30 ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 120147 | 9.56 ppb | | 97 |
| 46) Bromodichloromethane | 6.95 | 83 | 146666 | 9.04 ppb | | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 126272 | 9.73 ppb | | 94 |
| 48) Dibromomethane | 6.74 | 93 | 63654 | 8.54 ppb | | 93 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 67331 | 7.85 ppb | | 99 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 84104 | 8.88 ppb | | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 152916 | 8.78 ppb | | 96 |
| 53) Toluene | 7.78 | 91 | 422081 | 9.80 ppb | | 98 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 136676 | 9.10 ppb | | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 76367 | 9.10 ppb | | 95 |
| 56) 2-Hexanone | 8.50 | 43 | 44998 | 9.26 ppb | # | 97 |
| 59) 1,2-EDB | 8.69 | 107 | 82460 | 8.74 ppb | | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 112933 | 9.27 ppb | | 95 |
| 61) 1-Chlorohexane | 9.22 | 91 | 111879 | 10.02 ppb | | 94 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 112041 | 9.12 ppb | | 97 |
| 63) m&p-Xylene | 9.46 | 106 | 338458 | 20.51 ppb | | 94 |
| 64) o-Xylene | 9.84 | 106 | 152848 | 9.98 ppb | | 99 |
| 65) Styrene | 9.86 | 104 | 263457 | 9.07 ppb | | 96 |
| 67) 1,3-Dichloropropane | 8.37 | 76 | 147017 | 9.45 ppb | | 99 |
| 68) Dibromochloromethane | 8.60 | 129 | 103403 | 8.85 ppb | | 93 |
| 69) Chlorobenzene | 9.20 | 112 | 280199 | 9.35 ppb | | 98 |
| 70) Ethylbenzene | 9.34 | 91 | 444477 | 10.37 ppb | | 97 |
| 71) Bromoform | 10.02 | 173 | 70082 | 8.76 ppb | | 99 |
| 73) Isopropylbenzene | 10.22 | 105 | 379956 | 9.63 ppb | | 96 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 111497 | 9.78 ppb | | 96 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 30557 | 8.98 ppb | | 92 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 27471 | 9.77 ppb | | 84 |
| 77) Bromobenzene | 10.49 | 156 | 118961 | 8.70 ppb | | 94 |
| 78) n-Propylbenzene | 10.63 | 91 | 498500 | 9.76 ppb | | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 415209 | 10.42 ppb | | 96 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 323842 | 10.34 ppb | | 97 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 378197 | 10.49 ppb | | 99 |
| 82) 4-Chlorotoluene | 10.81 | 126 | 82170 | 10.00 ppb | | 91 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 288738 | 10.00 ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 352280 | 10.06 ppb | | 94 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 433032 | 10.35 ppb | | 98 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 364161 | 10.24 ppb | | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 149236 | 10.50 ppb | | 96 |
| 88) 1,3-DCB | 11.43 | 146 | 234036 | 9.38 ppb | | 98 |
| 89) 1,4-DCB | 11.52 | 146 | 246456 | 8.98 ppb | | 98 |
| 90) n-Butylbenzene | 11.90 | 91 | 348645 | 9.96 ppb | | 97 |
| 91) 1,2-DCB | 11.89 | 146 | 212836 | 8.82 ppb | | 99 |
| 92) Hexachloroethane | 12.14 | 117 | 87615 | 9.36 ppb | | 97 |
| 93) 1,2-Dibromo-3-chloropropan | 12.65 | 157 | 19043 | 8.41 ppb | | 92 |
| 94) 1,2,4-Trichlorobenzene | 13.48 | 180 | 130155 | 9.01 ppb | | 99 |
| 95) Hexachlorobutadiene | 13.67 | 225 | 91152 | 9.81 ppb | | 95 |
| 96) Naphthalene | 13.71 | 128 | 120928 | 8.02 ppb | | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 80512 | 8.81 ppb | | 99 |

(#) = qualifier out of range (m) = manual integration

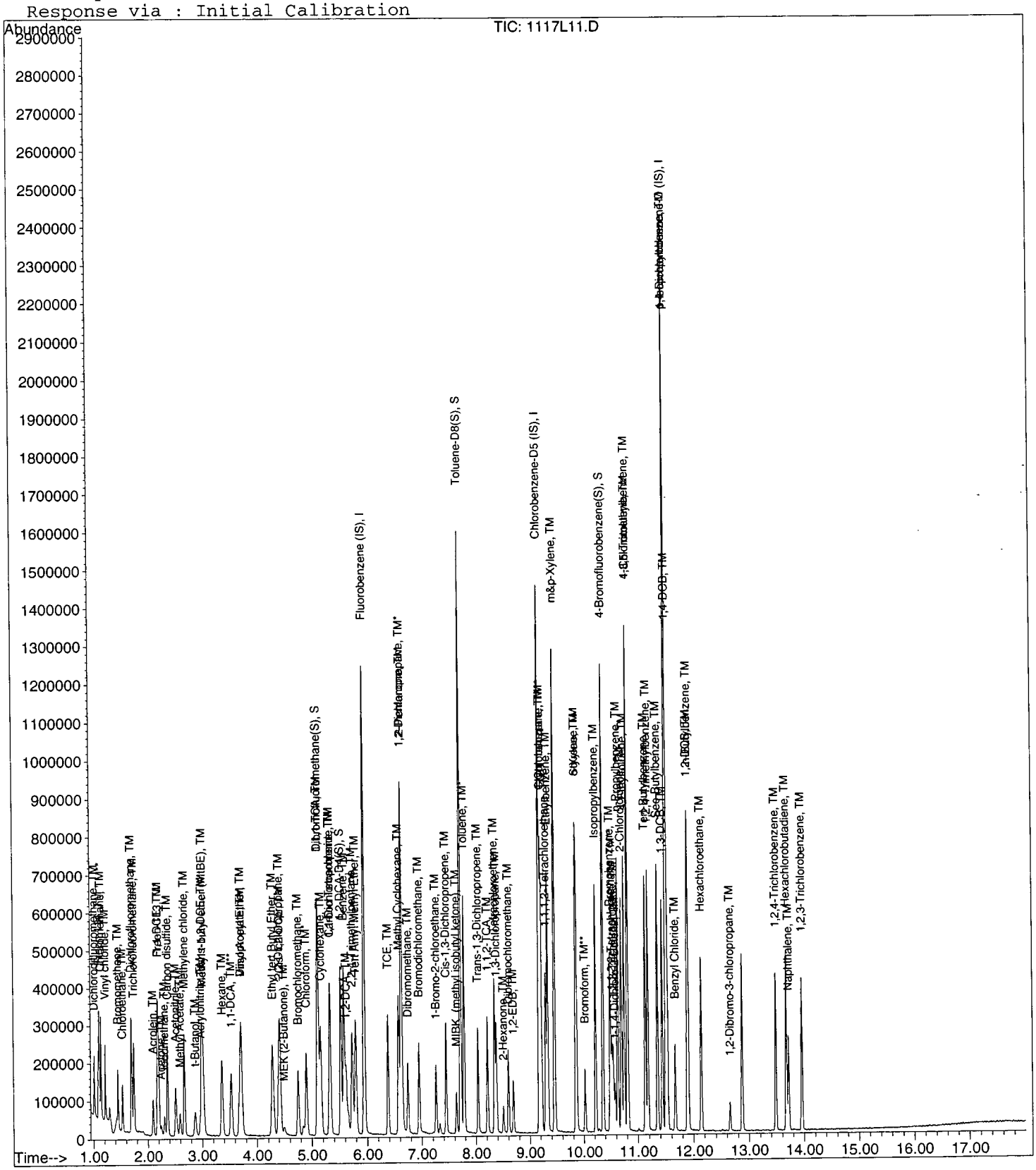
Quantitation Report

Data File : M:\LOKI\DATA\141110\1117L11.D
Acq On : 17 Nov 14 12:42
Sample : 141117A LCS-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:51 2014 Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration






1117L11.D LALLW.M Tue Nov 18 08:51:24 2014 Page 3

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141110\1117L14.D
Acq On : 17 Nov 14 14:07
Sample : 141117A BLK-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:38 2014

Quant Results File: LALLW.RES

Quant Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 494848 | 25.00 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 435648 | 25.00 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.50 | 152 | 207424 | 25.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 280322 | 24.87 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 103.585% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 322472 | 25.53 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 102.184% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 829648 | 24.02 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 96.459% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 267639 | 21.00 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 91.684% | |

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

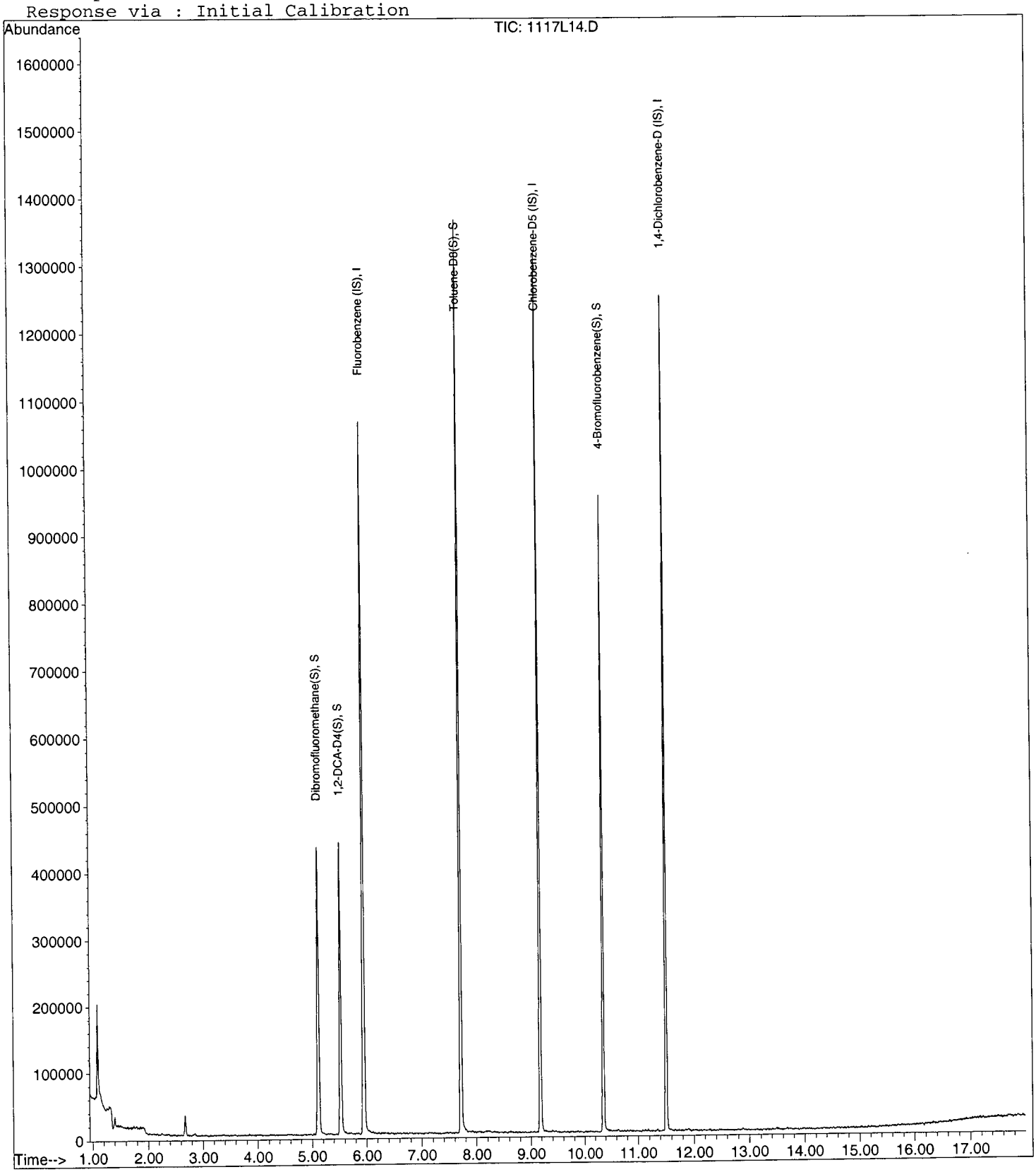
Quantitation Report

Data File : M:\LOKI\DATA\141110\1117L14.D
Acq On : 17 Nov 14 14:07
Sample : 141117A BLK-1WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 8:38 2014 Quant Results File: LALLW.RES

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Mon Nov 17 11:06:38 2014
Response via : Initial Calibration

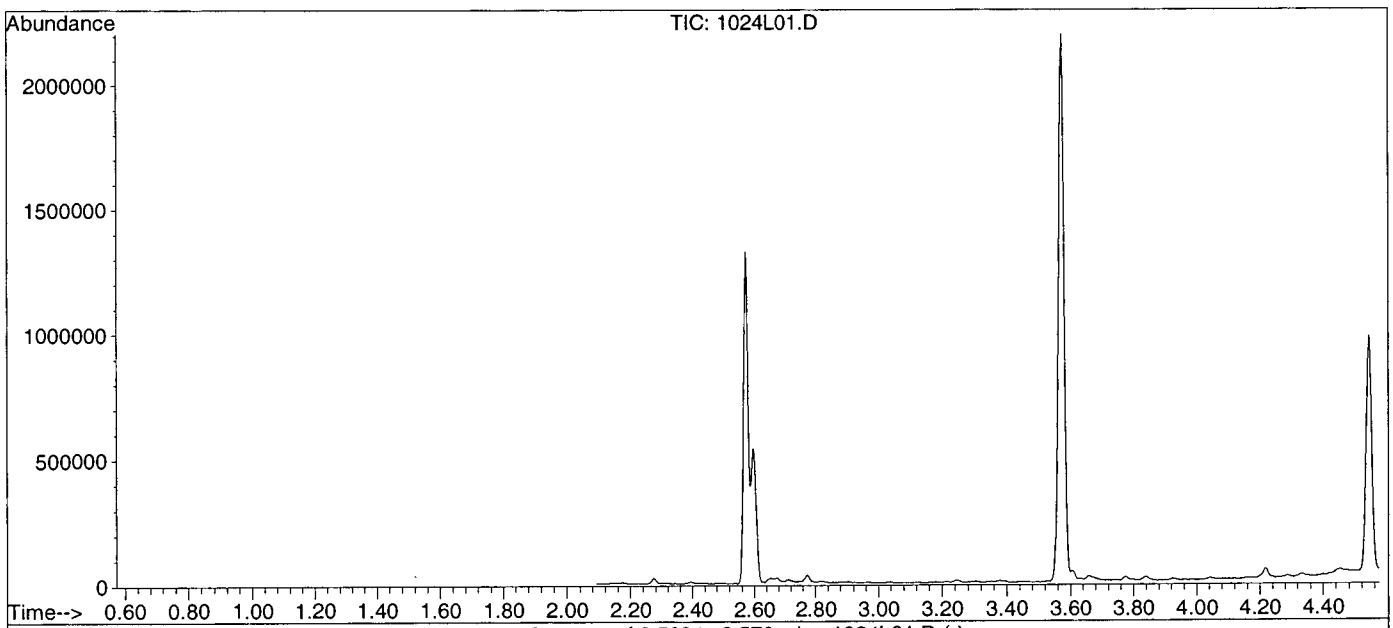


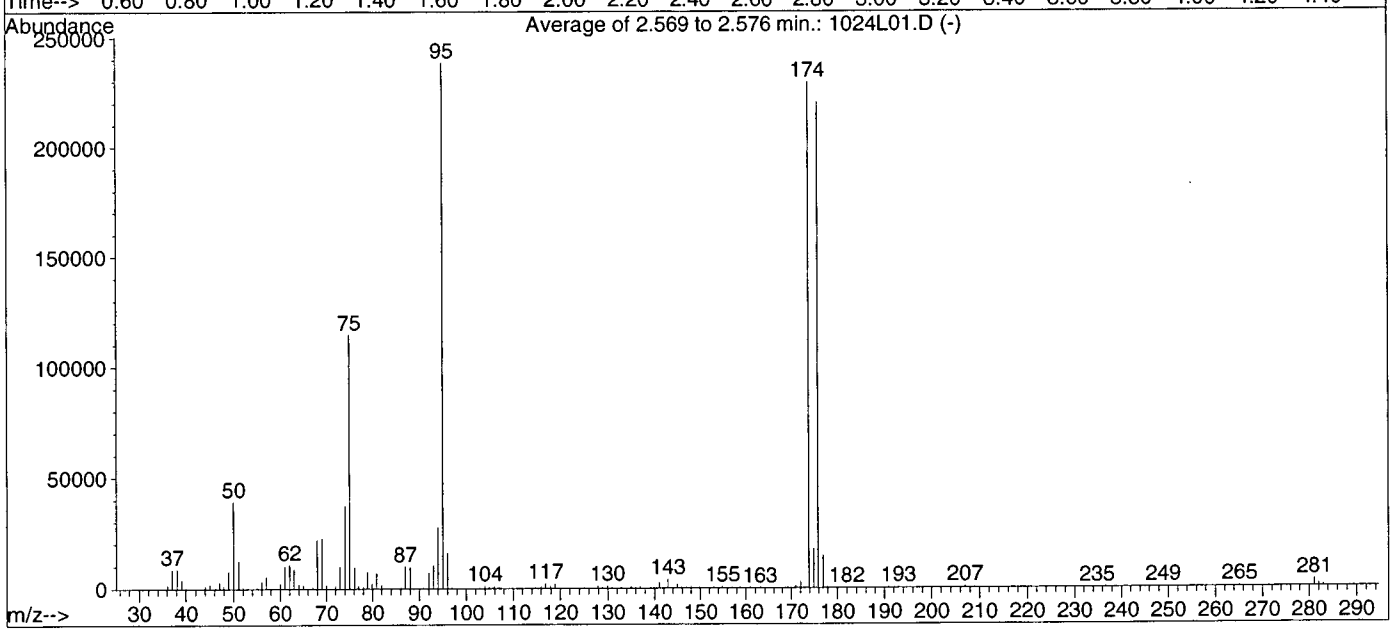
BFB

Data File : M:\LOKI\DATA\141024\1024L01.D
Acq On : 24 Oct 14 10:32
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\YODA\DATA\Y141106\Y1106B.M (RTE Integrator)
Title : EPA 8270C




AutoFind: Scans 149, 150, 151; Background Corrected with Scan 141

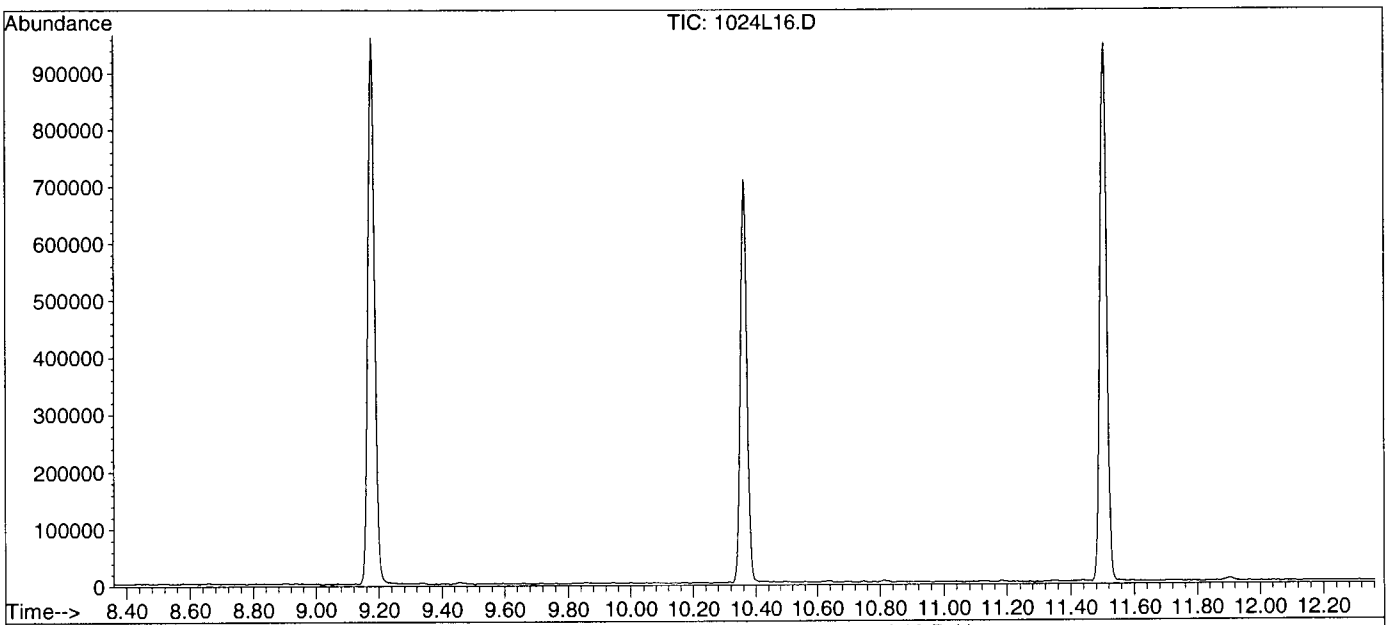
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 16.5 | 39259 | PASS |
| 75 | 95 | 30 | 60 | 48.1 | 114777 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 238635 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 15881 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 96.2 | 229525 | PASS |
| 175 | 174 | 5 | 9 | 7.7 | 17629 | PASS |
| 176 | 174 | 95 | 101 | 96.1 | 220501 | PASS |
| 177 | 176 | 5 | 9 | 6.6 | 14538 | PASS |

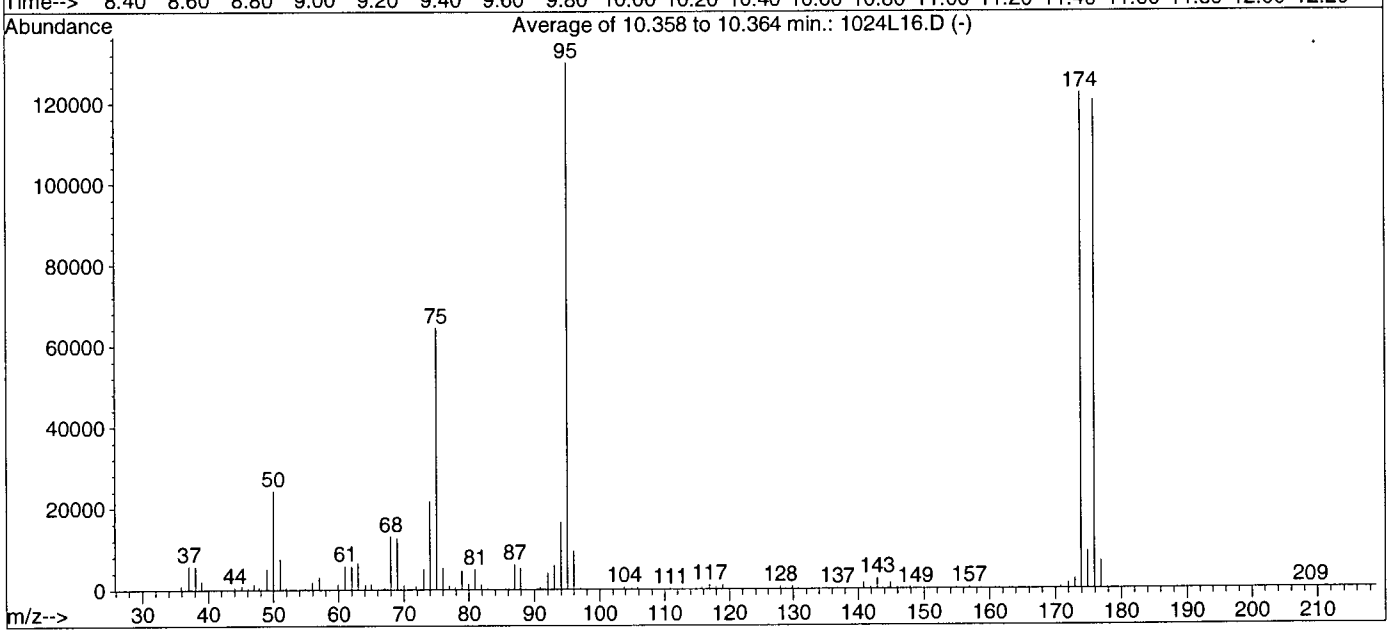
BFB

Data File : M:\LOKI\DATA\141024\1024L16.D
Acq On : 24 Oct 14 17:30
Sample : 25ug/mL BFB Std 09-30-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 15
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2916

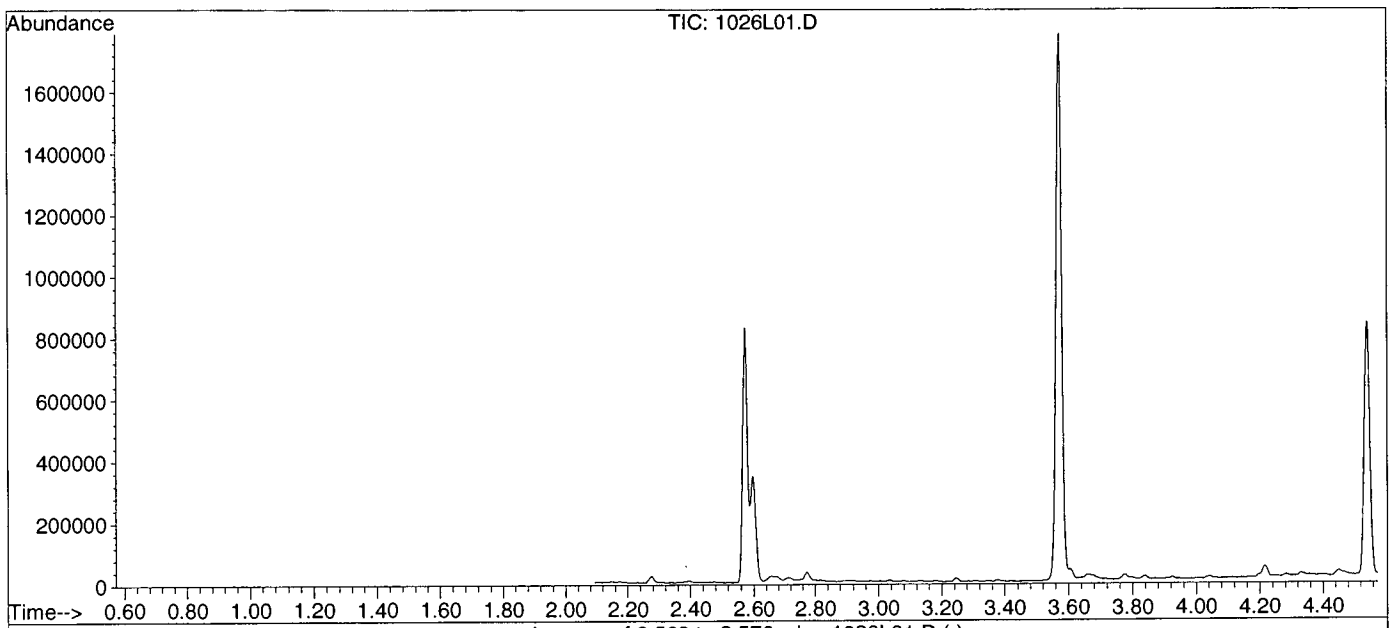
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 18.7 | 24299 | PASS |
| 75 | 95 | 30 | 60 | 49.6 | 64541 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 130128 | PASS |
| 96 | 95 | 5 | 9 | 7.2 | 9314 | PASS |
| 173 | 174 | 0.00 | 2 | 2.0 | 2467 | PASS |
| 174 | 95 | 50 | 100 | 94.1 | 122392 | PASS |
| 175 | 174 | 5 | 9 | 7.5 | 9131 | PASS |
| 176 | 174 | 95 | 101 | 98.5 | 120525 | PASS |
| 177 | 176 | 5 | 9 | 5.6 | 6711 | PASS |

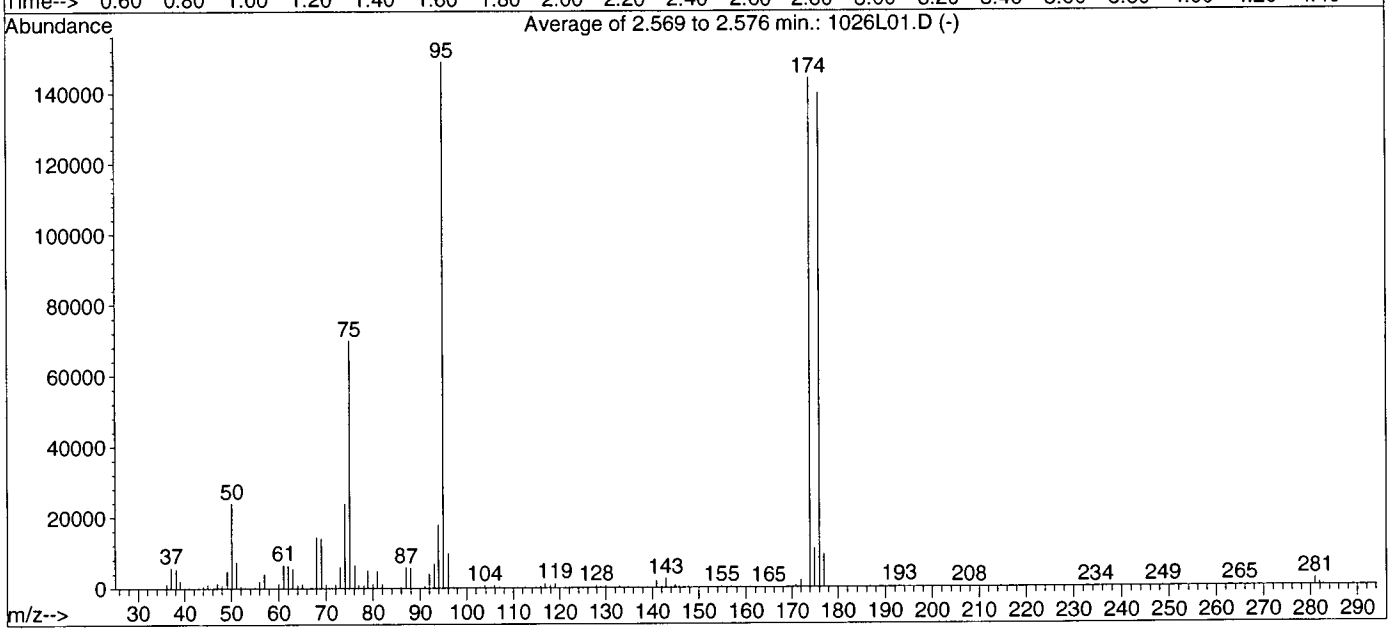
BFB

Data File : M:\LOKI\DATA\141024\1026L01.D
Acq On : 26 Oct 14 10:43
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141024\LALLW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 149, 150, 151; Background Corrected with Scan 140

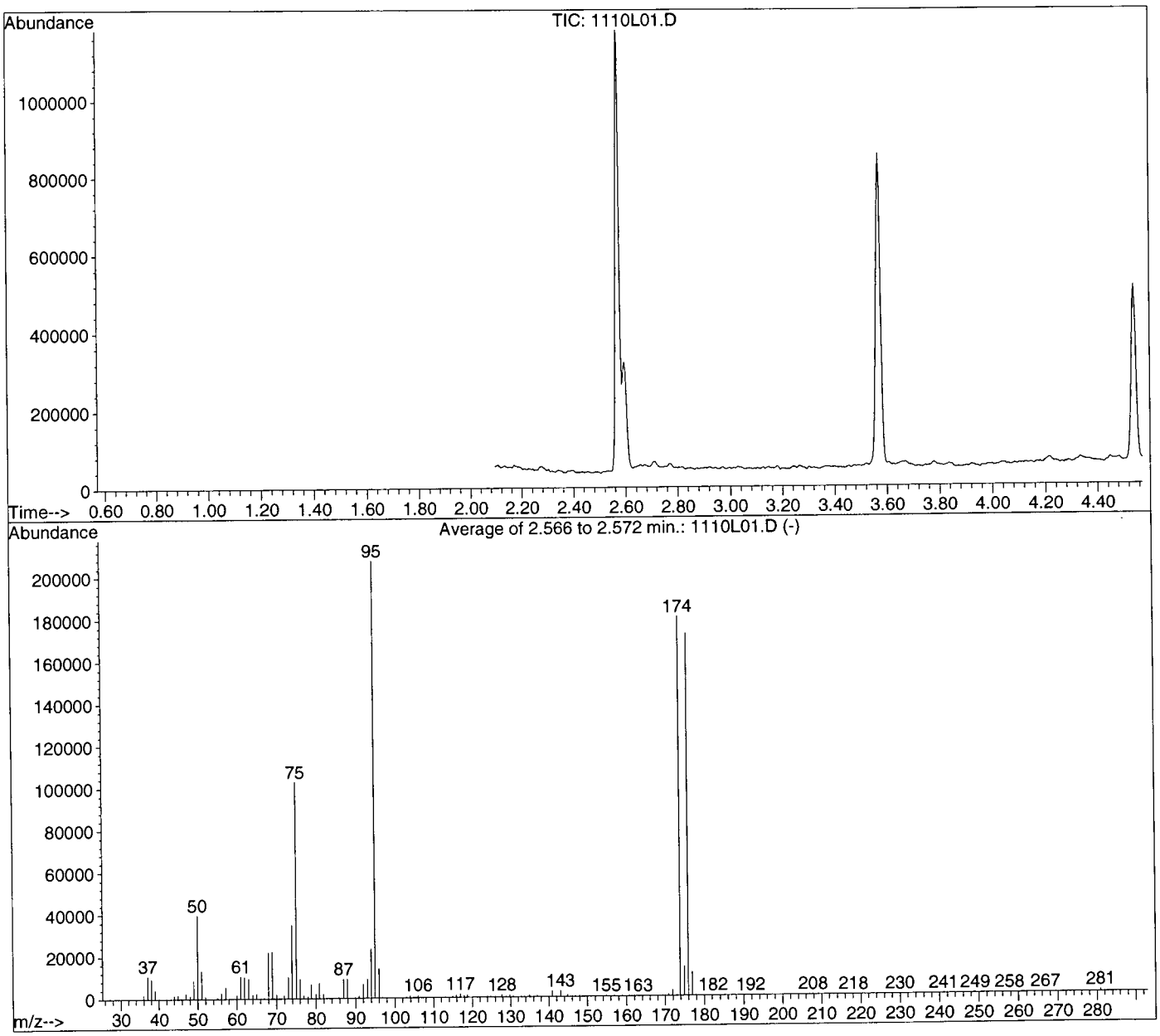
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 16.1 | 23923 | PASS |
| 75 | 95 | 30 | 60 | 46.9 | 69808 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 148779 | PASS |
| 96 | 95 | 5 | 9 | 6.5 | 9651 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 96.9 | 144120 | PASS |
| 175 | 174 | 5 | 9 | 7.6 | 10912 | PASS |
| 176 | 174 | 95 | 101 | 97.0 | 139808 | PASS |
| 177 | 176 | 5 | 9 | 6.7 | 9340 | PASS |

BFB

Data File : M:\LOKI\DATA\141110\1110L01.D
Acq On : 10 Nov 14 16:17
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 148, 149, 150; Background Corrected with Scan 137

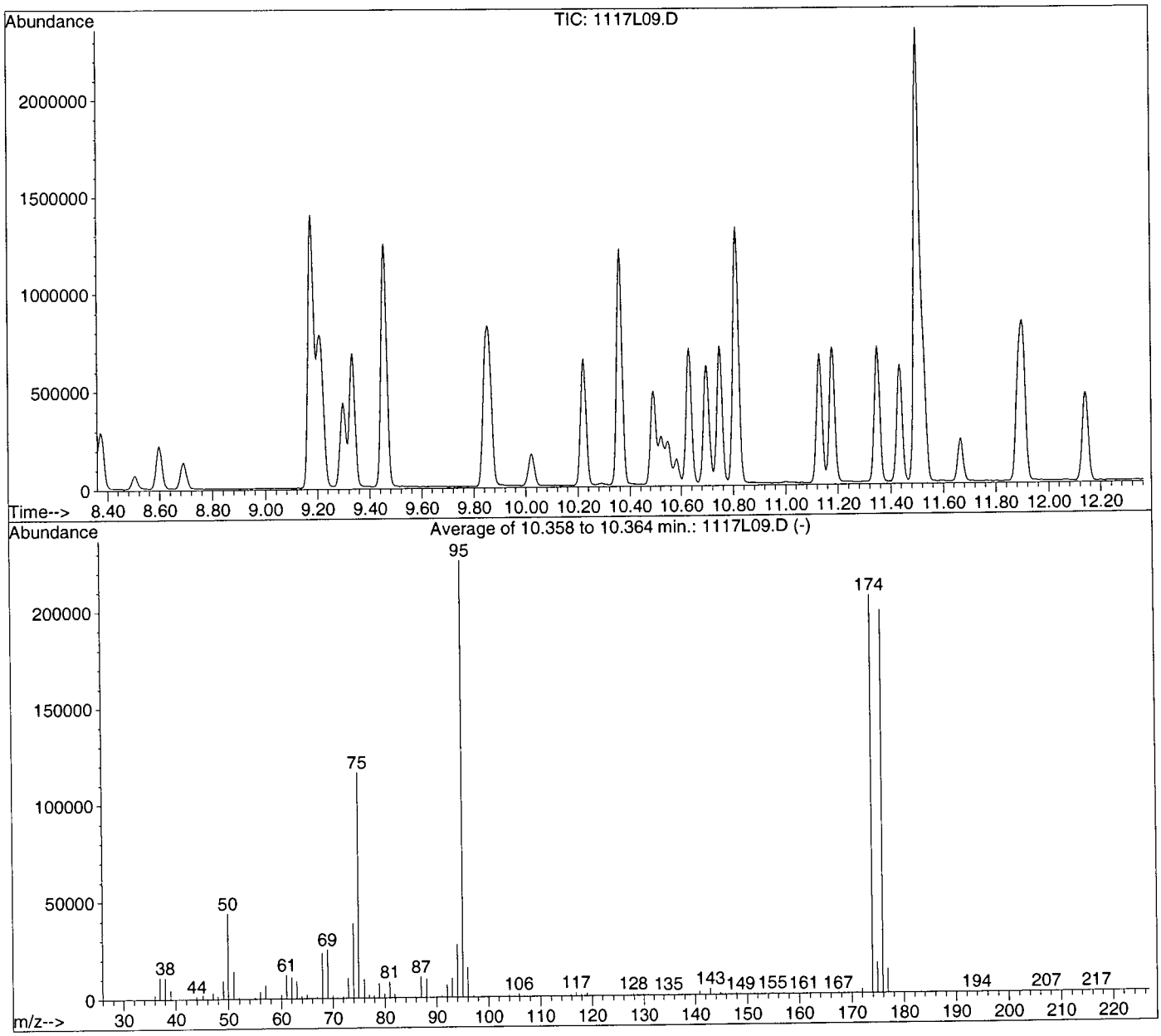
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 19.1 | 39611 | PASS |
| 75 | 95 | 30 | 60 | 49.5 | 102680 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 207616 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 13905 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 86.7 | 180032 | PASS |
| 175 | 174 | 5 | 9 | 7.7 | 13877 | PASS |
| 176 | 174 | 95 | 101 | 95.6 | 172032 | PASS |
| 177 | 176 | 5 | 9 | 6.5 | 11249 | PASS |

BFB

Data File : M:\LOKI\DATA\141110\1117L09.D
Acq On : 17 Nov 14 11:46
Sample : 25ug/mL BFB Std 09-30-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2915

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 19.5 | 44016 | PASS |
| 75 | 95 | 30 | 60 | 51.5 | 116361 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 226005 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 15106 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 91.1 | 205867 | PASS |
| 175 | 174 | 5 | 9 | 7.6 | 15617 | PASS |
| 176 | 174 | 95 | 101 | 96.2 | 198080 | PASS |
| 177 | 176 | 5 | 9 | 6.2 | 12310 | PASS |



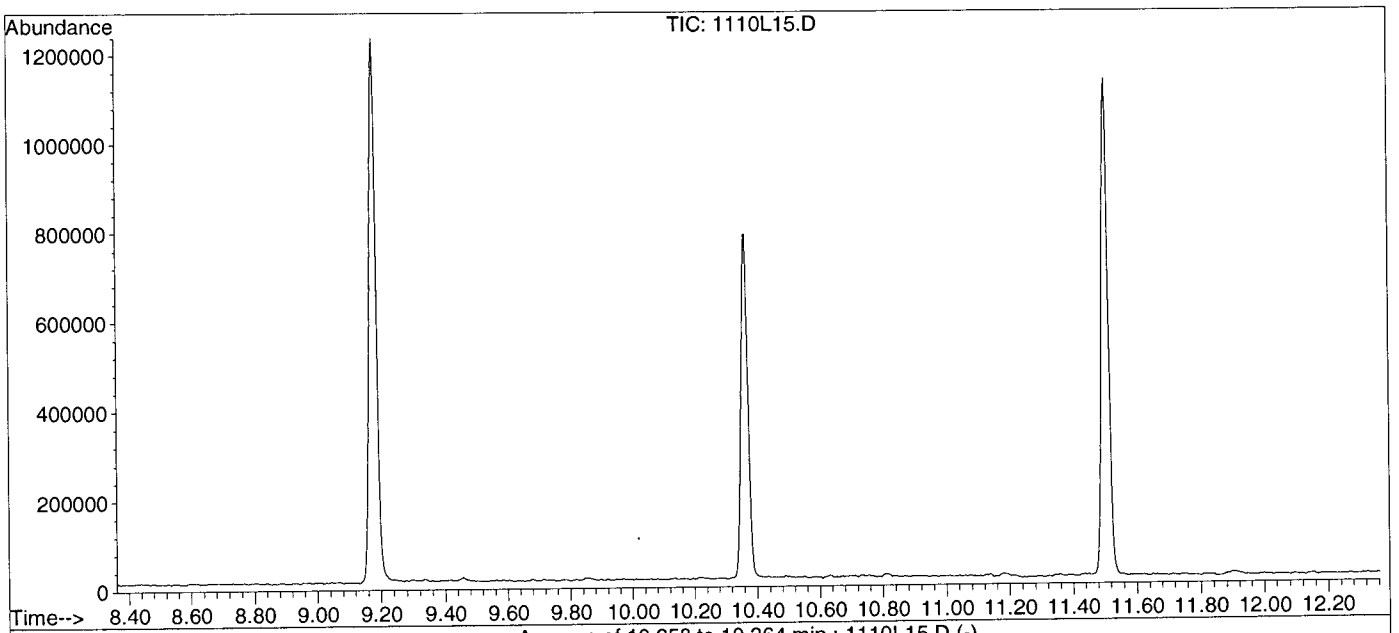
1117L09.D LALLW.M Tue Nov 18 08:34:52 2014

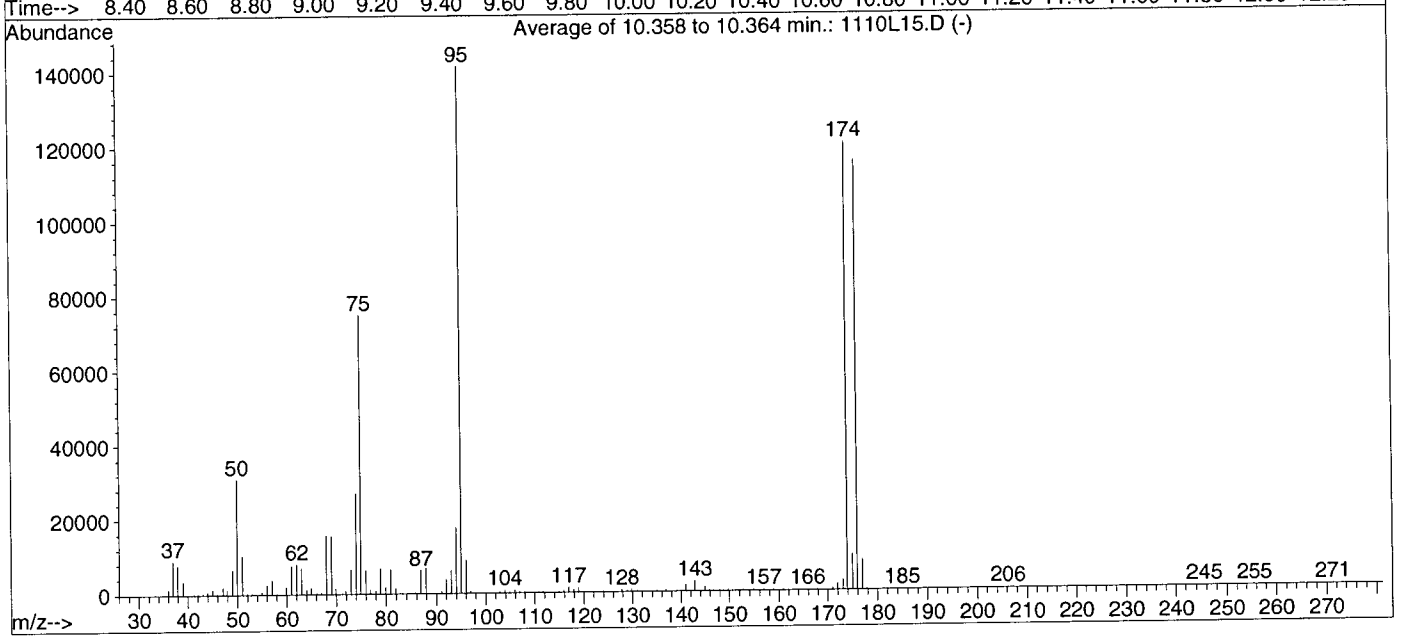
BFB

Data File : M:\LOKI\DATA\141110\1110L15.D
Acq On : 10 Nov 14 22:46
Sample : 25ug/mL BFB Std 09-30-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 14
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LALLW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2915

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 21.9 | 30954 | PASS |
| 75 | 95 | 30 | 60 | 52.9 | 74862 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 141504 | PASS |
| 96 | 95 | 5 | 9 | 6.2 | 8800 | PASS |
| 173 | 174 | 0.00 | 2 | 2.2 | 2684 | FAIL* |
| 174 | 95 | 50 | 100 | 85.0 | 120320 | PASS |
| 175 | 174 | 5 | 9 | 7.9 | 9487 | PASS |
| 176 | 174 | 95 | 101 | 96.0 | 115472 | PASS |
| 177 | 176 | 5 | 9 | 7.1 | 8165 | PASS |



1110L15.D LALLW.M Tue Nov 18 08:34:04 2014

9/26/14 RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **09/26/14U** | | | | | | | |
| **50ug/ml VOC Std#5** | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940-33548 | 09/15/14F | 04/15/17 | 50 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33222 | 09/26/14F | 12/16/15 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1900 |
| **09/26/14V** | | | | | | | |
| **50ug/ml VOC Std#6** | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120023-03-SS | VOC'S 54 COMP | 2000 | 208329-32741 | 09/26/14G | 05/02/15 | 50 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32960 | 09/26/14H | 01/23/15 | 50 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 232116-33844 | 09/15/14G | 10/08/14 | 50 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-33678 | 09/26/14I | 03/12/15 | 100 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33531 | 09/26/14J | 04/07/16 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1650 |
| **09/26/14W** | | | | | | | |
| **250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P** | | | | | | | |
| Exp 10/26/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS) | 2000 | 189667-33305 | 09/03/14K | 05/18/15 | 250 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 234095-33910 | 09/03/14L | 08/25/14 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1700 |

9/29/14 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI

| Exp. Date | 09/30/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date code | µg/L | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | mL |
| 09-29-14A | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 09-29-14B | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 09-29-14C | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 09-29-14D | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 09-29-14E | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 09-29-14F | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 09-29-14G | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 09-29-14H | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 09-29-14I | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

9/29/14 RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp. Date | 09/30/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date code | µg/L | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | mL |
| 09-29-14J | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 09-29-14K | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 09-29-14L | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 09-29-14M | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 09-29-14N | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 09-29-14O | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 09-29-14P | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 09-29-14Q | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

9/30/14 RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| [illegible] | | | | | | | |
| **25ug/ml BFB STD** | | | Conc. | | Date | EXP: | |
| EXP:10/[illegible] | | | ug/ml | Code | CODE | Date | [illegible] |
| O2SI | 020135-03 | 4-Bromofluorobenzene | 2500 | 185[illegible] | 09-26-14A | 09/15/15 | [illegible] |
| J&T Baker | | Purge & Trap MeOH | | 49[illegible] | 09/25/14 | 07/09/19 | 1[illegible] |

9/30/14 RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp. Date | 10/01/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp 10-26-14 | mL |
| 09-30-14B | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 09-30-14C | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 09-30-14D | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 09-30-14E | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 09-30-14F | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 09-30-14G | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 09-30-14H | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 09-30-14I | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

# GC/MS STANDARD PREPARATION BOOK # 63 PAGE # 5

10-8-14

| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/09/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14P | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-08-14Q | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 10-08-14R | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 10-08-14S | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 10-08-14T | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 10-08-14U | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 10-08-14V | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 10-08-14W | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 10-08-14X | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

10/21/14
RS

| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/22/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14P | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-21-14A | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 10-21-14B | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 10-21-14C | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 10-21-14D | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 10-21-14E | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 10-21-14F | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 10-21-14G | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 10-21-14H | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

10/23/14
RS

| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/24/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14P | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp.11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-23-14A | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 10-23-14B | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 10-23-14C | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 10-23-14D | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 10-23-14E | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 10-23-14F | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 10-23-14G | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 10-23-14H | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

10/24/14
RS

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/25/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp:11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp:11-08-14 | Exp:11-08-14 | mL |
| 10-24-14A | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-24-14B | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-24-14C | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-24-14D | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-24-14E | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-24-14F | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-24-14G | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-24-14H | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-24-14I | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

10/24/14
RS

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-MAX | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp. Date: | 10/25/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | mL |
| 10-24-14J | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-24-14K | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-24-14L | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-24-14M | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-24-14N | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-24-14O | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-24-14P | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-24-14Q | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-24-14R | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

*10/27/14 Max water curve on pg. 118 RS 11/04/14

GC/MS STANDARD PREPARATION BOOK # 63 PAGE #

10/08/14 C-
RS

VOC Mix 4-3, 2,000 mg/L, 1 mL
120166-01
Lot # 229587 Storage ≤ 6 Degrees C Expiry 29/May/2016
Solv: P/T Methanol

VOC Mix 4-3, 2000mg/L
Lot #: 229587 - 33670
Rec: 6/3/14 MFR exp. 5/29/16

RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **10/08/14D** | | | | | | | |
| **50ug/ml Vol Work Std #7** | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 120016-03 | Gas Mix | 2000 | 231710-33814 | 10/08/14A | 03/30/17 | 100 |
| 02SI | 020049-02 | HEXACHLOROETHANE | 1000 | 234821-33990 | 09/03/14B | 08/26/16 | 200 |
| 02SI | 020228-02 | Benzyl Chloride | 1000 | 200704-33538 | 09/15/13B | 12/10/14 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3500 |
| **10/08/14E** | | | | | | | |
| **50ug/ml Vol Work Std #1** | | | | | | | |
| Exp:11/08/14 | | | | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 020145-02-02 | 2-CEVE | 2000 | 229586-33689 | 09/26/14D | 06/03/17 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1950 |
| **10/08/14F** | | | | | | | |
| **50ug/ml Vol Work Std #8** | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 122039-02 | Volatile Mix, 20-29 | 2000 | 210086-32534 | 09/26/14B | 06/06/15 | 100 |
| 02SI | 120023-03 | VOC'S-54 COMP | 2000 | 216122-32921 | 10/08/14B | 10/11/15 | 100 |
| 02SI | 020232-02 | Vinyl Acetate | 2000 | 229682-33659 | 09/03/14E | 08/28/14 | 100 |
| 02SI | 020620-02 | n-Hexane | 1000 | 195505-33674 | 09/26/13C | 09/09/17 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3500 |
| **10/08/14G** | | | | | | | |
| **50ug/ml Vol Work Std #2** | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| Supplier | ID # | ID | ug/ml | | | | |
| 02SI | 121020-05 | HSL'S-Ketone Solution | 2000 | 232379-33883 | 09/26/14E | 10/10/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3900 |
| | | **10/08/14H** | | | | | |
| | | **5ug/ml Vol Work Std #9** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #7 | | **10/08/14D** | 11/08/14 | 200 | |
| | | 50ug/ml Vol Work Std #8 | | **10/08/14F** | 11/08/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1600 | |
| | | **10/08/14I** | | | | | |
| | | **5ug/ml Vol Work Std #10** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #1 | | **10/08/14E** | 11/08/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1800 | |
| | | **10/08/14J** | | | | | |
| | | **5ug/ml Vol Work Std #12** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #2 | | **10/08/14G** | 11/08/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1800 | |
| **10/08/14K** | | | | | | | |
| **50ug/ml 8260 Surrogate** | | | Conc. | | Date | Exp. | |
| Exp:11/08/14 | | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120002-01 | 8260B Surr Solution | 2000 | 185763-33556 | 10/06/14B | 02/19/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3900 |
| **10/08/14L** | | | | | | | |
| **5.0ug/ml 8260 Surrogate** | | | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml 8260 Surrogate | | **10/08/14K** | 11/08/14 | 200 | |
| J&T Brand | | Purge & Trap MeOH | | 09/25/14 | 07/09/18 | 1800 | |
| **10/08/14M** | | | | | | | |
| **250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P** | | | | | | | |
| Exp:11/08/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| 02SI | 120166-01 | Volatile Mix 4-3 | 2000 | 229254-33670 | 10/08/14C | 05/29/16 | 500 |
| 02SI | 020229-09 | Acrolein | 10000 | 235659-34043 | 09/15/14E | 10/20/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 3400 |

10/08/14
RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10/08/14N | | | | | | | |
| 50ug/ml VOC Std#5 | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | | | Conc | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940 33548 | 09/15/14F | 04/15/17 | 50 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33222 | 09/26/14F | 12/16/15 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1900 |
| 10/08/14O | | | | | | | |
| 50ug/ml VOC Std#6 | | | | | | | |
| Exp:11/08/14 | | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120023-03-SS | VOC'S 54 COMP. | 2000 | 208329-32741 | 09/26/14G | 05/02/15 | 50 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32960 | 09/26/14H | 01/23/15 | 50 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 232116-33844 | 09/15/14G | 10/08/14 | 50 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-33678 | 09/26/14I | 03/12/15 | 100 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33531 | 09/26/14J | 04/07/16 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1650 |
| 10/08/14P | | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P | | | | | | | |
| Exp:11/08/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS) | 2000 | 189667-33305 | 09/03/14K | 05/18/15 | 250 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 234095-33910 | 09/03/14L | 08/25/14 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 07/09/18 | 1700 |

10/08/14 RS

See THOR 10/8/14 Soil curve on page 112 - DAB 10/21/14

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-MAX | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp:11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp.11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | mL |
| 10-10-14A | 0 1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-10-14B | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-10-14C | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-10-14D | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-10-14E | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-10-14F | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-10-14G | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-10-14H | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-10-14I | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

10/10/14 RS

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 10-08-14H | 10-08-14I | 10-08-14J | 10-08-14L | 10-08-14D | 10-08-14F | 10-08-14E | 10-08-14G | 10-08-14K | 10-08-14M | w/P&T H2O |
| Date/code | µg/L | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp 11-08-14 | Exp.11-08-14 | Exp 11-08-14 | mL |
| 10-10-14J | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-10-14K | 0 3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-10-14L | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-10-14M | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-10-14N | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-10-14O | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-10-14P | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-10-14Q | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-10-14R | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

10/10/14 RS

10/13/14 RS

A-

EPA Method 502/524
Fortification Solution, 3-1,
1000 mg/L, 1 ml
122450-02
Lot # 212292
Storage ≤ -10 Degrees C
Expiry 7/23/15
Solv: P/T Methanol
R&D only, not licensed commercially
Made in the USA

EPA Method 502/524 Fortification
Lot # 212292 - 33765
Rec: 7/25/13 MFG exp. 7/23/15

RS

11/10/14
RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **11/10/14D** | | | | | | | |
| **50ug/ml Vol Work Std #7** | | | | | | | |
| Exp:12/10/14 | | | | | Date | Exp. | |
| | | | Conc. | | | | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 120016-03 | Gas Mix | 2000 | 231710-33816 | 11/10/14A | 03/30/17 | 100 |
| 02SI | 020049-02 | HEXACHLOROETHANE | 1000 | 234821-33991 | 10/28/14B | 08/26/16 | 200 |
| 02SI | 020228-02 | Benzyl Chloride | 1000 | 227320-33830 | 10/28/13C | 04/28/16 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| **11/10/14E** | | | | | | | |
| **50ug/ml Vol Work Std #1** | | | | | | | |
| Exp:12/10/14 | | | | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 020145-02-02 | 2-CEVE | 2000 | 229586-33691 | 10/28/14D | 06/03/17 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1950 |
| **11/10/14F** | | | | | | | |
| **50ug/ml Vol Work Std #8** | | | | | | | |
| Exp:12/10/14 | | | | | Date | Exp. | |
| | | | Conc. | | | | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 122039-02 | Volatile Mix, 20-29 | 2000 | 212173-32728 | 10/28/14E | 07/22/15 | 100 |
| 02SI | 120023-03 | VOC'S-54 COMP | 2000 | 216122-32922 | 10/28/14F | 10/11/15 | 100 |
| 02SI | 020232-02 | Vinyl Acetate | 2000 | 229682-33660 | 10/28/14G | 08/28/14 | 100 |
| 02SI | 020620-02 | n-Hexane | 1000 | 195505-33675 | 11/10/13B | 09/09/17 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| **11/10/14G** | | | | | | | |
| **50ug/ml Vol Work Std #2** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| Supplier | ID # | ID | ug/ml | | | | |
| 02SI | 121020-05 | HSL'S-Ketone Solution | 2000 | 232379-33874 | 10/20/14B | 07/14/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| | | **11/10/14H** | | | | | |
| | | **5ug/ml Vol Work Std #9** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #7 | | **11/10/14D** | 11/28/14 | 200 | |
| | | 50ug/ml Vol Work Std #8 | | **11/10/14F** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1600 | |
| | | **11/10/14I** | | | | | |
| | | **5ug/ml Vol Work Std #10** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #1 | | **11/10/14E** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |
| | | **11/10/14J** | | | | | |
| | | **5ug/ml Vol Work Std #12** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #2 | | **11/10/14G** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |
| **11/10/14K** | | | | | | | |
| **50ug/ml 8260 Surrogate** | | | | | Date | Exp. | |
| | | | Conc. | | | | |
| Exp:12/10/14 | | | ug/ml | Lot # | Code | Date | uL |
| 02SI | 120002-01 | 8260B Surr Solution | 2000 | 185763-33557 | 10/28/14H | 02/19/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| **11/10/14L** | | | | | | | |
| **5.0ug/ml 8260 Surrogate** | | | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml 8260 Surrogate | | **11/10/14K** | 11/28/14 | 200 | |
| J&T Brand | | Purge & Trap MeOH | | 10/15/14 | 07/09/18 | 1800 | |
| **11/10/14M** | | | | | | | |
| **250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P** | | | | | | | |
| Exp:12/10/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| 02SI | 120166-01 | Volatile Mix 4-3 | 2000 | 229254-33997 | 11/10/14C | 05/29/16 | 500 |
| 02SI | 020229-09 | Acrolein | 10000 | 237721-34134 | 10/20/14D | 11/18/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3400 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **11/10/14N** | | | | | | | |
| **50ug/ml VOC Std#5** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940-33548 | 09/15/14F | 04/15/17 | 50 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33222 | 09/26/14F | 12/16/15 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1900 |
| **11/10/14O** | | | | | | | |
| **50ug/ml VOC Std#6** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120023-03-SS | VOC'S 54 COMP. | 2000 | 208329-32741 | 09/26/14G | 05/02/15 | 50 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32960 | 09/26/14H | 01/23/15 | 50 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 232116-33844 | 09/15/14G | 10/08/14 | 50 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-33678 | 09/26/14I | 03/12/15 | 100 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33531 | 09/26/14J | 04/07/16 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1650 |
| **11/10/14P** | | | | | | | |
| **250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P** | | | | | | | |
| Exp:12/10/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS) | 2000 | 189667-33305 | 09/03/14K | 05/18/15 | 250 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 234095-33910 | 09/03/14L | 08/25/14 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1700 |

11/10/14
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|---|---|---|---|---|---|---|---|
| **11/10/14Q** | | | | | | | |
| **50ug/ml Vol Work Std #7-B** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03 | Gas Mix | 2000 | 231710-33816 | 11/10/14A | 03/30/17 | 100 |
| O2SI | 020049-02 | HEXACHLOROETHANE | 1000 | 234821-33991 | 10/28/14B | 08/26/16 | 200 |
| O2SI | 020228-02 | Benzyl Chloride | 1000 | 227320-33830 | 10/28/13C | 04/28/16 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| **11/10/14R** | | | | | | | |
| **50ug/ml Vol Work Std #1-B** | | | | | | | |
| Exp:12/10/14 | | | | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 020145-02-02 | 2-CEVE | 2000 | 229586-33691 | 10/28/14D | 06/03/17 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1950 |
| **11/10/14S** | | | | | | | |
| **50ug/ml Vol Work Std #8-B** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 122039-02 | Volatile Mix, 20-29 | 2000 | 212173-32728 | 10/28/14E | 07/22/15 | 100 |
| O2SI | 120023-03 | VOC'S-54 COMP | 2000 | 216122-32922 | 10/28/14F | 10/11/15 | 100 |
| O2SI | 020232-02 | Vinyl Acetate | 2000 | 229682-33660 | 10/28/14G | 08/28/14 | 100 |
| O2SI | 020620-02 | n-Hexane | 1000 | 195505-33675 | 11/10/13B | 09/09/17 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| **11/10/14T** | | | | | | | |
| **50ug/ml Vol Work Std #2-B** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| Supplier | ID # | ID | ug/ml | | | | |
| O2SI | 121020-05 | HSL'S-Ketone Solution | 2000 | 232379-33874 | 10/20/14B | 07/14/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| | | **11/10/14U** | | | | | |
| | | **5ug/ml Vol Work Std #9-B** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #7 | | **11/10/14Q** | 11/28/14 | 200 | |
| | | 50ug/ml Vol Work Std #8 | | **11/10/14S** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1600 | |
| | | **11/10/14V** | | | | | |
| | | **5ug/ml Vol Work Std #10-B** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #1 | | **11/10/14R** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |
| | | **11/10/14W** | | | | | |
| | | **5ug/ml Vol Work Std #12-B** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #2 | | **11/10/14T** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |

11/10/14
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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11/10/14X | | | | | | | |
| 50ug/ml 8260 Surrogate-B | | | Conc. | | Date | Exp. | |
| Exp:12/10/14 | | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120002-01 | 8260B Surr Solution | 2000 | 185763-33557 | 10/28/14H | 02/19/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| 11/10/14Y | | | | | | | |
| 5.0ug/ml 8260 Surrogate-B | | | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml 8260 Surrogate | | 11/10/14X | 11/28/14 | 200 | |
| J&T Brand | | Purge & Trap MeOH | | 10/15/14 | 07/09/18 | 1800 | |
| 11/10/14Z | | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P-B | | | | | | | |
| Exp:12/10/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01 | Volatile Mix 4-3 | 2000 | 229254-33997 | 11/10/14C | 05/29/16 | 500 |
| O2SI. | 020229-09 | Acrolein | 10000 | 237721-34134 | 10/20/14D | 11/18/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3400 |

11/10/14
RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI

| Exp. Date: | 11/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 11-10-14U | 11-10-14V | 11-10-14W | 11-10-14Y | 11-10-14Q | 11-10-14S | 11-10-14R | 11-10-14T | 11-10-14X | 11-10-14Z | w/P&T H2O |
| Date/code | µg/L | Exp 12-10-14 | Exp 12-10-14 | Exp.12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp.12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp.12-10-14 | mL |
| 11-10-14AA | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 11-10-14AB | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 11-10-14AC | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 11-10-14AD | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 11-10-14AE | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 11-10-14AF | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 11-10-14AG | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 11-10-14AH | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

11/10/14
RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp: Date: | 11/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 11-10-14H | 11-10-14I | 11-10-14J | 11-10-14L | 11-10-14D | 11-10-14F | 11-10-14E | 11-10-14G | 11-10-14K | 11-10-14M | w/P&T H2O |
| Date/code | µg/L | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp.12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | mL |
| 11-10-14AI | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 11-10-14AJ | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 11-10-14AK | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 11-10-14AL | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 11-10-14AM | 30 | 30 | 30 | 30 | 30 | n/a | n/a | n/a | n/a | n/a | 4.2 | 5 |
| 11-10-14AN | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 11-10-14AO | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 11-10-14AP | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 11-10-14AQ | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

11/10/14
RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp: Date: | 11/12/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 11-10-14U | 11-10-14V | 11-10-14W | 11-10-14Y | 11-10-14Q | 11-10-14S | 11-10-14R | 11-10-14T | 11-10-14X | 11-10-14Z | w/P&T H2O |
| Date/code | µg/L | Exp 12-10-14 | Exp 12-10-14 | Exp.12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp.12-10-14 | mL |
| 11-11-14A | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 11-11-14B | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 11-11-14C | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 11-11-14D | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 11-11-14E | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 11-11-14F | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 11-11-14G | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 11-11-14H | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

11/11/14
RS

Butane Solution, 2,000 mg/L, 1 ml

021009-02

Lot # 223481 | Storage ≤-10 Degrees C | Expiry 3/7/17

Solv: P/T Methanol

For R&D only, not human consumption. Refer to the TSA.

Butane

Lot #: 223481 - 34025

Rec: 9/9/14 MFR exp. 3/7/17

11/12/14
RS

# Injection Log

Directory: M:\LOKI\DATA\141024\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 1 | 1024L01.D | 1 | 25ug/mL BFB Std 09-30-14 | 2uL | 24 Oct 14 10:32 |
| 2 | 4 | 1024L05.D | 1 | 0.1ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 12:19 |
| 3 | 5 | 1024L06.D | 1 | 0.3ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 12:47 |
| 4 | 6 | 1024L07.D | 1 | 0.5ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 13:16 |
| 5 | 7 | 1024L08.D | 1 | 1.0ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 13:44 |
| 6 | 8 | 1024L09.D | 1 | 5.0ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 14:12 |
| 7 | 9 | 1024L10.D | 1 | 10ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 14:41 |
| 8 | 10 | 1024L11.D | 1 | 20ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 15:09 |
| 9 | 11 | 1024L12.D | 1 | 40ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 15:37 |
| 10 | 12 | 1024L13.D | 1 | 100ug/L Vol Std 10-24-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 16:05 |
| 11 | 15 | 1024L16.D | 1 | 25ug/mL BFB Std 09-30-14 | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 17:30 |
| 12 | 16 | 1024L17.D | 1 | 10ug/L Std 10-24-14(CCV) | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 17:59 |
| 13 | 17 | 1024L18.D | 1 | 10ug/L Std 10-24-14(SS) | 10mL w/5uL IS&S:10-06-14 | 24 Oct 14 18:27 |
| 14 | 1 | 1026L01.D | 1 | 25ug/mL BFB Std 09-30-14 | 2uL | 26 Oct 14 10:43 |
| 15 | 3 | 1026L04.D | 1 | 10ug/L Std 10-26-14(CCV) | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 12:07 |
| 16 | 4 | 1026L05.D | 1 | 141026A LCS-1WL | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 12:35 |
| 17 | 9 | 1026L10.D | 1 | 141026A BLK-1WL | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 14:57 |
| 18 | 12 | 1026L13.D | 1 | AZ05594W01 | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 16:22 |
| 19 | 17 | 1026L18.D | 1 | AZ05593W01 | 10mL w/5uL IS&S:10-06-14 | 26 Oct 14 18:43 |

# Injection Log

Directory: M:\LOKI\DATA\141110\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 1 | 1110L01.D | 1 | 25ug/mL BFB Std 09-30-14 | 2uL | 10 Nov 14 16:17 |
| 2 | 4 | 1110L05.D | 1 | 0.3ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 18:04 |
| 3 | 5 | 1110L06.D | 1 | 0.5ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 18:32 |
| 4 | 6 | 1110L07.D | 1 | 1.0ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 19:01 |
| 5 | 7 | 1110L08.D | 1 | 5.0ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 19:29 |
| 6 | 8 | 1110L09.D | 1 | 10ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 19:57 |
| 7 | 9 | 1110L10.D | 1 | 20ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 20:25 |
| 8 | 10 | 1110L11.D | 1 | 40ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 20:54 |
| 9 | 11 | 1110L12.D | 1 | 100ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 21:22 |
| 10 | 14 | 1110L15.D | 1 | 25ug/mL BFB Std 09-30-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 22:46 |
| 11 | 15 | 1110L16.D | 1 | 10ug/L Std 11-10-14(CCV) | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 23:14 |
| 12 | 16 | 1110L17.D | 1 | 10ug/L Std 11-10-14(SS) | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 23:42 |
| 13 | 5 | 1117L09.D | 1 | 25ug/mL BFB Std 09-30-14 | 10mL w/5uL IS&S:10-06-14 | 17 Nov 14 11:46 |
| 14 | 6 | 1117L10.D | 1 | 10ug/L Vol Std 11-17-14 | 10mL w/5uL IS&S:10-06-14 | 17 Nov 14 12:14 |
| 15 | 7 | 1117L11.D | 1 | 141117A LCS-1WL | 10mL w/5uL IS&S:10-06-14 | 17 Nov 14 12:42 |
| 16 | 10 | 1117L14.D | 1 | 141117A BLK-1WL | 10mL w/5uL IS&S:10-06-14 | 17 Nov 14 14:07 |
| 17 | 27 | 1117L31.D | 1 | AZ05593W458 MS-1WL | 10mL w/5uL IS&S:10-06-14 | 17 Nov 14 22:04 |
| 18 | 28 | 1117L32.D | 1 | AZ05593W458 MSD-1WL | 10mL w/5uL IS&S:10-06-14 | 17 Nov 14 22:32 |

74701

# RSK-175

APPL, INC.

# RSK-175
# QC Summary

APPL, INC.

# Method Blank
## MEE

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141022W-05388 - 191410**
Batch ID: #RSK50-141022A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 10/22/14 | 10/22/14 |

Quant Method: RSK175Q.M
Run #: 1022F004
Instrument: Frodo
Sequence: 140305
Initials: LF

*GC SC-Blank-REG MDLs*
*Printed: 11/02/14 9:34:26 PM*

# Laboratory Control Spike Recoveries

## MEE

APPL ID: **141022W-05388 LCS - 191410**
Batch ID: #RSK50-141022A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| METHANE | 26.7 | 26.5 | 25.7 | 99.3 | 96.3 | 72-125 | 3.1 | 30 |

Comments:

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | RSK175Q.M | RSK175Q.M |
| Extraction Date : | 10/22/14 | 10/22/14 |
| Analysis Date : | 10/22/14 | 10/22/14 |
| Instrument : | Frodo | Frodo |
| Run : | 1022F002 | 1022F003 |
| Initials : | LF | |



*Printed: 11/02/14 9:34:28 PM*
*APPL Standard LCSD*

# RSK 175

Form 4

## Blank Summary

Lab Name: APPL, Inc. SDG No: 74701

Case No: 74701 Date Analyzed: 10/22/14

Matrix: WATER Instrument: Frodo

Blank ID: 141022A-BLK Time Analyzed: 2014

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141022A-LCS | Lab Control Spike | 1022F002 | 10/22/14 2005 |
| 141022A-LCSD | Lab Control SpikeD | 1022F003 | 10/22/14 2010 |
| 141022A-BLK | Blank | 1022F004 | 10/22/14 2014 |
| AZ05593 | RHMW06-GW-01 | 1022F015 | 10/22/14 2145 |

Comments: Batch: #RSK50-141022A

*Printed: 11/02/14 9:34:21 PM*
*Form 4, Blank Summary*

# RSK-175
# Sample Data

APPL, INC.

# MEE

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW06-GW-01**
Sample Collection Date: 10/21/14

ARF: 74701
**APPL ID: AZ05593**
QCG: #RSK50-141022A-191410

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| RSK 175 | METHANE | 1.7 | 1.0 | 0.45 | 0.25 | ug/L | 10/22/14 | 10/22/14 |

Quant Method: RSK175Q.M
Run #: 1022F015
Instrument: Frodo
Sequence: 140305
Dilution Factor: 1
Initials: LF

*Printed: 11/02/14 9:34:25 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F015.D Vial: 15
Acq On : 22 Oct 2014 21:45 Operator: lsf
Sample : AZ05593W03 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 26 20:25 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.90 | 1023 | 1.702 ppb |

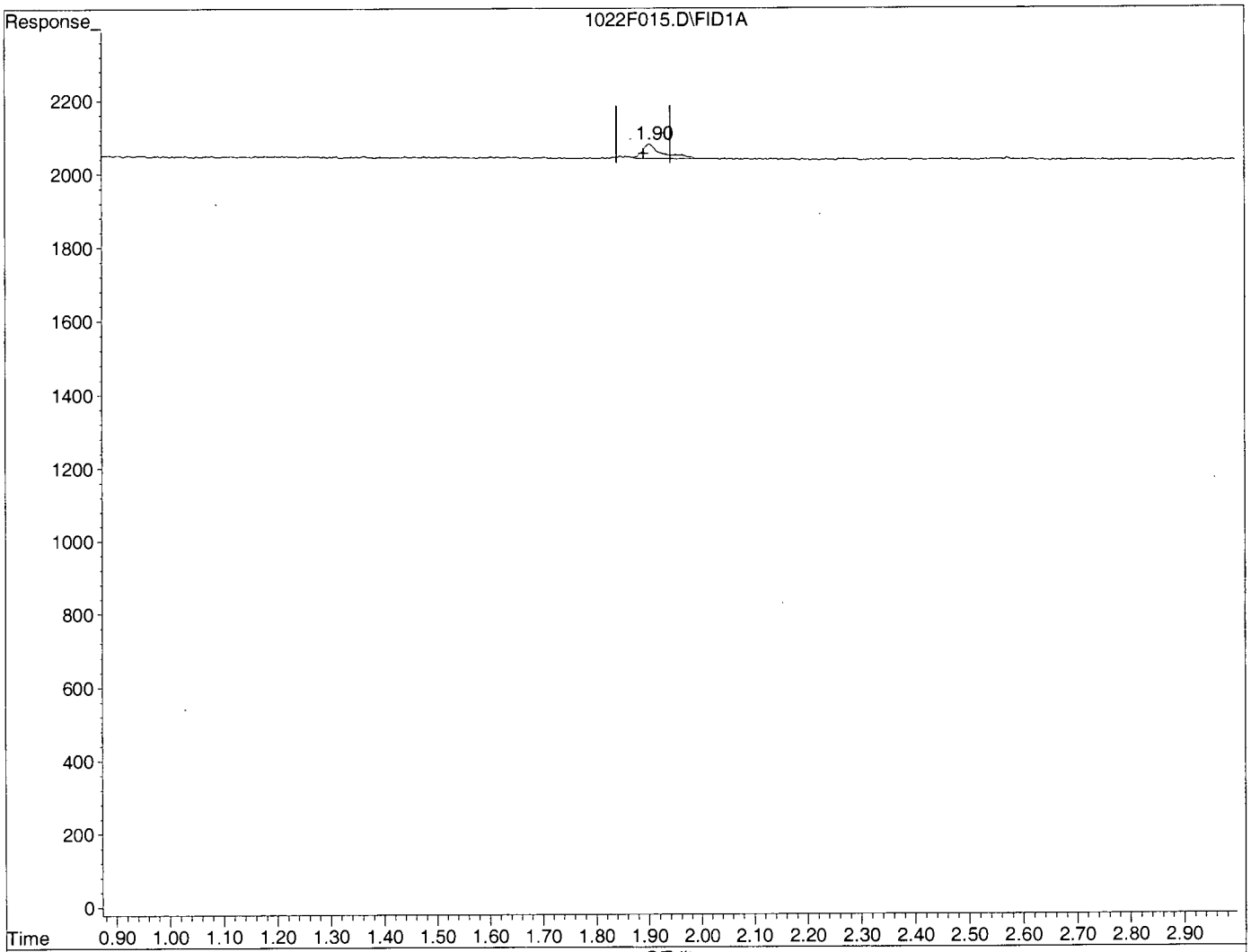
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : V:\FRODO\DATA\140305\1022F015.D
Acq On : 22 Oct 2014 21:45
Sample : AZ05593W03
Misc : Water
IntFile : events.e
Quant Time: Oct 26 20:25 2014 Quant Results File: RSK175Q.RES

Vial: 15
Operator: lsf
Inst : Frodo
Multiplr: 1.00

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration




(1) Methane (ATM)

1.90min 1.702ppb

response 1023

(+) = Expected Retention Time



1022F015.D RSK175Q.M Thu Nov 20 17:34:06 2014

# RSK-175
# Calibration Data

APPL, INC.

# Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Initial Cal. Date: 03/06/13
Instrument: Frodo

Initials:

| | | Compound | 1 | 2 | 3 | 4 | 5 | | | | | | Avg | %RSD | | $r^2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0306F001 D | 0306F002.D | 0306F003.D | 0306F004.D | 0306F005.D | | | | | | | | | |
| 1 | ATML | Methane | 1275 | 462 | 373 | 359 | 357 | | | | | | 565 | 71 | ATML | 1.00 |
| 2 | ATM | Ethane | 304 | 260 | 315 | 313 | 369 | | | | | | 312 | 12 | ATM | |
| 3 | ATM | Ethene | 351 | 249 | 326 | 328 | 387 | | | | | | 328 | 15 | ATM | |
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| 35 | | | | | | | | | | | | | | | | |

2.8106706

Compound #1: Methane (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 0.900 | 1147 | | | |
| 2 | 5.100 | 2355 | | | |
| 3 | 13.338 | 4981 | | | |
| 4 | 26.700 | 9581 | | | |
| 5 | 1333.800 | 475739 | | | |
| 6 | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass 0.00

Correction Factor 0.000

Prev | Next | Plot | Page 1 | Page 2 | OK | Cancel | Help

Compound #2: Ethane (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 1.700 | 516 | | | |
| 2 | 9.500 | 2472 | | | |
| 3 | 25.000 | 7865 | | | |
| 4 | 50.000 | 15656 | | | |
| 5 | 2500.100 | 921885 | | | |
| 6 | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass: 0.00

Correction Factor: 0.000

Prev | Next | Plot | Page 1 | Page 2 | OK | Cancel | Help

Compound #3: Ethene (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 1.600 | 562 | | | |
| 2 | 8.900 | 2219 | | | |
| 3 | 23.300 | 7603 | | | |
| 4 | 46.600 | 15290 | | | |
| 5 | 2332.500 | 901927 | | | |
| 6 | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass 0.00

Correction Factor 0.000

Prev | Next | Plot | Page 1 | Page 2 | OK | Cancel | Help

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F001.D Vial: 1
Acq On : 6 Mar 2013 10:46 Operator: lsf
Sample : RSK L-1 03-06-13 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:31 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Thu Mar 07 13:29:20 2013
Response via : Multiple Level Calibration

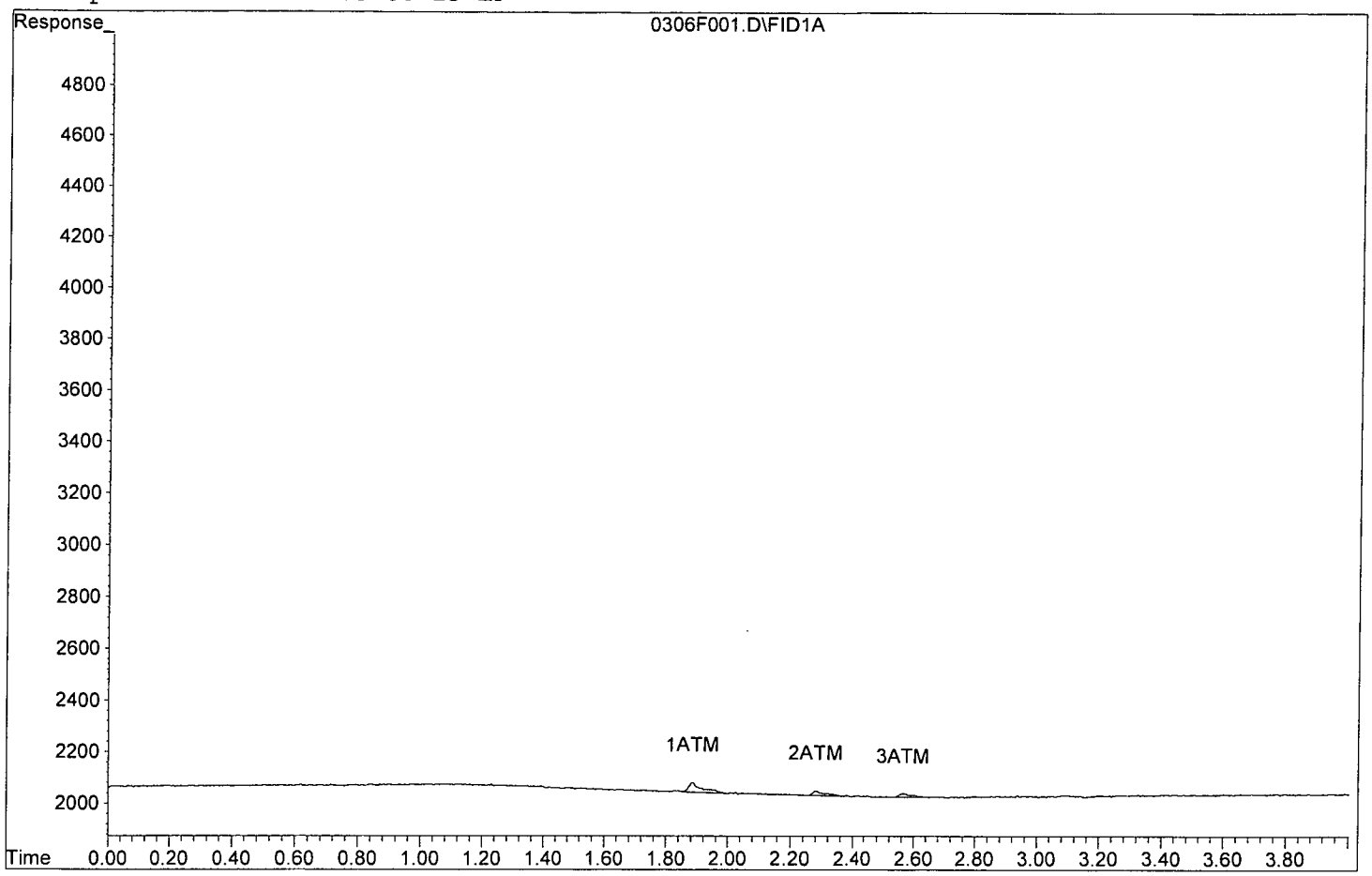
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 1147 | 2.051 ppb |
| 2) ATM Ethane | 2.28 | 516 | 1.654 ppb |
| 3) ATM Ethene | 2.57 | 562 | 1.711 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F001.D
Sample : RSK L-1 03-06-13 LF



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F002.D Vial: 2
Acq On : 6 Mar 2013 10:55 Operator: lsf
Sample : RSK L-2 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:00 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Wed Mar 06 11:30:47 2013
Response via : Multiple Level Calibration

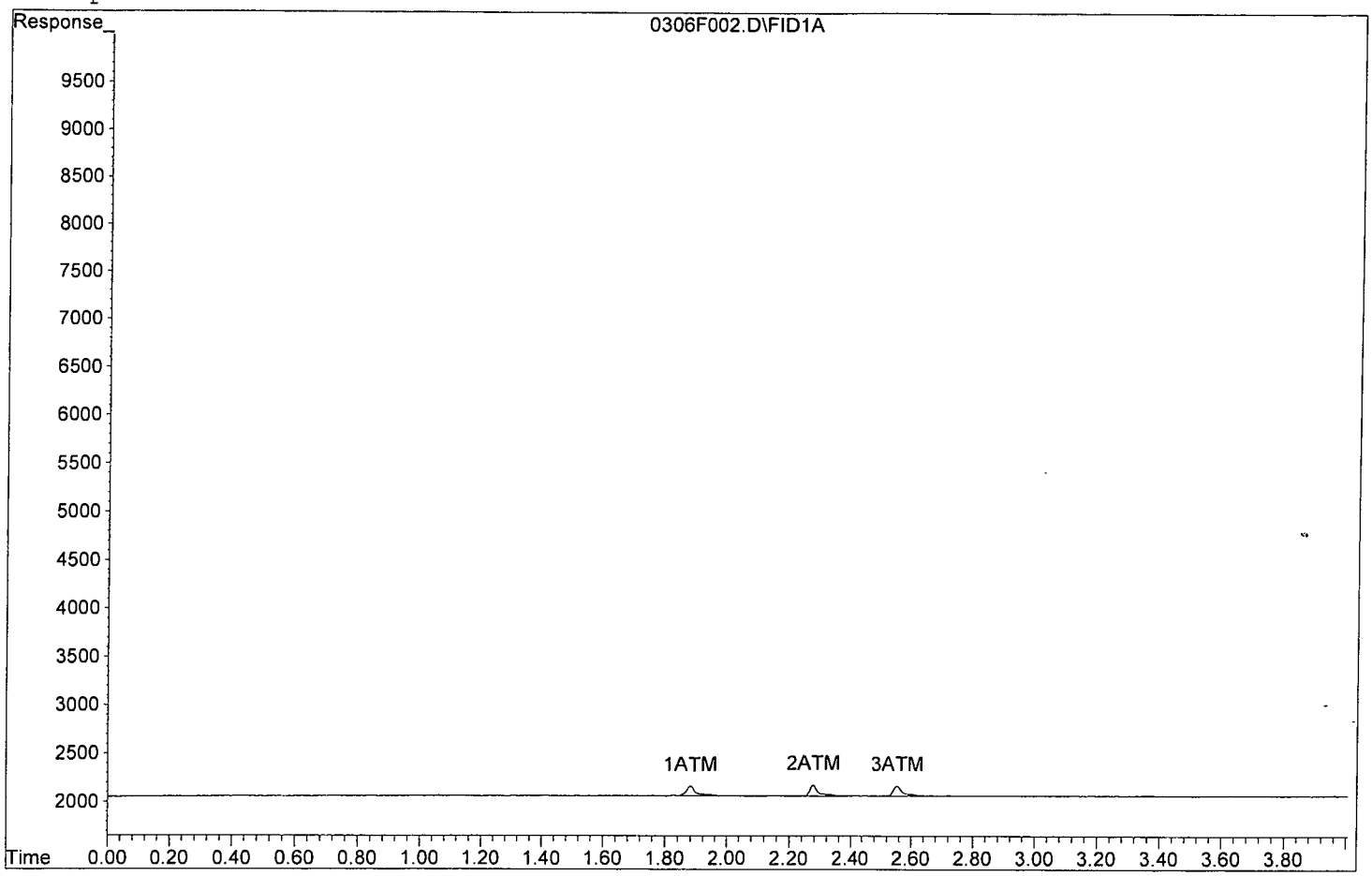
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 2355 | 1.146 ppb |
| 2) ATM Ethane | 2.28 | 2472 | 3.396 ppb |
| 3) ATM Ethene | 2.55 | 2219 | 3.381 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F002.D
Sample : RSK L-2



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F003.D Vial: 3
Acq On : 6 Mar 2013 11:00 Operator: lsf
Sample : RSK L-3 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:05 2013 Quant Results File: RSK175Q.RES

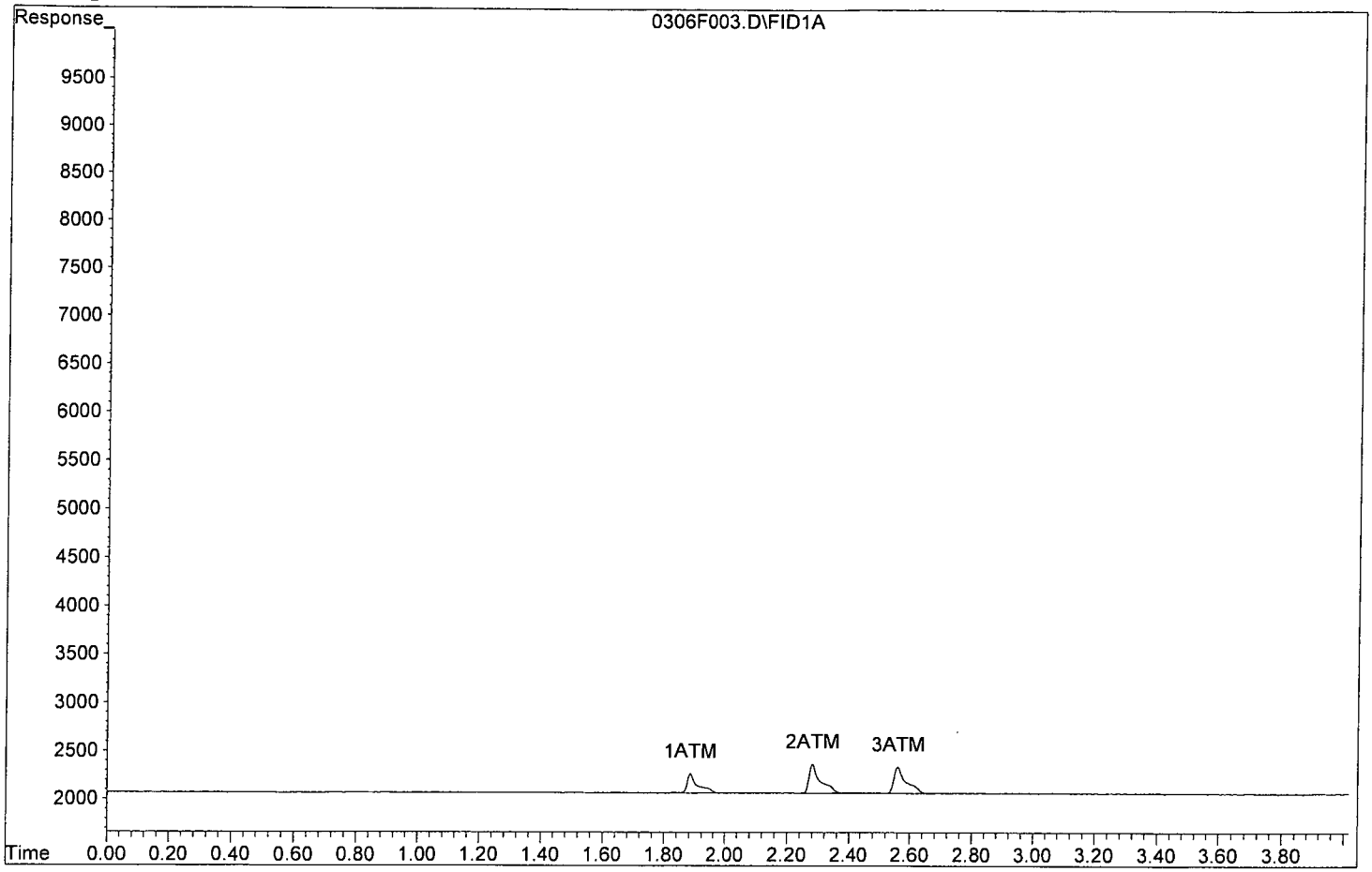
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Wed Mar 06 11:30:47 2013
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 4981 | 4.212 ppb |
| 2) ATM Ethane | 2.28 | 7865 | 20.444 ppb |
| 3) ATM Ethene | 2.56 | 7603 | 20.362 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\130306\0306F003.D
Sample : RSK L-3



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F004.D
Acq On : 6 Mar 2013 11:05
Sample : RSK L-4
Misc : Water
IntFile : events.e
Quant Time: Mar 7 13:25 2013 Quant Results File: RSK175Q.RES

Vial: 4
Operator: lsf
Inst : Frodo
Multiplr: 1.00

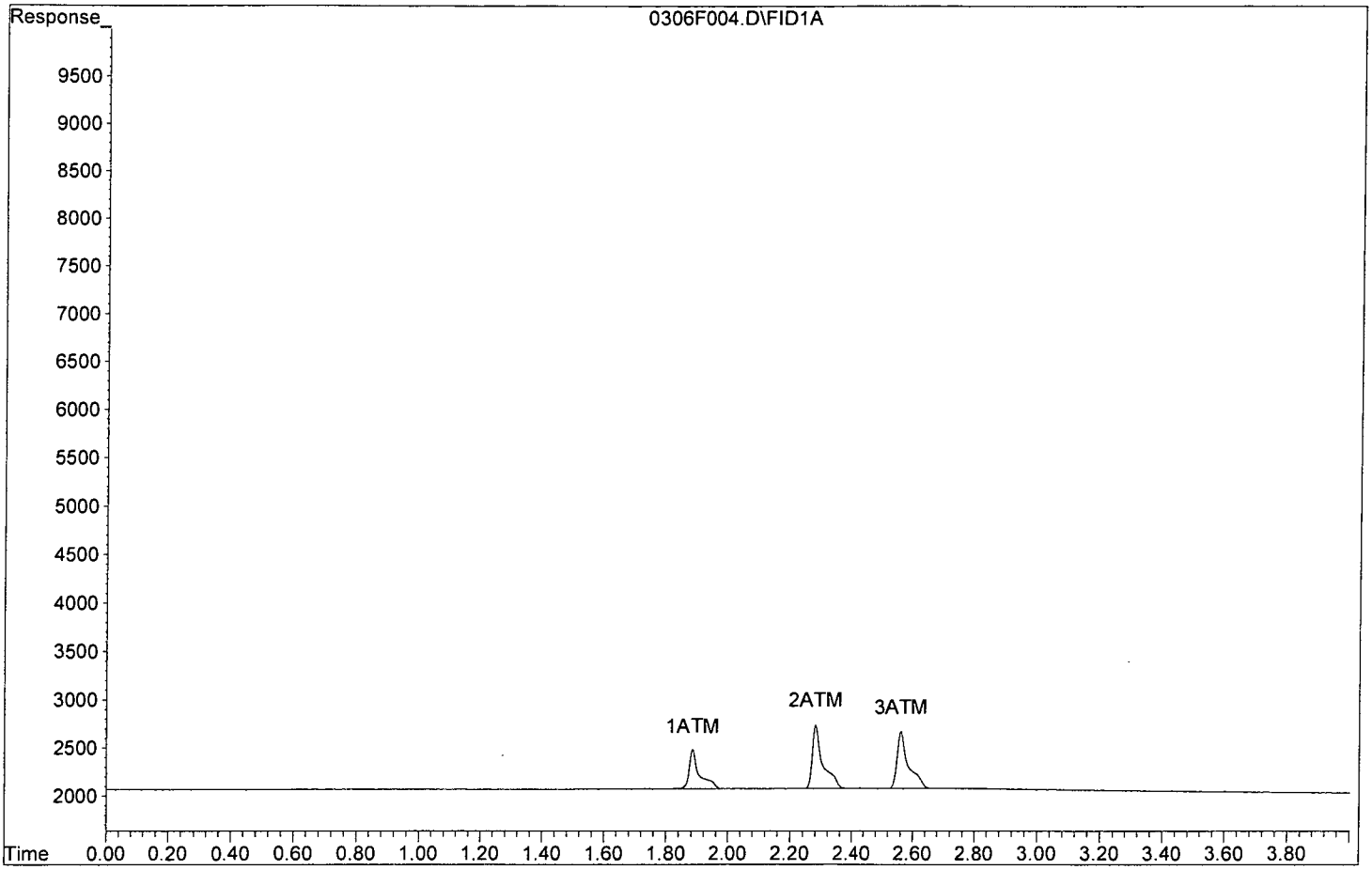
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Wed Mar 06 11:30:47 2013
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 9581 | 25.717 ppb |
| 2) ATM Ethane | 2.28 | 15656 | 45.982 ppb |
| 3) ATM Ethene | 2.56 | 15290 | 42.993 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\130306\0306F004.D
Sample : RSK L-4



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F005.D Vial: 5
Acq On : 6 Mar 2013 11:09 Operator: lsf
Sample : RSK L-5 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:15 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Thu Mar 07 13:29:20 2013
Response via : Multiple Level Calibration

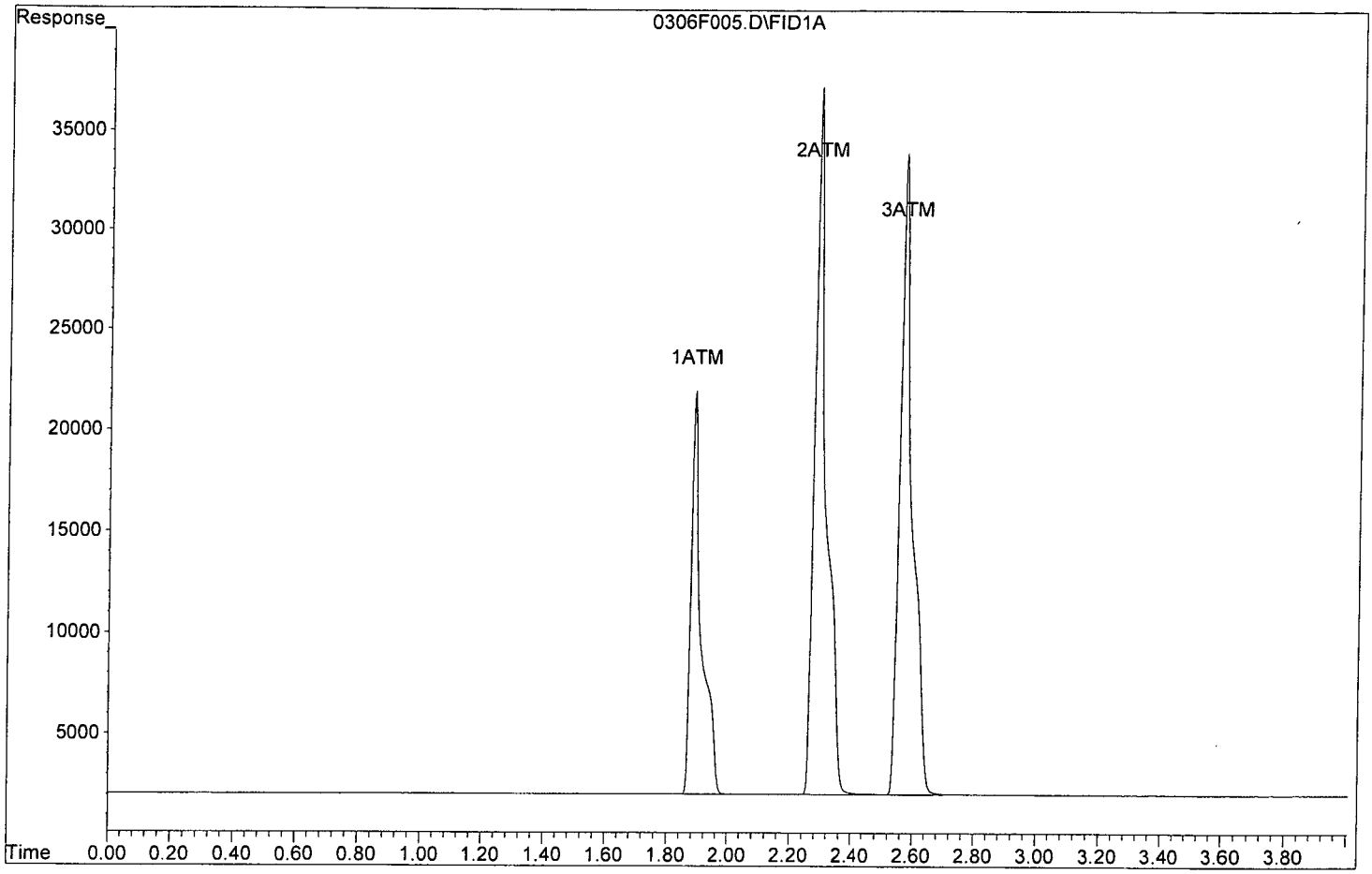
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc | Units |
|---|---|---|---|---|
| Target Compounds | | | | |
| 1) ATM Methane | 1.88 | 475739 | 614.401 | ppb |
| 2) ATM Ethane | 2.28 | 921885 | 2639.481 | ppb |
| 3) ATM Ethene | 2.56 | 901927 | 2574.780 | ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F005.D
Sample : RSK L-5



Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 6 Mar 2013 11:53
Instrument: Frodo
Initial Cal. Date: 03/06/13
Data File: 0306F008.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 323 | 43 | ATML | 14 |
| 2 | ATM | Ethane | 312 | 308 | 1.2 | ATM | |
| 3 | ATM | Ethene | 328 | 321 | 2.4 | ATM | |
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| 40 | | | | | | | |
| | | Average | | | 15.5 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F008.D Vial: 8
Acq On : 6 Mar 2013 11:53 Operator: lsf
Sample : 130306A LCS-1 (SS) Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:33 2013 Quant Results File: RSK175Q.RES

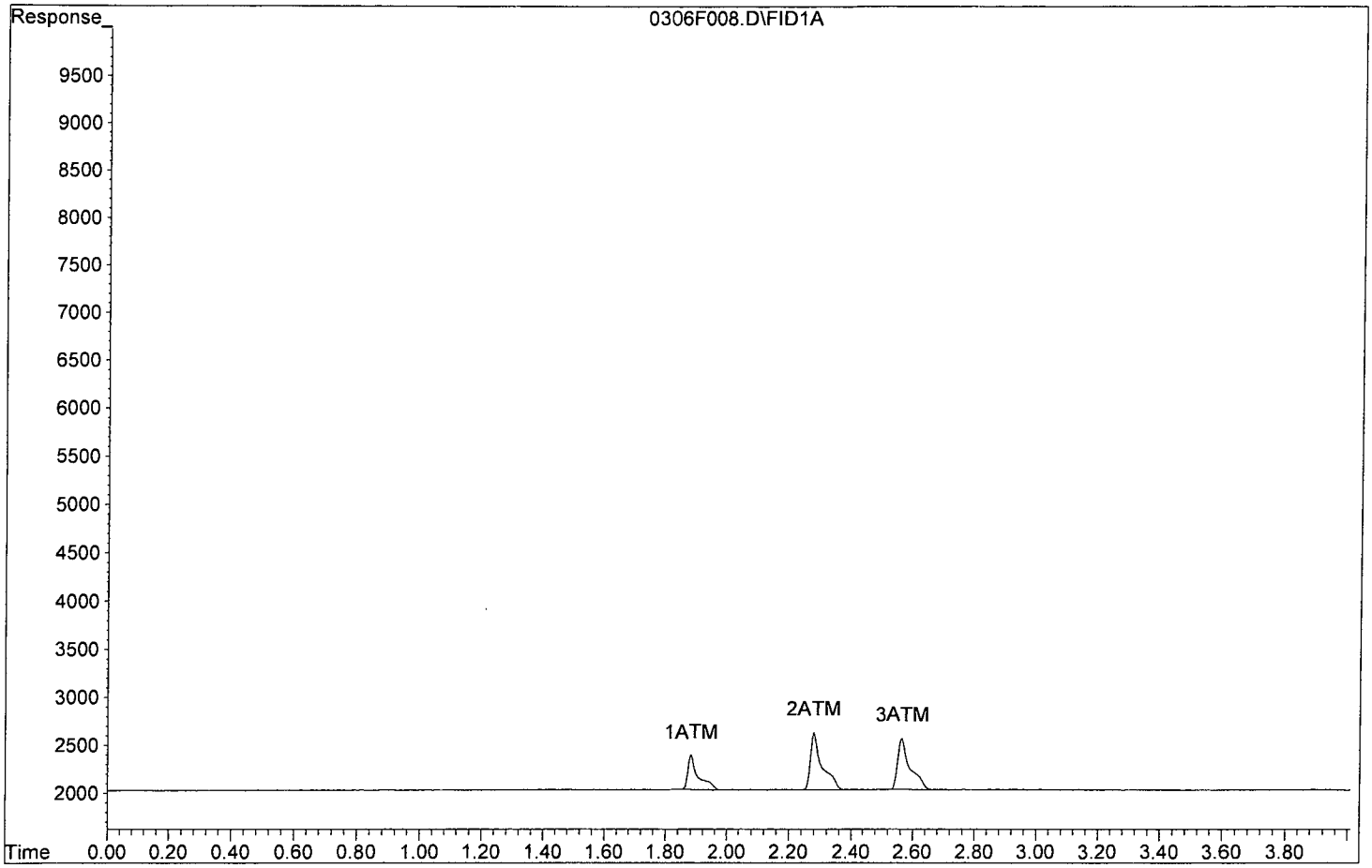
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Thu Mar 07 13:29:20 2013
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 8635 | 23.062 ppb |
| 2) ATM Ethane | 2.28 | 15416 | 49.407 ppb |
| 3) ATM Ethene | 2.56 | 14936 | 45.493 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\130306\0306F008.D
Sample : 130306A LCS-1 (SS)



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 10/22/14
Instrument: Frodo
Initial Cal. Date: 03/05/14
Data File: 1022F001.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 395 | 30 | ATML | 6.4 |
| 2 | ATM | Ethane | 312 | 366 | 17 | ATM | |
| 3 | ATM | Ethene | 328 | 384 | 17 | ATM | |
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| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 21.3 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F001.D Vial: 1
Acq On : 22 Oct 2014 20:00 Operator: lsf
Sample : RSK L-4 10-22-14 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:04 2014 Quant Results File: RSK175Q.RES

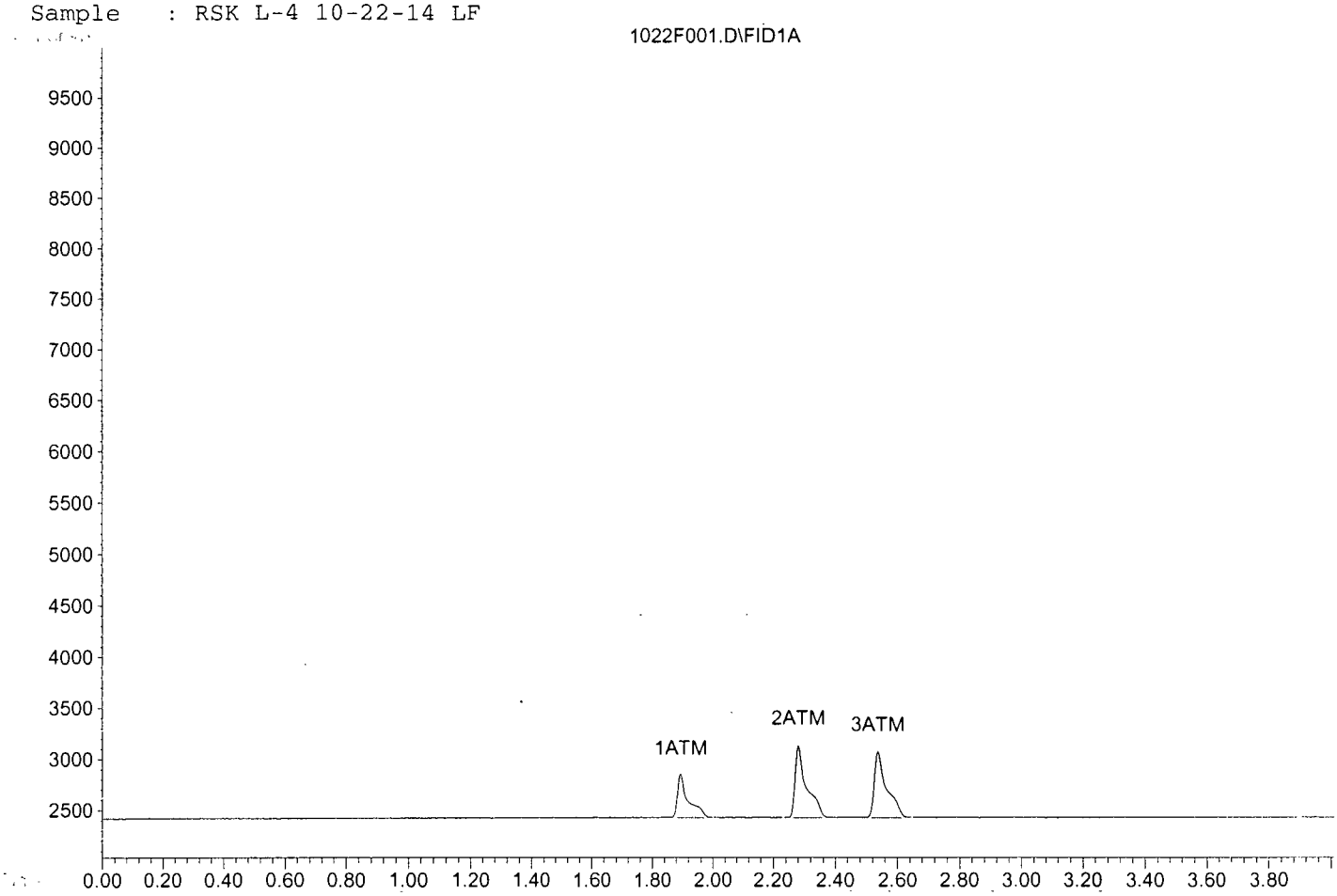
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 10541 | 28.409 ppb |
| 2) ATM Ethane | 2.28 | 18284 | 58.598 ppb |
| 3) ATM Ethene | 2.54 | 17906 | 54.540 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F001.D
Sample : RSK L-4 10-22-14 LF



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 10/22/14
Instrument: Frodo
Initial Cal. Date: 03/05/14
Data File: 1022F011.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 300 | 47 | ATML | 20 |
| 2 | ATM | Ethane | 312 | 273 | 13 | ATM | |
| 3 | ATM | Ethene | 328 | 281 | 14 | ATM | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
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| 8 | | | | | | | |
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| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 24.7 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F011.D Vial: 11
Acq On : 22 Oct 2014 20:56 Operator: lsf
Sample : RSK L-4 10-22-14 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 20:10 2014 Quant Results File: RSK175Q.RES

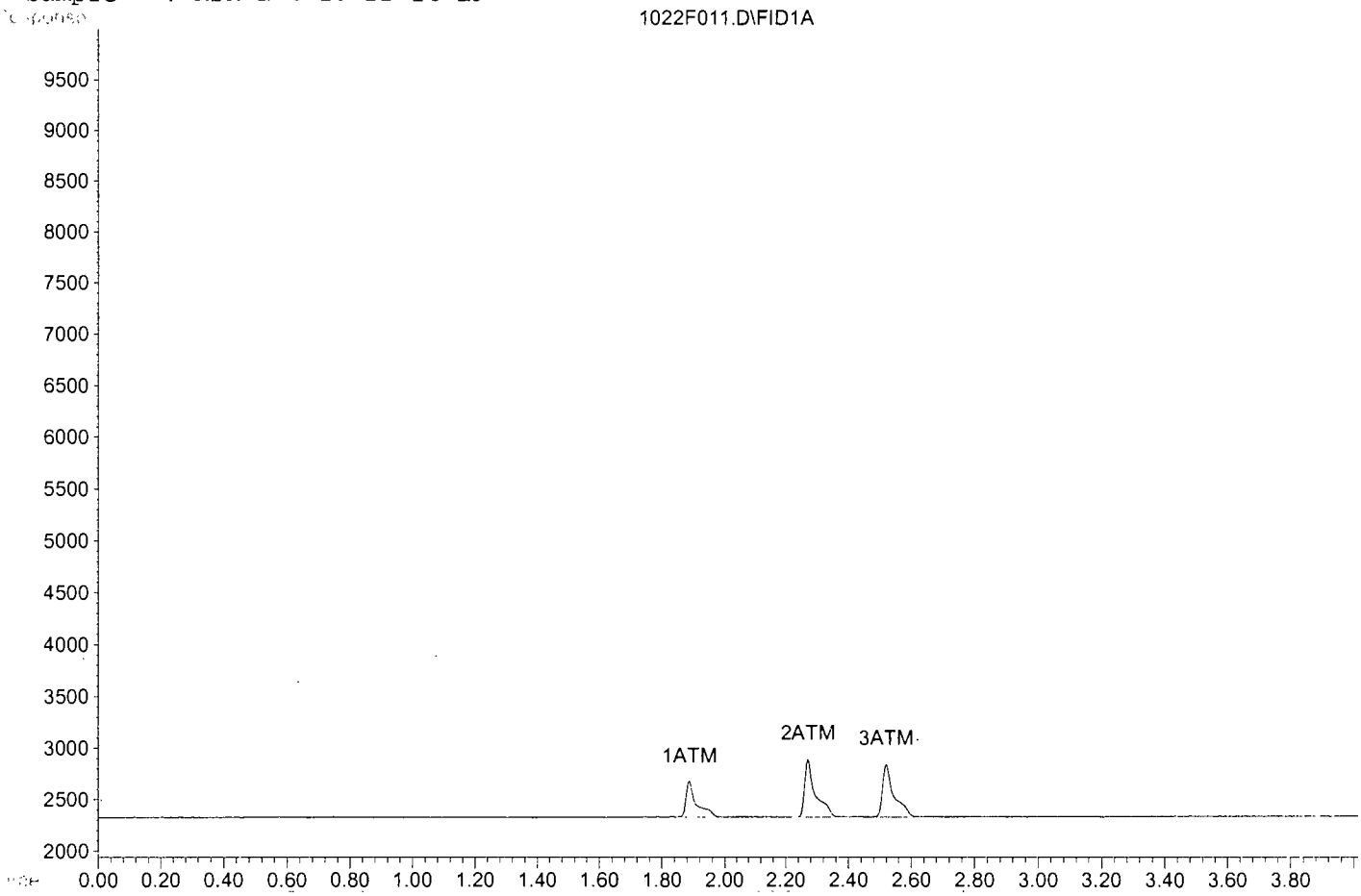
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 8011 | 21.310 ppb |
| 2) ATM Ethane | 2.27 | 13630 | 43.681 ppb |
| 3) ATM Ethene | 2.52f | 13099 | 39.898 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F011.D
Sample : RSK L-4 10-22-14 LF



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 10/22/14
Instrument: Frodo
Initial Cal. Date: 03/05/14
Data File: 1022F014.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 357 | 37 | ATML | 4.2 |
| 2 | ATM | Ethane | 312 | 323 | 3.5 | ATM | |
| 3 | ATM | Ethene | 328 | 338 | 3.0 | ATM | |
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| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 14.5 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F014.D Vial: 14
Acq On : 22 Oct 2014 21:37 Operator: lsf
Sample : RSK L-4 10-22-14 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 20:42 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

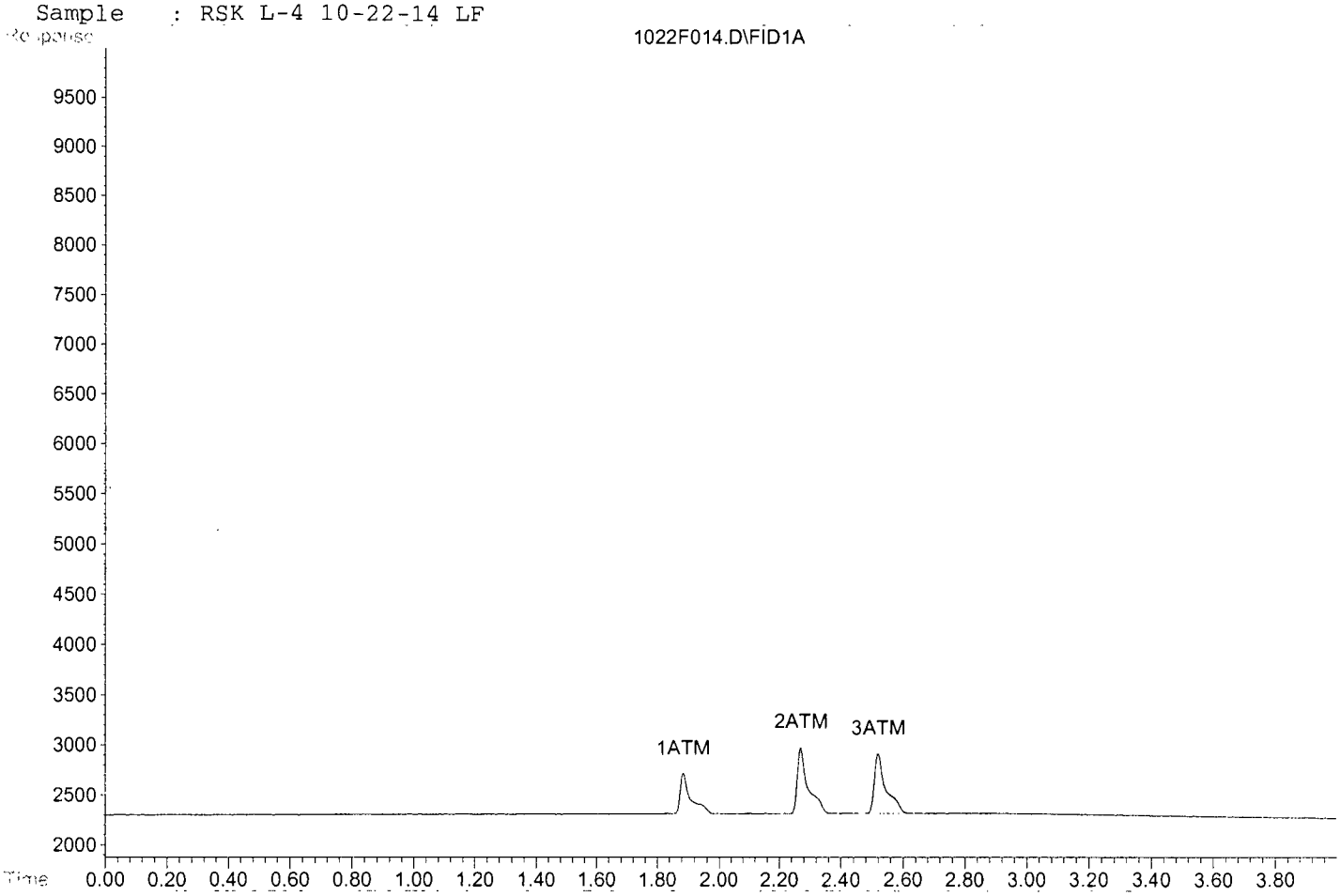
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 9530 | 25.572 ppb |
| 2) ATM Ethane | 2.27 | 16148 | 51.753 ppb |
| 3) ATM Ethene | 2.52f | 15756 | 47.990 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\140305\1022F014.D
Sample : RSK L-4 10-22-14 LF



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 10/22/14
Instrument: Frodo
Initial Cal. Date: 03/05/14
Data File: 1022F016.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 374 | 34 | ATML | 3.9 |
| 2 | ATM | Ethane | 312 | 332 | 6.5 | ATM | |
| 3 | ATM | Ethene | 328 | 354 | 7.7 | ATM | |
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| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 16.1 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F016.D Vial: 16
Acq On : 22 Oct 2014 21:50 Operator: lsf
Sample : RSK L-3 10-22-14 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 20:54 2014 Quant Results File: RSK175Q.RES

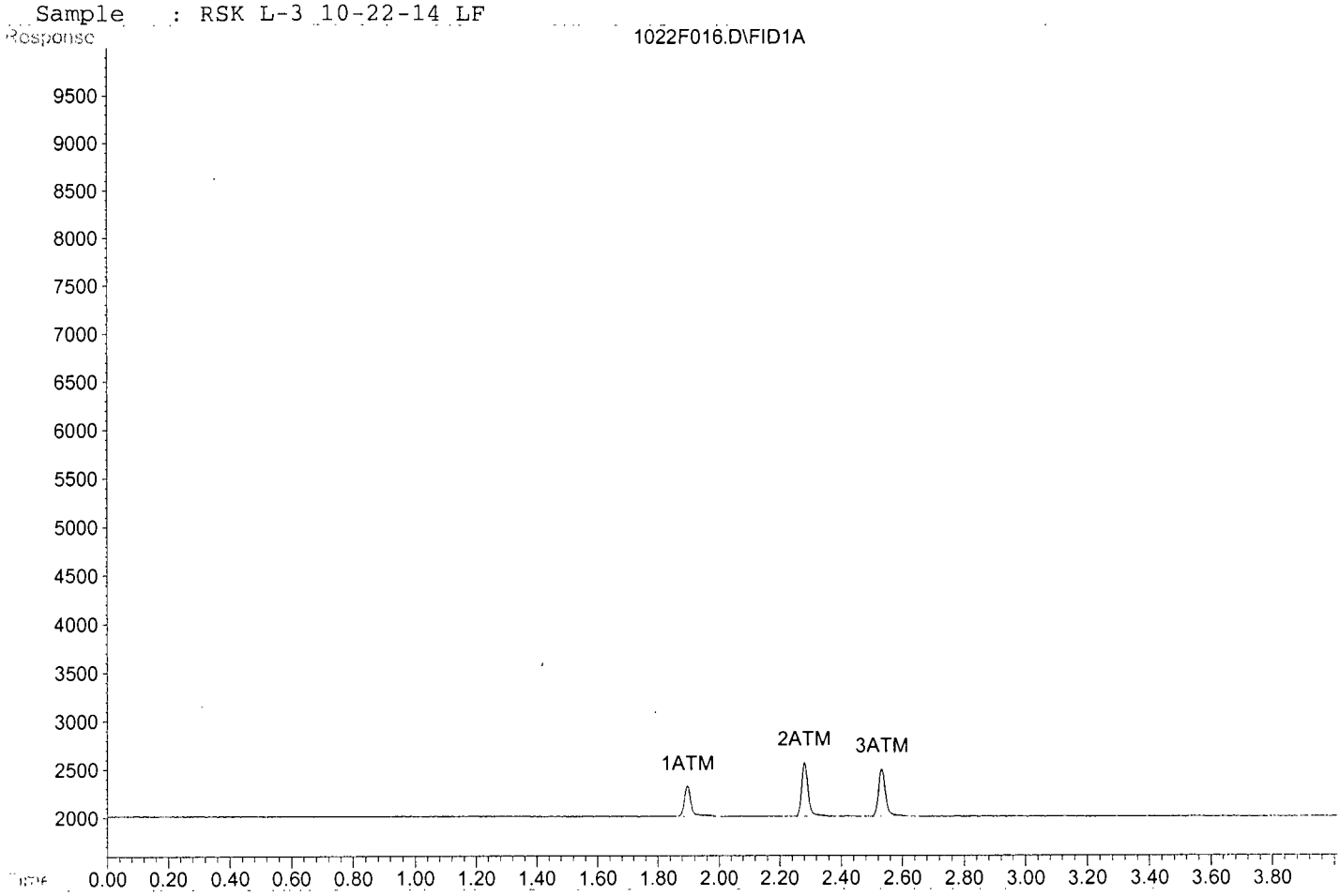
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.90 | 4985 | 12.820 ppb |
| 2) ATM Ethane | 2.28 | 8311 | 26.636 ppb |
| 3) ATM Ethene | 2.53 | 8240 | 25.099 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F016.D
Sample : RSK L-3 10-22-14 LF



# RSK-175
# Raw Data

APPL, INC.

# Method Blank
## MEE

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141022W-05388 - 191410**
Batch ID: #RSK50-141022A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 10/22/14 | 10/22/14 |

Quant Method: RSK175Q.M
Run #: 1022F004
Instrument: Frodo
Sequence: 140305
Initials: LF

*GC SC-Blank-REG MDLs*
*Printed: 11/02/14 9:34:16 PM*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F004.D Vial: 4
Acq On : 22 Oct 2014 20:14 Operator: lsf
Sample : 141022A BLK-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:32 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

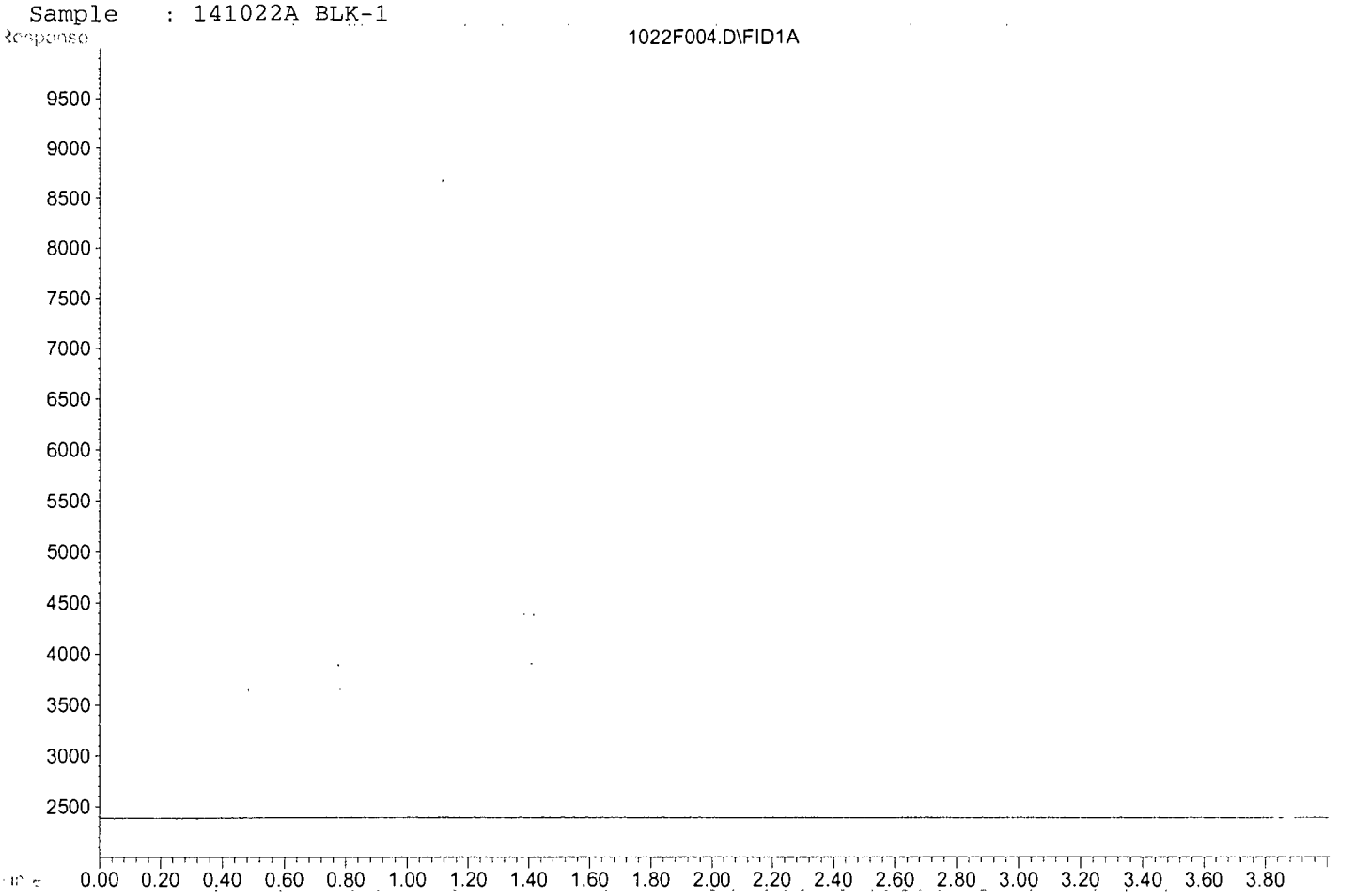
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc | Units |
|---|---|---|---|---|

Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F004.D
Sample : 141022A BLK-1



# Laboratory Control Spike Recoveries

## MEE

APPL ID: **141022W-05388 LCS - 191410**
Batch ID: #RSK50-141022A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Lvl ug/L | SPK Result ug/L | DUP Result ug/L | SPK % Recovery | DUP % Recovery | Recovery Limits | RPD % | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| METHANE | 26.7 | 26.5 | 25.7 | 99.3 | 96.3 | 72-125 | 3.1 | 30 |

Comments:

| Primary | SPK | DUP |
|---|---|---|
| Quant Method : | RSK175Q.M | RSK175Q.M |
| Extraction Date : | 10/22/14 | 10/22/14 |
| Analysis Date : | 10/22/14 | 10/22/14 |
| Instrument : | Frodo | Frodo |
| Run : | 1022F002 | 1022F003 |
| Initials : | LF | |



*Printed: 11/02/14 9:34:19 PM*
*APPL Standard LCSD*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F002.D Vial: 2
Acq On : 22 Oct 2014 20:05 Operator: lsf
Sample : 141022A LCS-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:09 2014 Quant Results File: RSK175Q.RES

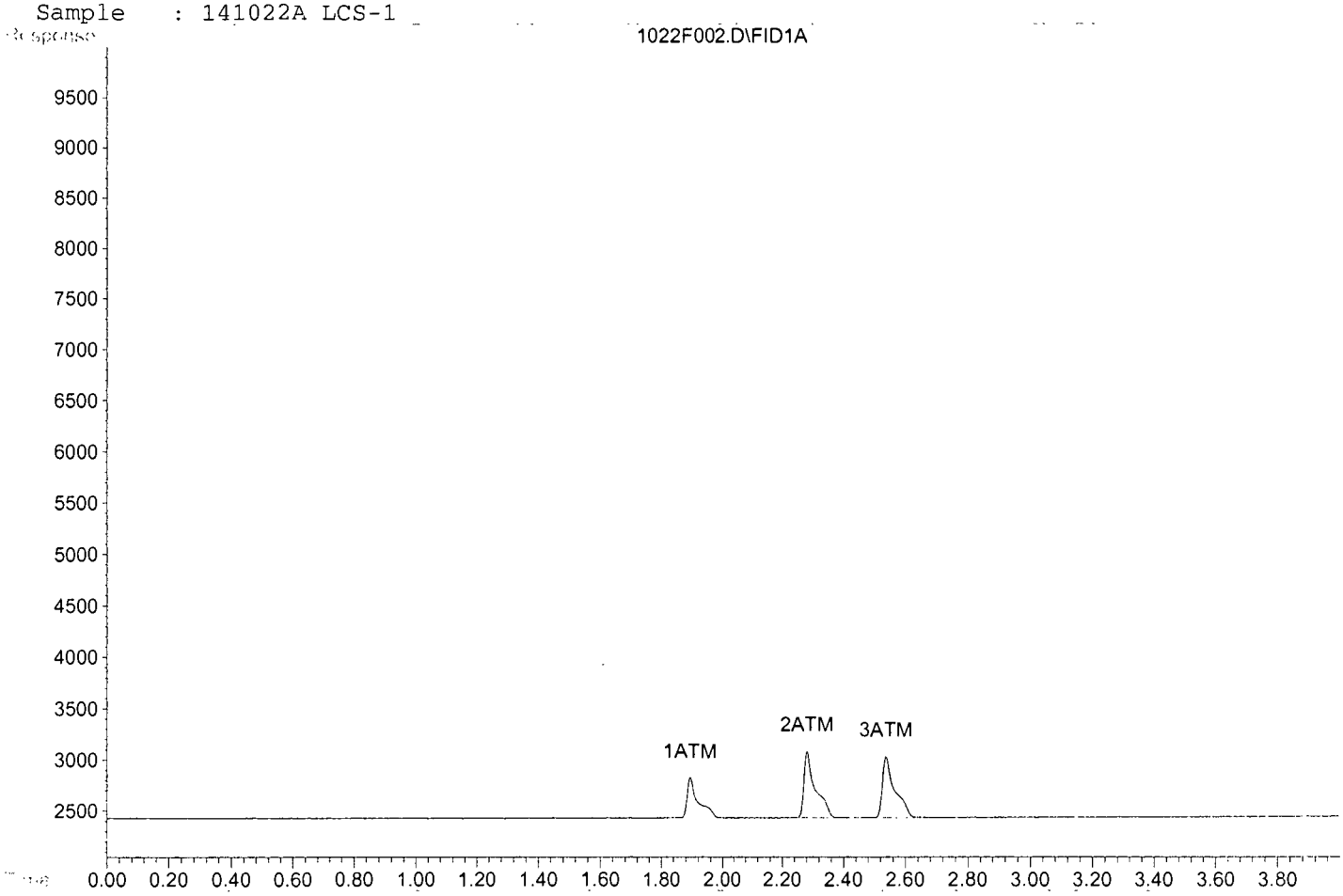
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.90 | 9859 | 26.496 ppb |
| 2) ATM Ethane | 2.28 | 17060 | 54.673 ppb |
| 3) ATM Ethene | 2.54 | 16799 | 51.170 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F002.D
Sample : 141022A LCS-1



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\140305\1022F003.D Vial: 3
Acq On : 22 Oct 2014 20:10 Operator: lsf
Sample : 141022A LCSD-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Oct 22 19:14 2014 Quant Results File: RSK175Q.RES

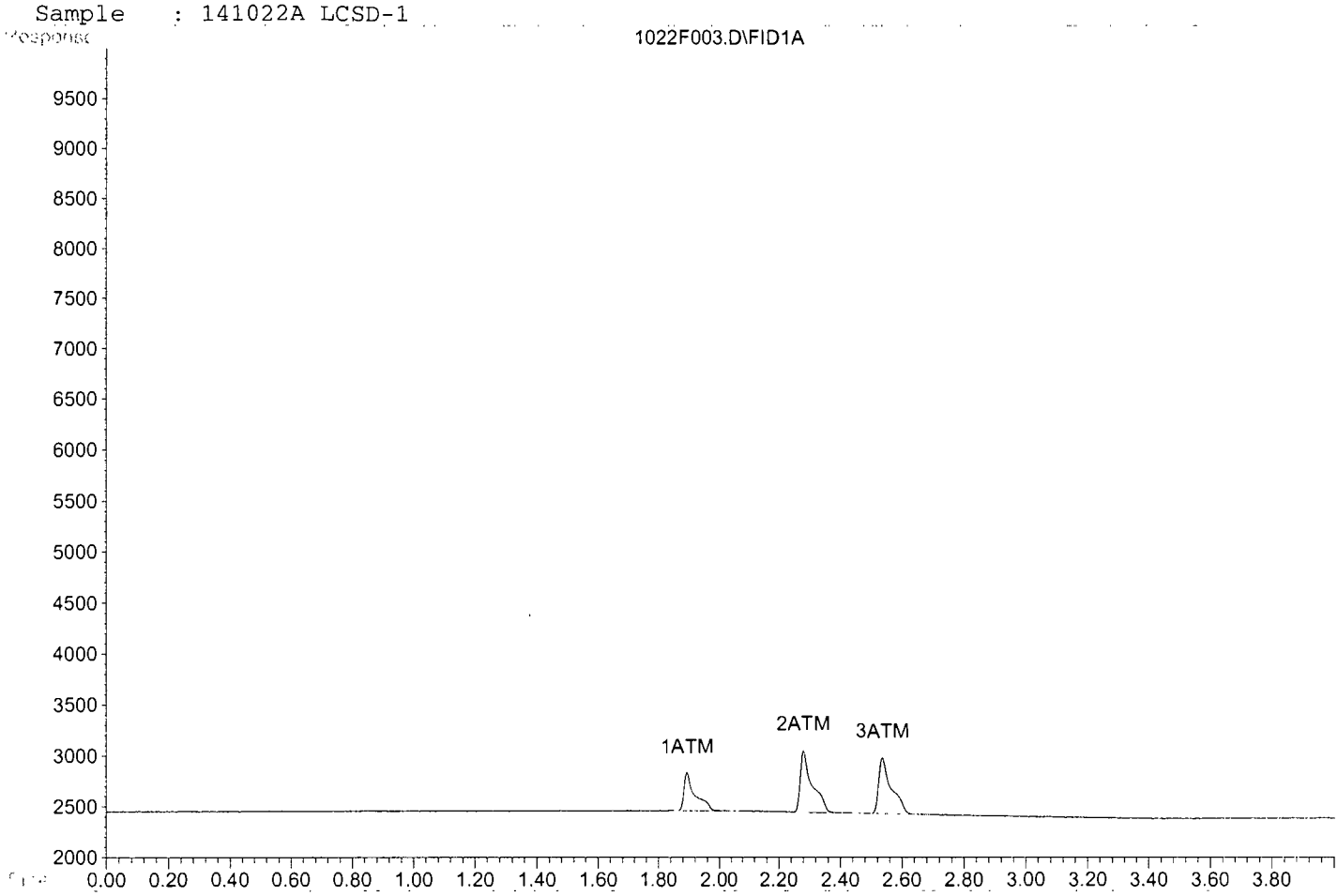
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 9558 | 25.652 ppb |
| 2) ATM Ethane | 2.28 | 16380 | 52.496 ppb |
| 3) ATM Ethene | 2.54 | 15864 | 48.321 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\140305\1022F003.D
Sample : 141022A LCSD-1



VF 12/3/12

**Intermediate Calibration Stock Standard**
12/3/12A is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Expires: 9/11/13
193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane, and Ethene opened 9/11/12 VF

**Level-4 continuing calibration verification standard**
4mL of 12/3/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

**LCS 121203A**
4mL of 12/3/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

VF

VF 12/11/12

**Intermediate Calibration Stock Standard**
12/11/12A is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Expires: 9/11/13
193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane, and Ethene opened 9/11/12

**Level-4 continuing calibration verification standard**
4mL of 12/11/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

**LCS 121211A**
4mL of 12/11/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

VF

VF 12/17/12

**Intermediate Calibration Stock Standard**
12/17/12A is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Expires: 9/11/13
193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane, and Ethene opened 9/11/12

**Level-4 continuing calibration verification standard**
4mL of 12/17/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

**LCS 121217A**
4mL of 12/17/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

3/6/13 VF Opened new standard lot# 248PLU2SPC03L-31312
Contains 10000ppmV of methane, Ethane, & Ethene
exp 3/6/14

RSK Standard Prep Logbook B

UF 3/6/13

UF

**Intermediate Calibration Stock Standard**

03/6/13 A is prepared in a 1 L Tedlar bag Add 990 mL Helium and 10 mL of 248PLU2SPC03L-31312 standard.
Expires 03/16/14
248PLU2SPC03L-31312 is Stock Standard of 10000ppmv of Methane, Ethane and Ethene opened 3/06/13
Helium Lot #. 105-400107481-1

**Calibration Standards**

Methane mw = 16 0426

| aliquot of std (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc (ug/mL) |
|---|---|---|---|---|---|
| 0 135 | 100 | 3/6/13 A | 0.009 | 10 | 0.0009 |
| 0 76 | 100 | 3/6/13 A | 0 051 | 10 | 0 0051 |
| 2 | 100 | 3/6/13 A | 0.133 | 10 | 0.0133 |
| 4 | 100 | 3/6/13 A | 0.267 | 10 | 0.0267 |
| 2 | 10000 | 248PLU2SPC03L-31312 standard. | 13.338 | 10 | 1 3338 |

Ethane mw = 30 0694

| aliquot of std. (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc. (ug/mL) |
|---|---|---|---|---|---|
| 0.135 | 100 | 3/6/13 A | 0.017 | 10 | 0.0017 |
| 0 76 | 100 | 3/6/13 A | 0 095 | 10 | 0 0095 |
| 2 | 100 | 3/6/13 A | 0.250 | 10 | 0.0250 |
| 4 | 100 | 3/6/13 A | 0.500 | 10 | 0.0500 |
| 2 | 10000 | 248PLU2SPC03L-31312 standard. | 25 001 | 10 | 2 5001 |

Ethene mw = 28.0536

| aliquot of std. (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc. (ug/mL) |
|---|---|---|---|---|---|
| 0.135 | 100 | 3/6/13 A | 0 016 | 10 | 0 0016 |
| 0.76 | 100 | 3/6/13 A | 0.089 | 10 | 0.0089 |
| 2 | 100 | 3/6/13 A | 0.233 | 10 | 0.0233 |
| 4 | 100 | 3/6/13 A | 0 466 | 10 | 0.0466 |
| 2 | 10000 | 248PLU2SPC03L-31312 standard. | 23.325 | 10 | 2.3325 |

**Methane/Ethane/Ethene Second Source**

193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane, and Ethene
opened 9/11/12 exp 9/11/13

**Intermediate Second Source Stock Standard**

3/6/13 B is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Concentration. 1000ppmv of Methane, Ethane and Ethene
Expires 9/11/13

**Second Source Working Standard**

| aliquot of std. (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc. (ug/mL) |
|---|---|---|---|---|---|
| 4 | 100 | 3/06/10 B | 0.267 | 10 | 0.0267 Methane |
| | | | 0.500 | | 0 0500 Ethane |
| | | | 0.466 | | 0.0466 Ethene |

**Level-4 continuing calibration verification standard**

4mL of 3/06/13 A into 10mL P & T Water
Final conc: 26.7ppb Methane. 50 ppb Ethane and 46.6ppb Ethene

**LCS 130306A 130306B**

4mL of 3/06/13 B into 10mL P & T Water
Final conc: 26 7ppb Methane. 50 ppb Ethane. and 46.6ppb Ethene

Reviewed by [illegible] 3/6/13

# Injection Log

Directory: V:\FRODO\DATA\130306\
V:\FRODO\DATA\140305\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 1 | 0306F001.D | 1 | RSK L-1 03-06-13 LF | Water | 6 Mar 2013 10:46 |
| 2 | 2 | 0306F002.D | 1 | RSK L-2 | Water | 6 Mar 2013 10:55 |
| 3 | 3 | 0306F003.D | 1 | RSK L-3 | Water | 6 Mar 2013 11:00 |
| 4 | 4 | 0306F004.D | 1 | RSK L-4 | Water | 6 Mar 2013 11:05 |
| 5 | 5 | 0306F005.D | 1 | RSK L-5 | Water | 6 Mar 2013 11:09 |
| 6 | 8 | 0306F008.D | 1 | 130306A LCS-1 (SS) | Water | 6 Mar 2013 11:53 |
| 7 | 1 | 1022F001.D | 1 | RSK L-4 10-22-14 LF | Water | 22 Oct 2014 20:00 |
| 8 | 2 | 1022F002.D | 1 | 141022A LCS-1 | Water | 22 Oct 2014 20:05 |
| 9 | 3 | 1022F003.D | 1 | 141022A LCSD-1 | Water | 22 Oct 2014 20:10 |
| 10 | 4 | 1022F004.D | 1 | 141022A BLK-1 | Water | 22 Oct 2014 20:14 |
| 11 | 14 | 1022F014.D | 1 | RSK L-4 10-22-14 LF | Water | 22 Oct 2014 21:37 |
| 12 | 15 | 1022F015.D | 1 | AZ05593W03 | Water | 22 Oct 2014 21:45 |
| 13 | 16 | 1022F016.D | 1 | RSK L-3 10-22-14 LF | Water | 22 Oct 2014 21:50 |

# METALS

APPL, INC.

# METALS

## QC Summary

APPL, INC.

# METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| 6020A | LEAD (PB) (DISSOL | 0.40 U | 3.0 | 0.40 | 0.19 | ug/L | 11/05/14 | 11/05/14 | #62A14-141105A1-AZ05593 |

*Metals SC-Blank-REG MDLs*
*Printed: 11/11/14 10:44:28 AM*

# Laboratory Control Spike Recovery

## METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVED) | 50.0 | 44.4 | 88.8 | 80-120 | 11/05/14 | 11/05/14 | #62A14-141105A1-AZ05593 |

Comments:

# Matrix Spike Recoveries

## METALS

APPL ID: **141105W-05593 MS - 191727**

Sample ID: AZ05593

Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl ug/L | Matrix Res ug/L | SPK Res ug/L | DUP Res ug/L | SPK % Recovery | DUP % Recovery | RPD | RPD Max | Recovery Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVE | 50.0 | ND | 49.0 | 45.9 | 98.0 | 91.8 | 6.5 | 20 | 80-120 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | 191727 | AZ05593 |

Comments: _____



*Printed: 11/11/14 10:44:39 AM*
*APPL MSD SCII*

# METALS

## Sample Data

APPL, INC.

# Metals Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill TO 0068
**Sample ID: RHMW06-GW-01**
Sample Collection Date: 10/21/14

ARF: 74701
**APPL ID: AZ05593**

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 6020A/3015^ | LEAD (PB) (DISSOLVED) | 0.80 U | 6.0 | 0.80 | 0.38 | ug/L | 2 | 11/05/14 | 11/05/14 |

*Printed: 11/18/14 5:02:01 PM*

*APPL-F1-SC-NoMC-REG MDLs*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ05593W35 1/5 |
| Data File Name | 112SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:53:57-08:00 |
| Sample Type | Sample |
| Dilution | 5.555555556 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.032 | -0.177 | -4.94 | 3 | 173.21 | 10000 | |
| B | 11 | 45 | NoGas | 330.667 | 1837.039 | 0.44 | 735009 | 0.30 | 10000 | |
| Na | 23 | 45 | He | 23361.636 | 129786.869 | 1.83 | 29969135 | 1.64 | 1000000 | |
| Mg | 24 | 45 | He | 8196.254 | 45534.742 | 1.07 | 5703442 | 0.76 | 1000000 | |
| Al | 27 | 45 | He | -1.004 | -5.576 | -4.30 | 537 | 2.48 | 1000000 | |
| K | 39 | 45 | He | 648.754 | 3604.187 | 0.46 | 458412 | 0.60 | 500000 | |
| Ca | 44 | 45 | He | 5940.467 | 33002.594 | 1.27 | 196542 | 1.01 | 500000 | |
| Ti | 47 | 45 | He | 0.002 | 0.012 | 408.62 | 16 | 12.40 | 10000 | |
| V | 51 | 45 | He | 2.714 | 15.077 | 2.87 | 19249 | 2.44 | 10000 | |
| Cr | 52 | 45 | He | 0.353 | 1.964 | 3.29 | 4054 | 1.94 | 10000 | |
| Mn | 55 | 45 | He | 1.866 | 10.367 | 2.61 | 12593 | 2.17 | 50000 | |
| Fe | 56 | 45 | He | -1.098 | -6.100 | -3.36 | 12124 | 2.46 | 1000000 | |
| Co | 59 | 45 | He | -0.007 | -0.041 | -19.61 | 184 | 9.95 | 10000 | |
| Ni | 60 | 45 | He | -0.006 | -0.033 | -39.14 | 418 | 1.66 | 10000 | |
| Cu | 63 | 45 | He | 0.114 | 0.634 | 9.35 | 1732 | 5.90 | 10000 | |
| Zn | 66 | 115 | He | 6.415 | 35.637 | 3.17 | 11298 | 2.91 | 50000 | |
| As | 75 | 115 | He | 0.293 | 1.625 | 4.02 | 330 | 3.64 | 2000 | |
| Se | 78 | 115 | H2 | 0.143 | 0.793 | 40.04 | 46 | 32.99 | 10000 | |
| Se | 78 | 115 | He | 0.347 | 1.930 | 78.95 | 103 | 17.96 | 10000 | |
| Sr | 88 | 115 | NoGas | 50.002 | 277.788 | 2.44 | 1800842 | 2.03 | 50000 | |
| Mo | 95 | 115 | NoGas | 0.125 | 0.697 | 11.35 | 2607 | 3.12 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.000 | 0.000 | 1718.67 | 27 | 86.60 | 5000 | |
| Cd | 111 | 115 | He | 0.002 | 0.012 | 134.85 | 7 | 91.65 | 10000 | |
| Sn | 118 | 115 | He | -0.475 | -2.639 | -3.08 | 639 | 10.54 | 10000 | |
| Sn | 118 | 115 | NoGas | -0.468 | -2.599 | -0.54 | 1413 | 2.04 | 10000 | |
| Sb | 121 | 115 | NoGas | -0.063 | -0.351 | -39.10 | 1937 | 17.86 | 10000 | |
| Ba | 137 | 165 | NoGas | 1.820 | 10.111 | 3.08 | 9323 | 3.77 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.000 | 0.000 | 1347.83 | 383 | 8.51 | 5000 | |
| Pb | 208 | 165 | NoGas | -0.035 | -0.195 | -2.19 | 870 | 3.98 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 438001 | 0.59 | 349963 | 125.16 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 517720 | 0.78 | 475873 | 108.79 | 70 | 120 | |
| Sc | 45 | He | 208767 | 0.33 | 199736 | 104.52 | 70 | 120 | |
| Sc | 45 | NoGas | 2448598 | 0.22 | 2096637 | 116.79 | 70 | 120 | |
| Ge | 72 | H2 | 138211 | 1.27 | 122394 | 112.92 | 70 | 120 | |
| Ge | 72 | He | 130086 | 0.34 | 123228 | 105.56 | 70 | 120 | |
| Ge | 72 | NoGas | 538078 | 0.35 | 485769 | 110.77 | 70 | 120 | |
| In | 115 | H2 | 2976688 | 0.49 | 2822980 | 105.44 | 70 | 120 | |
| In | 115 | He | 1171044 | 0.26 | 1094773 | 106.97 | 70 | 120 | |
| In | 115 | NoGas | 3478272 | 1.05 | 3222140 | 107.95 | 70 | 120 | |
| Tb | 159 | H2 | 5447821 | 0.61 | 5338807 | 102.04 | 70 | 120 | |
| Tb | 159 | He | 3441441 | 0.72 | 3232159 | 106.48 | 70 | 120 | |
| Tb | 159 | NoGas | 4602036 | 1.97 | 4336564 | 106.12 | 70 | 120 | |
| Ho | 165 | H2 | 5201562 | 1.31 | 5094749 | 102.10 | 70 | 120 | |
| Ho | 165 | He | 3361029 | 2.19 | 3120127 | 107.72 | 70 | 120 | |
| Ho | 165 | NoGas | 4463549 | 0.85 | 4144894 | 107.69 | 70 | 120 | |

# METALS

## Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74701 SDG: 74701
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 11/05/14 Concentration Units: ug/L

| Analyte | Initial Calibration | | | Continuing Calibration | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found 11:27 | %R(1) | True CCV1 | Found 12:08 | %R(1) | True CCV1 | Found 21:06 | %R(1) | |
| Lead (Pb) | 100 | 97.3657 | 97.4 | 50 | 48.7956 | 97.6 | 50 | 47.1295 | 94.3 | P |

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74701 SDG: 74701
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 11/05/14 Concentration Units: ug/L

| Analyte | Initial Calibration | | | Continuing Calibration | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found 11:27 | %R(1) | True CCV1 | Found 22:23 | %R(1) | True | Found | %R(1) | |
| Lead (Pb) | 100 | 97.3657 | 97.4 | 50 | 46.8780 | 93.8 | | | | P |

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74701 SDG: 74701

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 11/05/14

| Analyte | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | C | 1 | C | 2 | C | 3 | C | | C | |
| | 11:44 | | 12:20 | | 21:17 | | 22:35 | | 21:23 | | |
| Lead (Pb) | 3.00 | U | 3.00 | U | 3.00 | U | 3.00 | U | 3.00 | U | P |

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC.
Contract: Parsons
ARF No.: 74701
SDG: 74701
ICP ID Number: .Megatron
ICS Source: Environmental Express

Analysis Date: 11/05/14
Concentration Units: ug/L

| Analyte | True | | Initial Found | | |
|---|---|---|---|---|---|
| | Sol A | Sol AB | Sol A 12:26 | Sol AB 13:08 | %R(1) |
| Lead (Pb) | | 100 | 0.021032 | 102.443625 | 102 |

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
9
ICP SERIAL DILUTION

CLIENT SAMPLE NO.
RHMW06-GW-01

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No.: 74701 SDG: 74701
Matrix: water

Analysis Date: 11/05/14 Concentration Units: ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | %D | Q | M |
|---|---|---|---|---|---|---|---|
| Lead (Pb) | -0.194921 | | -0.991737 | | NA | | |

Comments:

11/05/14 21:53 AZ05593W35 1/5

11/05/14 22:17 AZ05593W35 1/25

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ05593W35 1/25 |
| Data File Name | 116SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T22:17:53-08:00 |
| Sample Type | Sample |
| Dilution | 27.77777778 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.028 | -0.784 | -11.02 | 17 | 69.28 | 10000 | |
| B | 11 | 45 | NoGas | 282.624 | 7850.675 | 1.15 | 631671 | 0.90 | 10000 | |
| Na | 23 | 45 | He | 4868.444 | 135234.556 | 2.46 | 6328596 | 2.23 | 1000000 | |
| Mg | 24 | 45 | He | 1760.704 | 48908.450 | 2.39 | 1227587 | 1.75 | 1000000 | |
| Al | 27 | 45 | He | -1.764 | -48.993 | -8.87 | 306 | 14.81 | 1000000 | |
| K | 39 | 45 | He | 136.809 | 3800.249 | 4.88 | 154389 | 1.86 | 500000 | |
| Ca | 44 | 45 | He | 1224.045 | 34001.240 | 0.57 | 40812 | 1.26 | 500000 | |
| Ti | 47 | 45 | He | -0.003 | -0.083 | -1364.39 | 14 | 58.06 | 10000 | |
| V | 51 | 45 | He | 0.683 | 18.975 | 7.33 | 5998 | 4.97 | 10000 | |
| Cr | 52 | 45 | He | 0.049 | 1.361 | 16.02 | 1651 | 3.06 | 10000 | |
| Mn | 55 | 45 | He | 0.038 | 1.045 | 76.40 | 3778 | 4.16 | 50000 | |
| Fe | 56 | 45 | He | -1.601 | -44.480 | -0.46 | 8587 | 1.34 | 1000000 | |
| Co | 59 | 45 | He | -0.008 | -0.236 | -15.28 | 170 | 8.99 | 10000 | |
| Ni | 60 | 45 | He | -0.075 | -2.072 | -9.01 | 187 | 12.37 | 10000 | |
| Cu | 63 | 45 | He | 0.072 | 2.005 | 4.90 | 1347 | 2.16 | 10000 | |
| Zn | 66 | 115 | He | 1.044 | 29.010 | 8.59 | 2910 | 4.89 | 50000 | |
| As | 75 | 115 | He | 0.165 | 4.595 | 22.94 | 212 | 17.23 | 2000 | |
| Se | 78 | 115 | H2 | 0.125 | 3.469 | 32.11 | 42 | 25.38 | 10000 | |
| Se | 78 | 115 | He | 0.599 | 16.644 | 12.31 | 122 | 4.17 | 10000 | |
| Sr | 88 | 115 | NoGas | 9.768 | 271.327 | 1.19 | 357898 | 0.24 | 50000 | |
| Mo | 95 | 115 | NoGas | 0.121 | 3.367 | 36.48 | 2620 | 11.65 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.004 | 0.100 | 28.36 | 90 | 19.25 | 5000 | |
| Cd | 111 | 115 | He | 0.004 | 0.122 | 82.60 | 11 | 66.81 | 10000 | |
| Sn | 118 | 115 | He | -0.407 | -11.310 | -2.92 | 957 | 5.70 | 10000 | |
| Sn | 118 | 115 | NoGas | -0.410 | -11.388 | -1.40 | 2055 | 3.41 | 10000 | |
| Sb | 121 | 115 | NoGas | 1.369 | 38.027 | 0.96 | 21080 | 2.20 | 10000 | |
| Ba | 137 | 165 | NoGas | 0.336 | 9.323 | 11.16 | 1824 | 10.64 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.016 | 0.439 | 13.62 | 881 | 7.30 | 5000 | |
| Pb | 208 | 165 | NoGas | -0.036 | -0.992 | -5.47 | 843 | 7.62 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 444981 | 1.99 | 349963 | 127.15 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 528115 | 0.48 | 475873 | 110.98 | 70 | 120 | |
| Sc | 45 | He | 209004 | 0.76 | 199736 | 104.64 | 70 | 120 | |
| Sc | 45 | NoGas | 2450955 | 0.56 | 2096637 | 116.90 | 70 | 120 | |
| Ge | 72 | H2 | 140468 | 1.01 | 122394 | 114.77 | 70 | 120 | |
| Ge | 72 | He | 131572 | 0.37 | 123228 | 106.77 | 70 | 120 | |
| Ge | 72 | NoGas | 544431 | 0.87 | 485769 | 112.08 | 70 | 120 | |
| In | 115 | H2 | 3076865 | 1.21 | 2822980 | 108.99 | 70 | 120 | |
| In | 115 | He | 1187370 | 0.05 | 1094773 | 108.46 | 70 | 120 | |
| In | 115 | NoGas | 3535882 | 1.41 | 3222140 | 109.74 | 70 | 120 | |
| Tb | 159 | H2 | 5564415 | 1.89 | 5338807 | 104.23 | 70 | 120 | |
| Tb | 159 | He | 3466167 | 0.72 | 3232159 | 107.24 | 70 | 120 | |
| Tb | 159 | NoGas | 4689699 | 0.19 | 4336564 | 108.14 | 70 | 120 | |
| Ho | 165 | H2 | 5285262 | 0.35 | 5094749 | 103.74 | 70 | 120 | |
| Ho | 165 | He | 3405741 | 0.65 | 3120127 | 109.15 | 70 | 120 | |
| Ho | 165 | NoGas | 4468572 | 2.38 | 4144894 | 107.81 | 70 | 120 | |

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
RHMW06-GW-01

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74701 SDG: 74701

Analysis Date: 11/05/14 Concentration Units: ug/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Lead (Pb) | 75-125 | 1305.352529 | | -0.194921 | | 1250.000 | 104 | | |

Comments:

11/05/14 21:53 AZ05593W35 1/5

11/05/14 22:11 AZ05593W35-A 1/5

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ05593W35-A 1/5 |
| Data File Name | 115SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T22:11:58-08:00 |
| Sample Type | Sample |
| Dilution | 5.555555556 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 48.164 | 267.575 | 1.98 | 175009 | 0.78 | 10000 | |
| B | 11 | 45 | NoGas | 588.232 | 3267.954 | 2.09 | 1278436 | 1.38 | 10000 | |
| Na | 23 | 45 | He | 46658.825 | 259215.695 | 1.03 | 57732182 | 0.53 | 1000000 | |
| Mg | 24 | 45 | He | 31217.168 | 173428.712 | 1.10 | 20981929 | 0.65 | 1000000 | |
| Al | 27 | 45 | He | 1952.762 | 10848.678 | 1.20 | 574715 | 0.75 | 1000000 | |
| K | 39 | 45 | He | 5566.993 | 30927.737 | 3.29 | 3265312 | 2.09 | 500000 | |
| Ca | 44 | 45 | He | 29263.444 | 162574.687 | 1.59 | 934021 | 0.39 | 500000 | |
| Ti | 47 | 45 | He | 241.317 | 1340.649 | 0.45 | 48747 | 1.81 | 10000 | |
| V | 51 | 45 | He | 256.528 | 1425.153 | 1.02 | 1619419 | 0.55 | 10000 | |
| Cr | 52 | 45 | He | 245.138 | 1361.879 | 0.73 | 1871654 | 0.83 | 10000 | |
| Mn | 55 | 45 | He | 236.132 | 1311.845 | 1.72 | 1103685 | 0.36 | 50000 | |
| Fe | 56 | 45 | He | 936.299 | 5201.661 | 2.18 | 6392644 | 0.90 | 1000000 | |
| Co | 59 | 45 | He | 240.653 | 1336.960 | 0.53 | 2886544 | 1.03 | 10000 | |
| Ni | 60 | 45 | He | 219.098 | 1217.210 | 1.34 | 713425 | 0.39 | 10000 | |
| Cu | 63 | 45 | He | 227.483 | 1263.794 | 2.86 | 2024495 | 1.94 | 10000 | |
| Zn | 66 | 115 | He | 454.519 | 2525.106 | 0.50 | 687543 | 0.74 | 50000 | |
| As | 75 | 115 | He | 238.612 | 1325.623 | 0.89 | 217959 | 0.97 | 2000 | |
| Se | 78 | 115 | H2 | 235.657 | 1309.203 | 2.37 | 59191 | 2.26 | 10000 | |
| Se | 78 | 115 | He | 227.190 | 1262.169 | 1.18 | 15009 | 1.49 | 10000 | |
| Sr | 88 | 115 | NoGas | 289.294 | 1607.189 | 2.77 | 10124597 | 2.19 | 50000 | |
| Mo | 95 | 115 | NoGas | 256.769 | 1426.495 | 1.24 | 1717990 | 1.86 | 10000 | |
| Ag | 107 | 115 | NoGas | 91.153 | 506.406 | 2.16 | 1553428 | 1.32 | 5000 | |
| Cd | 111 | 115 | He | 45.538 | 252.991 | 0.38 | 89952 | 0.43 | 10000 | |
| Sn | 118 | 115 | He | 249.838 | 1387.990 | 0.42 | 1082944 | 0.81 | 10000 | |
| Sn | 118 | 115 | NoGas | 249.643 | 1386.905 | 1.50 | 2558041 | 0.38 | 10000 | |
| Sb | 121 | 115 | NoGas | 251.264 | 1395.909 | 0.94 | 3208237 | 0.32 | 10000 | |
| Ba | 137 | 165 | NoGas | 240.522 | 1336.233 | 1.07 | 1193821 | 1.36 | 50000 | |
| Tl | 205 | 165 | NoGas | 227.759 | 1265.329 | 1.01 | 7087224 | 1.01 | 5000 | |
| Pb | 208 | 165 | NoGas | 234.963 | 1305.353 | 0.66 | 9837484 | 0.68 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 434049 | 1.41 | 349963 | 124.03 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 511544 | 0.31 | 475873 | 107.50 | 70 | 120 | |
| Sc | 45 | He | 201700 | 1.54 | 199736 | 100.98 | 70 | 120 | |
| Sc | 45 | NoGas | 2422799 | 1.26 | 2096637 | 115.56 | 70 | 120 | |
| Ge | 72 | H2 | 136075 | 1.21 | 122394 | 111.18 | 70 | 120 | |
| Ge | 72 | He | 128651 | 1.11 | 123228 | 104.40 | 70 | 120 | |
| Ge | 72 | NoGas | 524668 | 1.52 | 485769 | 108.01 | 70 | 120 | |
| In | 115 | H2 | 2855003 | 0.61 | 2822980 | 101.13 | 70 | 120 | |
| In | 115 | He | 1126825 | 0.43 | 1094773 | 102.93 | 70 | 120 | |
| In | 115 | NoGas | 3380696 | 1.26 | 3222140 | 104.92 | 70 | 120 | |
| Tb | 159 | H2 | 5404176 | 0.77 | 5338807 | 101.22 | 70 | 120 | |
| Tb | 159 | He | 3373465 | 0.59 | 3232159 | 104.37 | 70 | 120 | |
| Tb | 159 | NoGas | 4495260 | 1.18 | 4336564 | 103.66 | 70 | 120 | |
| Ho | 165 | H2 | 5107330 | 1.28 | 5094749 | 100.25 | 70 | 120 | |
| Ho | 165 | He | 3324907 | 0.56 | 3120127 | 106.56 | 70 | 120 | |
| Ho | 165 | NoGas | 4384486 | 0.88 | 4144894 | 105.78 | 70 | 120 | |

# Calibration Blank Report

**Sample Table**

| | |
|---|---|
| Sample Name | Calibration Blank |
| Data File Name | 002CALB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T10:57:03-08:00 |
| Sample Type | CalBlk |
| Level | 1 |
| Dilution | 1 |
| Comment | |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD |
|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 103 | 43.64 |
| B | 11 | 45 | NoGas | 16828 | 4.09 |
| Na | 23 | 45 | He | 92021 | 0.42 |
| Mg | 24 | 45 | He | 1327 | 15.10 |
| Al | 27 | 45 | He | 806 | 6.44 |
| K | 39 | 45 | He | 69788 | 3.41 |
| Ca | 44 | 45 | He | 320 | 6.51 |
| Ti | 47 | 45 | He | 14 | 35.26 |
| V | 51 | 45 | He | 1466 | 7.69 |
| Cr | 52 | 45 | He | 1208 | 4.49 |
| Mn | 55 | 45 | He | 3437 | 5.24 |
| Fe | 56 | 45 | He | 19001 | 1.92 |
| Co | 59 | 45 | He | 263 | 7.70 |
| Ni | 60 | 45 | He | 419 | 23.64 |
| Cu | 63 | 45 | He | 651 | 12.39 |
| Zn | 66 | 115 | He | 1151 | 5.54 |
| As | 75 | 115 | He | 49 | 27.55 |
| Se | 78 | 115 | H2 | 8 | 107.84 |
| Se | 78 | 115 | He | 74 | 21.16 |
| Sr | 88 | 115 | NoGas | 323 | 25.94 |
| Mo | 95 | 115 | NoGas | 1617 | 17.50 |
| Ag | 107 | 115 | NoGas | 23 | 49.49 |
| Cd | 111 | 115 | He | 2 | 100.00 |
| Sn | 118 | 115 | He | 2592 | 1.67 |
| Sn | 118 | 115 | NoGas | 5867 | 2.03 |
| Sb | 121 | 115 | NoGas | 2562 | 7.16 |
| Ba | 137 | 165 | NoGas | 117 | 17.85 |
| Tl | 205 | 165 | NoGas | 353 | 12.52 |
| [Pb] | 206 | 165 | NoGas | 600 | 12.58 |
| [Pb] | 207 | 165 | NoGas | 487 | 5.93 |
| Pb | 208 | 165 | NoGas | 2197 | 5.18 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD |
|---|---|---|---|---|
| Li | 6 | NoGas | 349963 | 1.37 |
| Sc | 45 | H2 | 475873 | 0.63 |
| Sc | 45 | He | 199736 | 0.32 |
| Sc | 45 | NoGas | 2096637 | 1.45 |
| Ge | 72 | H2 | 122394 | 0.29 |
| Ge | 72 | He | 123228 | 0.40 |
| Ge | 72 | NoGas | 485769 | 0.09 |
| In | 115 | H2 | 2822980 | 0.43 |
| In | 115 | He | 1094773 | 0.17 |
| In | 115 | NoGas | 3222140 | 0.69 |
| Tb | 159 | H2 | 5338807 | 1.00 |
| Tb | 159 | He | 3232159 | 1.90 |
| Tb | 159 | NoGas | 4336564 | 1.26 |
| Ho | 165 | H2 | 5094749 | 0.73 |
| Ho | 165 | He | 3120127 | 1.11 |
| Ho | 165 | NoGas | 4144894 | 0.83 |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 1 |
| Data File Name | 003CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:03:02-08:00 |
| Sample Type | CalStd |
| Level | 2 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 390 | 11.75 | 1.0000 |
| B | 11 | 45 | NoGas | 16771 | 3.00 | -1.0000 |
| Na | 23 | 45 | He | 84730 | 0.74 | -1.0000 |
| Mg | 24 | 45 | He | 3627 | 1.26 | 1.0000 |
| Al | 27 | 45 | He | 811 | 4.94 | 1.0000 |
| K | 39 | 45 | He | 74010 | 4.14 | 1.0000 |
| Ca | 44 | 45 | He | 450 | 10.91 | 1.0000 |
| Ti | 47 | 45 | He | 26 | 15.07 | 1.0000 |
| V | 51 | 45 | He | 2101 | 4.05 | 1.0000 |
| Cr | 52 | 45 | He | 1819 | 3.30 | 1.0000 |
| Mn | 55 | 45 | He | 3565 | 7.90 | 1.0000 |
| Fe | 56 | 45 | He | 19366 | 1.18 | 1.0000 |
| Co | 59 | 45 | He | 1221 | 7.76 | 1.0000 |
| Ni | 60 | 45 | He | 600 | 6.83 | 1.0000 |
| Cu | 63 | 45 | He | 1450 | 3.16 | 1.0000 |
| Zn | 66 | 115 | He | 1278 | 5.58 | 1.0000 |
| As | 75 | 115 | He | 144 | 41.04 | 1.0000 |
| Se | 78 | 115 | H2 | 28 | 24.98 | 1.0000 |
| Se | 78 | 115 | He | 76 | 49.20 | 1.0000 |
| Sr | 88 | 115 | NoGas | 3501 | 2.73 | 1.0000 |
| Mo | 95 | 115 | NoGas | 1630 | 5.92 | 1.0000 |
| Ag | 107 | 115 | NoGas | 907 | 16.56 | 1.0000 |
| Cd | 111 | 115 | He | 181 | 24.16 | 1.0000 |
| Sn | 118 | 115 | He | 2742 | 2.86 | 1.0000 |
| Sn | 118 | 115 | NoGas | 6539 | 3.02 | 1.0000 |
| Sb | 121 | 115 | NoGas | 2824 | 7.52 | 1.0000 |
| Ba | 137 | 165 | NoGas | 573 | 20.07 | 1.0000 |
| Tl | 205 | 165 | NoGas | 3076 | 7.20 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 1147 | 16.92 | |
| [Pb] | 207 | 165 | NoGas | 1237 | 4.74 | |
| Pb | 208 | 165 | NoGas | 5051 | 11.84 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 356364 | 0.96 | 349963 | 101.83 | 70 | 120 | |
| Sc | 45 | H2 | 473911 | 0.14 | 475873 | 99.59 | 70 | 120 | |
| Sc | 45 | He | 199283 | 0.97 | 199736 | 99.77 | 70 | 120 | |
| Sc | 45 | NoGas | 2154011 | 1.23 | 2096637 | 102.74 | 70 | 120 | |
| Ge | 72 | H2 | 122797 | 0.62 | 122394 | 100.33 | 70 | 120 | |
| Ge | 72 | He | 121257 | 0.45 | 123228 | 98.40 | 70 | 120 | |
| Ge | 72 | NoGas | 485356 | 0.91 | 485769 | 99.91 | 70 | 120 | |
| In | 115 | H2 | 2818009 | 0.91 | 2822980 | 99.82 | 70 | 120 | |
| In | 115 | He | 1096867 | 0.66 | 1094773 | 100.19 | 70 | 120 | |
| In | 115 | NoGas | 3215026 | 1.40 | 3222140 | 99.78 | 70 | 120 | |
| Tb | 159 | H2 | 5346818 | 1.98 | 5338807 | 100.15 | 70 | 120 | |
| Tb | 159 | He | 3200725 | 1.03 | 3232159 | 99.03 | 70 | 120 | |
| Tb | 159 | NoGas | 4297779 | 1.30 | 4336564 | 99.11 | 70 | 120 | |
| Ho | 165 | H2 | 5070074 | 0.84 | 5094749 | 99.52 | 70 | 120 | |
| Ho | 165 | He | 3124303 | 0.40 | 3120127 | 100.13 | 70 | 120 | |
| Ho | 165 | NoGas | 4142641 | 1.12 | 4144894 | 99.95 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 2 |
| Data File Name | 004CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:09:00-08:00 |
| Sample Type | CalStd |
| Level | 3 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 3217 | 6.90 | 1.0000 |
| B | 11 | 45 | NoGas | 17972 | 4.42 | 0.8365 |
| Na | 23 | 45 | He | 108357 | 0.83 | 0.9244 |
| Mg | 24 | 45 | He | 33017 | 1.50 | 0.9997 |
| Al | 27 | 45 | He | 6020 | 5.35 | 0.9960 |
| K | 39 | 45 | He | 78752 | 4.66 | 0.9111 |
| Ca | 44 | 45 | He | 1928 | 5.83 | 0.9998 |
| Ti | 47 | 45 | He | 190 | 12.28 | 0.9994 |
| V | 51 | 45 | He | 7765 | 0.95 | 1.0000 |
| Cr | 52 | 45 | He | 8477 | 3.83 | 0.9999 |
| Mn | 55 | 45 | He | 7770 | 1.48 | 0.9980 |
| Fe | 56 | 45 | He | 139631 | 1.50 | 0.9961 |
| Co | 59 | 45 | He | 12153 | 0.70 | 0.9998 |
| Ni | 60 | 45 | He | 3470 | 3.33 | 0.9993 |
| Cu | 63 | 45 | He | 9574 | 0.86 | 1.0000 |
| Zn | 66 | 115 | He | 2281 | 6.51 | 0.9999 |
| As | 75 | 115 | He | 920 | 4.75 | 0.9999 |
| Se | 78 | 115 | H2 | 256 | 9.16 | 0.9998 |
| Se | 78 | 115 | He | 136 | 26.29 | 0.9972 |
| Sr | 88 | 115 | NoGas | 33045 | 3.06 | 1.0000 |
| Mo | 95 | 115 | NoGas | 6865 | 7.94 | 0.9961 |
| Ag | 107 | 115 | NoGas | 8102 | 2.83 | 1.0000 |
| Cd | 111 | 115 | He | 1983 | 5.59 | 1.0000 |
| Sn | 118 | 115 | He | 6589 | 0.84 | 0.9983 |
| Sn | 118 | 115 | NoGas | 14983 | 3.78 | 0.9997 |
| Sb | 121 | 115 | NoGas | 9530 | 7.59 | 0.9984 |
| Ba | 137 | 165 | NoGas | 4931 | 3.61 | 1.0000 |
| Tl | 205 | 165 | NoGas | 28432 | 2.32 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 10300 | 2.82 | |
| [Pb] | 207 | 165 | NoGas | 8736 | 7.05 | |
| Pb | 208 | 165 | NoGas | 40712 | 1.78 | 0.9997 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 360691 | 1.84 | 349963 | 103.07 | 70 | 120 | |
| Sc | 45 | H2 | 474722 | 1.18 | 475873 | 99.76 | 70 | 120 | |
| Sc | 45 | He | 199841 | 0.84 | 199736 | 100.05 | 70 | 120 | |
| Sc | 45 | NoGas | 2164503 | 0.91 | 2096637 | 103.24 | 70 | 120 | |
| Ge | 72 | H2 | 122944 | 1.58 | 122394 | 100.45 | 70 | 120 | |
| Ge | 72 | He | 120974 | 0.66 | 123228 | 98.17 | 70 | 120 | |
| Ge | 72 | NoGas | 484419 | 1.01 | 485769 | 99.72 | 70 | 120 | |
| In | 115 | H2 | 2828071 | 0.22 | 2822980 | 100.18 | 70 | 120 | |
| In | 115 | He | 1103743 | 1.08 | 1094773 | 100.82 | 70 | 120 | |
| In | 115 | NoGas | 3239990 | 1.29 | 3222140 | 100.55 | 70 | 120 | |
| Tb | 159 | H2 | 5294843 | 0.85 | 5338807 | 99.18 | 70 | 120 | |
| Tb | 159 | He | 3278385 | 1.17 | 3232159 | 101.43 | 70 | 120 | |
| Tb | 159 | NoGas | 4375209 | 1.41 | 4336564 | 100.89 | 70 | 120 | |
| Ho | 165 | H2 | 5083483 | 0.27 | 5094749 | 99.78 | 70 | 120 | |
| Ho | 165 | He | 3146443 | 0.61 | 3120127 | 100.84 | 70 | 120 | |
| Ho | 165 | NoGas | 4181889 | 1.21 | 4144894 | 100.89 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 3 |
| Data File Name | 005CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:14:58-08:00 |
| Sample Type | CalStd |
| Level | 4 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 160759 | 0.64 | 1.0000 |
| B | 11 | 45 | NoGas | 109028 | 0.43 | 0.9999 |
| Na | 23 | 45 | He | 1653811 | 1.16 | 1.0000 |
| Mg | 24 | 45 | He | 1710150 | 1.72 | 1.0000 |
| Al | 27 | 45 | He | 293321 | 1.20 | 1.0000 |
| K | 39 | 45 | He | 640179 | 0.26 | 1.0000 |
| Ca | 44 | 45 | He | 80443 | 1.69 | 1.0000 |
| Ti | 47 | 45 | He | 9961 | 3.22 | 1.0000 |
| V | 51 | 45 | He | 314741 | 0.93 | 1.0000 |
| Cr | 52 | 45 | He | 382043 | 0.51 | 1.0000 |
| Mn | 55 | 45 | He | 236339 | 1.16 | 1.0000 |
| Fe | 56 | 45 | He | 6821525 | 2.05 | 1.0000 |
| Co | 59 | 45 | He | 600235 | 0.61 | 1.0000 |
| Ni | 60 | 45 | He | 164441 | 0.44 | 1.0000 |
| Cu | 63 | 45 | He | 442976 | 0.24 | 1.0000 |
| Zn | 66 | 115 | He | 74776 | 0.51 | 1.0000 |
| As | 75 | 115 | He | 44314 | 0.74 | 1.0000 |
| Se | 78 | 115 | H2 | 12623 | 0.77 | 1.0000 |
| Se | 78 | 115 | He | 3379 | 6.17 | 1.0000 |
| Sr | 88 | 115 | NoGas | 1663074 | 0.64 | 1.0000 |
| Mo | 95 | 115 | NoGas | 315689 | 1.47 | 1.0000 |
| Ag | 107 | 115 | NoGas | 406829 | 0.13 | 1.0000 |
| Cd | 111 | 115 | He | 95573 | 0.37 | 1.0000 |
| Sn | 118 | 115 | He | 212691 | 1.32 | 1.0000 |
| Sn | 118 | 115 | NoGas | 491627 | 0.33 | 1.0000 |
| Sb | 121 | 115 | NoGas | 608639 | 0.65 | 1.0000 |
| Ba | 137 | 165 | NoGas | 236766 | 0.41 | 1.0000 |
| Tl | 205 | 165 | NoGas | 1407913 | 0.71 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 495625 | 0.46 | |
| [Pb] | 207 | 165 | NoGas | 427409 | 0.71 | |
| Pb | 208 | 165 | NoGas | 1968219 | 0.70 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 370351 | 0.60 | 349963 | 105.83 | 70 | 120 | |
| Sc | 45 | H2 | 486172 | 0.45 | 475873 | 102.16 | 70 | 120 | |
| Sc | 45 | He | 200563 | 1.25 | 199736 | 100.41 | 70 | 120 | |
| Sc | 45 | NoGas | 2187098 | 2.48 | 2096637 | 104.31 | 70 | 120 | |
| Ge | 72 | H2 | 122822 | 0.81 | 122394 | 100.35 | 70 | 120 | |
| Ge | 72 | He | 121635 | 1.20 | 123228 | 98.71 | 70 | 120 | |
| Ge | 72 | NoGas | 483004 | 0.41 | 485769 | 99.43 | 70 | 120 | |
| In | 115 | H2 | 2853125 | 0.66 | 2822980 | 101.07 | 70 | 120 | |
| In | 115 | He | 1099190 | 1.39 | 1094773 | 100.40 | 70 | 120 | |
| In | 115 | NoGas | 3219483 | 1.44 | 3222140 | 99.92 | 70 | 120 | |
| Tb | 159 | H2 | 5424652 | 0.54 | 5338807 | 101.61 | 70 | 120 | |
| Tb | 159 | He | 3266843 | 1.48 | 3232159 | 101.07 | 70 | 120 | |
| Tb | 159 | NoGas | 4439319 | 1.78 | 4336564 | 102.37 | 70 | 120 | |
| Ho | 165 | H2 | 5167503 | 0.12 | 5094749 | 101.43 | 70 | 120 | |
| Ho | 165 | He | 3145781 | 1.03 | 3120127 | 100.82 | 70 | 120 | |
| Ho | 165 | NoGas | 4148593 | 1.12 | 4144894 | 100.09 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 4 |
| Data File Name | 006CALS.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:20:59-08:00 |
| Sample Type | CalStd |
| Level | 5 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 328097 | 0.98 | 0.9999 |
| B | 11 | 45 | NoGas | 212372 | 0.60 | 0.9995 |
| Na | 23 | 45 | He | 3158915 | 0.86 | 0.9999 |
| Mg | 24 | 45 | He | 3332541 | 0.66 | 0.9999 |
| Al | 27 | 45 | He | 586722 | 0.84 | 1.0000 |
| K | 39 | 45 | He | 1215106 | 0.26 | 1.0000 |
| Ca | 44 | 45 | He | 158983 | 0.71 | 1.0000 |
| Ti | 47 | 45 | He | 20190 | 0.87 | 1.0000 |
| V | 51 | 45 | He | 630439 | 0.32 | 1.0000 |
| Cr | 52 | 45 | He | 761143 | 0.63 | 1.0000 |
| Mn | 55 | 45 | He | 467418 | 0.35 | 1.0000 |
| Fe | 56 | 45 | He | 13577724 | 0.57 | 1.0000 |
| Co | 59 | 45 | He | 1194102 | 0.51 | 1.0000 |
| Ni | 60 | 45 | He | 323766 | 0.53 | 1.0000 |
| Cu | 63 | 45 | He | 887773 | 0.55 | 1.0000 |
| Zn | 66 | 115 | He | 147380 | 0.25 | 1.0000 |
| As | 75 | 115 | He | 88615 | 1.20 | 1.0000 |
| Se | 78 | 115 | H2 | 25273 | 2.48 | 1.0000 |
| Se | 78 | 115 | He | 6390 | 3.12 | 0.9998 |
| Sr | 88 | 115 | NoGas | 3333818 | 0.24 | 1.0000 |
| Mo | 95 | 115 | NoGas | 639925 | 0.61 | 1.0000 |
| Ag | 107 | 115 | NoGas | 810678 | 0.52 | 1.0000 |
| Cd | 111 | 115 | He | 191641 | 0.65 | 1.0000 |
| Sn | 118 | 115 | He | 421664 | 0.46 | 1.0000 |
| Sn | 118 | 115 | NoGas | 979477 | 0.52 | 1.0000 |
| Sb | 121 | 115 | NoGas | 1217764 | 0.87 | 1.0000 |
| Ba | 137 | 165 | NoGas | 470209 | 0.59 | 1.0000 |
| Tl | 205 | 165 | NoGas | 2986053 | 0.90 | 0.9997 |
| [Pb] | 206 | 165 | NoGas | 972238 | 1.42 | |
| [Pb] | 207 | 165 | NoGas | 852769 | 0.66 | |
| Pb | 208 | 165 | NoGas | 3982316 | 0.60 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 375630 | 1.04 | 349963 | 107.33 | 70 | 120 | |
| Sc | 45 | H2 | 482607 | 0.61 | 475873 | 101.41 | 70 | 120 | |
| Sc | 45 | He | 201076 | 0.90 | 199736 | 100.67 | 70 | 120 | |
| Sc | 45 | NoGas | 2177578 | 1.78 | 2096637 | 103.86 | 70 | 120 | |
| Ge | 72 | H2 | 122796 | 0.41 | 122394 | 100.33 | 70 | 120 | |
| Ge | 72 | He | 119744 | 0.27 | 123228 | 97.17 | 70 | 120 | |
| Ge | 72 | NoGas | 485339 | 1.41 | 485769 | 99.91 | 70 | 120 | |
| In | 115 | H2 | 2876756 | 1.18 | 2822980 | 101.90 | 70 | 120 | |
| In | 115 | He | 1091109 | 0.24 | 1094773 | 99.67 | 70 | 120 | |
| In | 115 | NoGas | 3218039 | 0.70 | 3222140 | 99.87 | 70 | 120 | |
| Tb | 159 | H2 | 5423029 | 0.85 | 5338807 | 101.58 | 70 | 120 | |
| Tb | 159 | He | 3263922 | 0.60 | 3232159 | 100.98 | 70 | 120 | |
| Tb | 159 | NoGas | 4333812 | 2.16 | 4336564 | 99.94 | 70 | 120 | |
| Ho | 165 | H2 | 5125827 | 0.64 | 5094749 | 100.61 | 70 | 120 | |
| Ho | 165 | He | 3172578 | 0.67 | 3120127 | 101.68 | 70 | 120 | |
| Ho | 165 | NoGas | 4161409 | 0.69 | 4144894 | 100.40 | 70 | 120 | |

# Initial Calibration Verification (ICV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICV |
| Data File Name | 007_ICV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:27:00-08:00 |
| Sample Type | ICV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 98.780 | 0.338 | 326807 | 0.38 | 100 | 98.8 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 109.509 | 0.836 | 231185 | 0.62 | 100 | 109.5 | 89.6 | 110.4 | |
| Na | 23 | 45 | He | 2431.900 | 1.185 | 3065754 | 0.96 | 2500 | 97.3 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2462.072 | 1.473 | 1639246 | 1.00 | 2500 | 98.5 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 2460.110 | 0.734 | 716492 | 0.42 | 2500 | 98.4 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 2556.000 | 0.852 | 1522083 | 1.30 | 2500 | 102.2 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2656.688 | 0.520 | 84234 | 0.92 | 2500 | 106.3 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 99.917 | 4.019 | 19983 | 3.55 | 100 | 99.9 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 98.798 | 0.540 | 618282 | 0.42 | 100 | 98.8 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 97.913 | 0.676 | 740705 | 0.49 | 100 | 97.9 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 97.682 | 0.155 | 453998 | 0.58 | 100 | 97.7 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 2465.244 | 1.123 | 16631614 | 0.67 | 2500 | 98.6 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 98.013 | 0.504 | 1163822 | 0.21 | 100 | 98.0 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 98.420 | 0.144 | 317473 | 0.43 | 100 | 98.4 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 98.278 | 0.737 | 866241 | 0.44 | 100 | 98.3 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 93.088 | 1.045 | 138913 | 1.41 | 100 | 93.1 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 82.975 | 0.705 | 74305 | 0.96 | 100 | 83.0 | 89.6 | 110.4 | >+\- 10% |
| Se | 78 | 115 | H2 | 97.951 | 1.341 | 24402 | 2.04 | 100 | 98.0 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 95.979 | 1.151 | 6257 | 1.55 | 100 | 96.0 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 96.151 | 1.497 | 3264784 | 1.38 | 100 | 96.2 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 98.137 | 0.857 | 637913 | 0.55 | 100 | 98.1 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 49.397 | 0.422 | 816705 | 0.41 | 50 | 98.8 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 97.583 | 0.853 | 188880 | 0.23 | 100 | 97.6 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.827 | 0.604 | 213736 | 0.61 | 100 | 49.8 | 89.6 | 110.4 | >+\- 10% |
| Sn | 118 | 115 | NoGas | 49.264 | 0.589 | 494506 | 0.47 | 100 | 49.3 | 89.6 | 110.4 | >+\- 10% |
| Sb | 121 | 115 | NoGas | 109.245 | 1.915 | 1354564 | 1.61 | 100 | 109.2 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 97.245 | 1.651 | 465789 | 0.55 | 100 | 97.2 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 98.332 | 2.908 | 2952129 | 1.17 | 100 | 98.3 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 97.366 | 1.613 | 3934709 | 0.28 | 100 | 97.4 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 383213 | 0.93 | 349963 | 109.50 | 70 | 120 | |
| Sc | 45 | H2 | 482847 | 0.39 | 475873 | 101.47 | 70 | 120 | |
| Sc | 45 | He | 199640 | 0.49 | 199736 | 99.95 | 70 | 120 | |
| Sc | 45 | NoGas | 2206365 | 0.21 | 2096637 | 105.23 | 70 | 120 | |
| Ge | 72 | H2 | 122827 | 0.17 | 122394 | 100.35 | 70 | 120 | |
| Ge | 72 | He | 120732 | 0.98 | 123228 | 97.97 | 70 | 120 | |
| Ge | 72 | NoGas | 489201 | 0.52 | 485769 | 100.71 | 70 | 120 | |
| In | 115 | H2 | 2830949 | 0.76 | 2822980 | 100.28 | 70 | 120 | |
| In | 115 | He | 1104220 | 0.64 | 1094773 | 100.86 | 70 | 120 | |
| In | 115 | NoGas | 3279275 | 0.31 | 3222140 | 101.77 | 70 | 120 | |
| Tb | 159 | H2 | 5493488 | 0.44 | 5338807 | 102.90 | 70 | 120 | |
| Tb | 159 | He | 3295181 | 0.89 | 3232159 | 101.95 | 70 | 120 | |
| Tb | 159 | NoGas | 4415602 | 0.92 | 4336564 | 101.82 | 70 | 120 | |
| Ho | 165 | H2 | 5108991 | 0.40 | 5094749 | 100.28 | 70 | 120 | |
| Ho | 165 | He | 3212318 | 1.17 | 3120127 | 102.95 | 70 | 120 | |
| Ho | 165 | NoGas | 4231248 | 1.79 | 4144894 | 102.08 | 70 | 120 | |

# Initial Calibration Blank (ICB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICB |
| Data File Name | 010_ICB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T11:44:58-08:00 |
| Sample Type | ICB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.010 | -71.9 | 77 | 32.8 | 0.1 | |
| B | 11 | 45 | NoGas | 0.231 | 111.0 | 18533 | 2.7 | 8 | |
| Na | 23 | 45 | He | -16.723 | -5.5 | 71045 | 1.0 | 50 | |
| Mg | 24 | 45 | He | -1.259 | -2.6 | 486 | 5.2 | 20 | |
| Al | 27 | 45 | He | -1.200 | -16.7 | 453 | 13.5 | 10 | |
| K | 39 | 45 | He | -1.804 | -344.3 | 68262 | 4.7 | 40 | |
| Ca | 44 | 45 | He | -1.064 | -97.8 | 284 | 12.2 | 150 | |
| Ti | 47 | 45 | He | -0.022 | -230.8 | 10 | 100.0 | 0.5 | |
| V | 51 | 45 | He | -0.061 | -11.5 | 1080 | 3.6 | 0.4 | |
| Cr | 52 | 45 | He | -0.010 | -85.2 | 1124 | 5.9 | 0.2 | |
| Mn | 55 | 45 | He | -0.230 | -15.1 | 2356 | 6.1 | 0.3 | |
| Fe | 56 | 45 | He | -1.386 | -2.5 | 9587 | 1.7 | 30 | |
| Co | 59 | 45 | He | -0.017 | -9.2 | 59 | 31.2 | 0.4 | |
| Ni | 60 | 45 | He | -0.067 | -26.2 | 202 | 28.1 | 0.4 | |
| Cu | 63 | 45 | He | -0.001 | -671.7 | 634 | 12.1 | 0.4 | |
| Zn | 66 | 115 | He | -0.106 | -40.9 | 1010 | 6.5 | 15 | |
| As | 75 | 115 | He | 0.135 | 25.9 | 171 | 18.5 | 0.2 | |
| Se | 78 | 115 | H2 | 0.062 | 42.9 | 23 | 28.6 | 0.4 | |
| Se | 78 | 115 | He | -0.153 | -140.6 | 66 | 20.6 | 0.4 | |
| Sr | 88 | 115 | NoGas | -0.001 | -72.0 | 287 | 10.1 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.072 | -13.7 | 1163 | 5.7 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.003 | 56.4 | 70 | 37.8 | 0.1 | |
| Cd | 111 | 115 | He | 0.000 | -9019.7 | 2 | 173.2 | 0.1 | |
| Sn | 118 | 115 | He | -0.020 | -135.7 | 2545 | 4.6 | 0.1 | |
| Sn | 118 | 115 | NoGas | 0.032 | 46.6 | 6211 | 2.6 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.161 | 10.4 | 4537 | 4.1 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.004 | 145.3 | 137 | 18.4 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.008 | 38.8 | 593 | 15.5 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.029 | -1.6 | 1070 | 0.0 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 395897 | 0.86 | 349963 | 113.13 | 70 | 120 | |
| Sc | 45 | H2 | 481549 | 0.58 | 475873 | 101.19 | 70 | 120 | |
| Sc | 45 | He | 198304 | 0.75 | 199736 | 99.28 | 70 | 120 | |
| Sc | 45 | NoGas | 2250975 | 1.79 | 2096637 | 107.36 | 70 | 120 | |
| Ge | 72 | H2 | 125702 | 1.24 | 122394 | 102.70 | 70 | 120 | |
| Ge | 72 | He | 121309 | 0.06 | 123228 | 98.44 | 70 | 120 | |
| Ge | 72 | NoGas | 497038 | 0.72 | 485769 | 102.32 | 70 | 120 | |
| In | 115 | H2 | 2839870 | 0.95 | 2822980 | 100.60 | 70 | 120 | |
| In | 115 | He | 1110286 | 0.61 | 1094773 | 101.42 | 70 | 120 | |
| In | 115 | NoGas | 3238768 | 0.42 | 3222140 | 100.52 | 70 | 120 | |
| Tb | 159 | H2 | 5366055 | 0.81 | 5338807 | 100.51 | 70 | 120 | |
| Tb | 159 | He | 3295345 | 0.85 | 3232159 | 101.95 | 70 | 120 | |
| Tb | 159 | NoGas | 4359892 | 0.44 | 4336564 | 100.54 | 70 | 120 | |
| Ho | 165 | H2 | 5086123 | 0.91 | 5094749 | 99.83 | 70 | 120 | |
| Ho | 165 | He | 3179107 | 0.98 | 3120127 | 101.89 | 70 | 120 | |
| Ho | 165 | NoGas | 4192437 | 1.74 | 4144894 | 101.15 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 014_CCV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T12:08:56-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 51.609 | 1.223 | 177901 | 1.34 | 50 | 103.2 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 48.726 | 2.919 | 117385 | 2.35 | 50 | 97.5 | 89.6 | 110.4 | |
| Na | 23 | 45 | He | 1268.239 | 1.967 | 1675483 | 1.41 | 1250 | 101.5 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2553.993 | 0.899 | 1734309 | 0.27 | 2500 | 102.2 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 1011.066 | 0.980 | 300825 | 1.10 | 1000 | 101.1 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 997.843 | 0.564 | 649404 | 0.58 | 1000 | 99.8 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2518.069 | 0.817 | 81444 | 0.29 | 2500 | 100.7 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 50.849 | 2.028 | 10380 | 1.00 | 50 | 101.7 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 49.638 | 1.007 | 317570 | 0.86 | 50 | 99.3 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 49.925 | 1.524 | 385791 | 0.81 | 50 | 99.8 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 50.146 | 0.630 | 239417 | 1.05 | 50 | 100.3 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 1015.202 | 0.388 | 6997151 | 0.70 | 1000 | 101.5 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 50.301 | 1.276 | 609286 | 0.35 | 50 | 100.6 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 50.486 | 1.424 | 166305 | 1.38 | 50 | 101.0 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 50.160 | 1.234 | 451246 | 0.62 | 50 | 100.3 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 48.936 | 0.466 | 75233 | 0.25 | 50 | 97.9 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 49.730 | 1.349 | 45561 | 2.01 | 50 | 99.5 | 89.6 | 110.4 | |
| Se | 78 | 115 | H2 | 51.259 | 1.744 | 12935 | 2.62 | 50 | 102.5 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 49.652 | 3.959 | 3347 | 4.26 | 50 | 99.3 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 50.495 | 2.564 | 1742333 | 1.05 | 50 | 101.0 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 49.233 | 0.434 | 326108 | 1.64 | 50 | 98.5 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 24.823 | 1.782 | 417066 | 0.69 | 25 | 99.3 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 49.646 | 0.436 | 98267 | 1.00 | 50 | 99.3 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.152 | 0.852 | 215634 | 0.99 | 50 | 98.3 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 48.940 | 1.572 | 499270 | 0.77 | 50 | 97.9 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 48.630 | 1.873 | 614272 | 1.45 | 50 | 97.3 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 49.488 | 1.523 | 242553 | 0.76 | 50 | 99.0 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.624 | 1.332 | 1493834 | 0.59 | 50 | 97.2 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 48.796 | 1.715 | 2018369 | 0.23 | 50 | 97.6 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 414132 | 0.58 | 349963 | 118.34 | 70 | 120 | |
| Sc | 45 | H2 | 496800 | 0.18 | 475873 | 104.40 | 70 | 120 | |
| Sc | 45 | He | 203625 | 1.08 | 199736 | 101.95 | 70 | 120 | |
| Sc | 45 | NoGas | 2298120 | 0.12 | 2096637 | 109.61 | 70 | 120 | |
| Ge | 72 | H2 | 126263 | 0.34 | 122394 | 103.16 | 70 | 120 | |
| Ge | 72 | He | 122796 | 0.70 | 123228 | 99.65 | 70 | 120 | |
| Ge | 72 | NoGas | 501401 | 0.87 | 485769 | 103.22 | 70 | 120 | |
| In | 115 | H2 | 2866740 | 1.80 | 2822980 | 101.55 | 70 | 120 | |
| In | 115 | He | 1129128 | 0.70 | 1094773 | 103.14 | 70 | 120 | |
| In | 115 | NoGas | 3333081 | 1.79 | 3222140 | 103.44 | 70 | 120 | |
| Tb | 159 | H2 | 5459322 | 1.38 | 5338807 | 102.26 | 70 | 120 | |
| Tb | 159 | He | 3374059 | 1.37 | 3232159 | 104.39 | 70 | 120 | |
| Tb | 159 | NoGas | 4482729 | 1.64 | 4336564 | 103.37 | 70 | 120 | |
| Ho | 165 | H2 | 5164874 | 0.92 | 5094749 | 101.38 | 70 | 120 | |
| Ho | 165 | He | 3263213 | 1.93 | 3120127 | 104.59 | 70 | 120 | |
| Ho | 165 | NoGas | 4328392 | 1.50 | 4144894 | 104.43 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 016_CCB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T12:20:52-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.016 | -36.1 | 60 | 33.3 | 0.1 | |
| B | 11 | 45 | NoGas | -1.613 | -25.0 | 15584 | 5.3 | 8 | |
| Na | 23 | 45 | He | -21.641 | -6.1 | 66821 | 2.4 | 50 | |
| Mg | 24 | 45 | He | -1.329 | -1.8 | 451 | 3.5 | 20 | |
| Al | 27 | 45 | He | -1.237 | -18.2 | 454 | 15.0 | 10 | |
| K | 39 | 45 | He | -6.732 | -33.1 | 67248 | 2.1 | 40 | |
| Ca | 44 | 45 | He | -2.606 | -16.4 | 242 | 5.2 | 150 | |
| Ti | 47 | 45 | He | -0.029 | -215.5 | 9 | 142.0 | 0.5 | |
| V | 51 | 45 | He | 0.011 | 150.8 | 1561 | 6.3 | 0.4 | |
| Cr | 52 | 45 | He | -0.028 | -20.6 | 1019 | 4.2 | 0.2 | |
| Mn | 55 | 45 | He | -0.309 | -4.3 | 2049 | 3.5 | 0.3 | |
| Fe | 56 | 45 | He | -1.417 | -1.8 | 9630 | 1.4 | 30 | |
| Co | 59 | 45 | He | -0.014 | -5.1 | 102 | 8.2 | 0.4 | |
| Ni | 60 | 45 | He | -0.079 | -17.3 | 168 | 26.5 | 0.4 | |
| Cu | 63 | 45 | He | -0.007 | -36.0 | 599 | 4.0 | 0.4 | |
| Zn | 66 | 115 | He | -0.054 | -118.8 | 1102 | 9.3 | 15 | |
| As | 75 | 115 | He | 0.040 | 69.1 | 87 | 29.0 | 0.2 | |
| Se | 78 | 115 | H2 | 0.030 | 177.1 | 16 | 86.6 | 0.4 | |
| Se | 78 | 115 | He | -0.201 | -215.4 | 63 | 45.0 | 0.4 | |
| Sr | 88 | 115 | NoGas | -0.001 | -267.6 | 313 | 20.5 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.096 | -12.0 | 1050 | 6.7 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.000 | -146.9 | 17 | 69.3 | 0.1 | |
| Cd | 111 | 115 | He | 0.000 | -24.5 | 2 | 0.0 | 0.1 | |
| Sn | 118 | 115 | He | 0.004 | 241.0 | 2684 | 0.9 | 0.1 | |
| Sn | 118 | 115 | NoGas | 0.008 | 259.1 | 6205 | 3.3 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.208 | 6.0 | 5318 | 3.6 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.015 | 87.3 | 197 | 33.9 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.002 | 40.2 | 444 | 7.0 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.037 | -2.5 | 763 | 5.3 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 417099 | 1.66 | 349963 | 119.18 | 70 | 120 | |
| Sc | 45 | H2 | 496411 | 0.59 | 475873 | 104.32 | 70 | 120 | |
| Sc | 45 | He | 203623 | 0.45 | 199736 | 101.95 | 70 | 120 | |
| Sc | 45 | NoGas | 2359597 | 0.79 | 2096637 | 112.54 | 70 | 120 | |
| Ge | 72 | H2 | 130074 | 1.48 | 122394 | 106.28 | 70 | 120 | |
| Ge | 72 | He | 124419 | 1.35 | 123228 | 100.97 | 70 | 120 | |
| Ge | 72 | NoGas | 510289 | 0.84 | 485769 | 105.05 | 70 | 120 | |
| In | 115 | H2 | 2894430 | 0.72 | 2822980 | 102.53 | 70 | 120 | |
| In | 115 | He | 1125688 | 0.71 | 1094773 | 102.82 | 70 | 120 | |
| In | 115 | NoGas | 3364488 | 0.65 | 3222140 | 104.42 | 70 | 120 | |
| Tb | 159 | H2 | 5401539 | 1.67 | 5338807 | 101.18 | 70 | 120 | |
| Tb | 159 | He | 3348764 | 1.42 | 3232159 | 103.61 | 70 | 120 | |
| Tb | 159 | NoGas | 4508654 | 0.63 | 4336564 | 103.97 | 70 | 120 | |
| Ho | 165 | H2 | 5118024 | 0.46 | 5094749 | 100.46 | 70 | 120 | |
| Ho | 165 | He | 3236435 | 0.35 | 3120127 | 103.73 | 70 | 120 | |
| Ho | 165 | NoGas | 4323444 | 1.69 | 4144894 | 104.31 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 104_CCV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:06:02-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 48.005 | 0.492 | 174481 | 0.34 | 50 | 96.0 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 455.035 | 2.500 | 993579 | 2.32 | 50 | 910.1 | 89.6 | 110.4 | >+/- 10% |
| Na | 23 | 45 | He | 1393.593 | 2.088 | 1870391 | 1.24 | 1250 | 111.5 | 89.6 | 110.4 | >+/- 10% |
| Mg | 24 | 45 | He | 2468.619 | 3.545 | 1711477 | 2.71 | 2500 | 98.7 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 981.014 | 0.900 | 298057 | 0.59 | 1000 | 98.1 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 987.784 | 1.650 | 657111 | 0.76 | 1000 | 98.8 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2453.506 | 1.735 | 81034 | 0.88 | 2500 | 98.1 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 48.212 | 1.228 | 10051 | 0.83 | 50 | 96.4 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 48.833 | 1.014 | 319025 | 0.48 | 50 | 97.7 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 47.796 | 0.563 | 377217 | 1.06 | 50 | 95.6 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 48.189 | 0.841 | 235061 | 0.88 | 50 | 96.4 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 962.175 | 1.504 | 6772094 | 0.73 | 1000 | 96.2 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 47.855 | 0.748 | 591935 | 0.88 | 50 | 95.7 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 46.809 | 0.998 | 157473 | 0.41 | 50 | 93.6 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 47.193 | 0.481 | 433565 | 0.40 | 50 | 94.4 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 46.236 | 0.836 | 73896 | 0.83 | 50 | 92.5 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 48.575 | 0.725 | 46218 | 0.46 | 50 | 97.1 | 89.6 | 110.4 | |
| Se | 78 | 115 | H2 | 50.799 | 2.557 | 13231 | 1.46 | 50 | 101.6 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 49.311 | 4.468 | 3453 | 4.41 | 50 | 98.6 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 49.703 | 1.123 | 1813364 | 1.31 | 50 | 99.4 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 47.493 | 1.910 | 332553 | 0.48 | 50 | 95.0 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 23.983 | 0.405 | 426030 | 1.03 | 25 | 95.9 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 47.599 | 0.105 | 97849 | 0.22 | 50 | 95.2 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.591 | 0.130 | 225930 | 0.16 | 50 | 99.2 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 48.852 | 2.038 | 526823 | 0.63 | 50 | 97.7 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 47.969 | 2.732 | 640488 | 1.38 | 50 | 95.9 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 49.087 | 0.762 | 252435 | 0.49 | 50 | 98.2 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.587 | 1.275 | 1566403 | 2.37 | 50 | 97.2 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 47.130 | 0.707 | 2045625 | 0.64 | 50 | 94.3 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 431423 | 1.25 | 349963 | 123.28 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 512128 | 0.36 | 475873 | 107.62 | 70 | 120 | |
| Sc | 45 | He | 207916 | 0.85 | 199736 | 104.10 | 70 | 120 | |
| Sc | 45 | NoGas | 2423081 | 0.17 | 2096637 | 115.57 | 70 | 120 | |
| Ge | 72 | H2 | 132313 | 0.85 | 122394 | 108.10 | 70 | 120 | |
| Ge | 72 | He | 127968 | 1.38 | 123228 | 103.85 | 70 | 120 | |
| Ge | 72 | NoGas | 523424 | 0.87 | 485769 | 107.75 | 70 | 120 | |
| In | 115 | H2 | 2959494 | 1.37 | 2822980 | 104.84 | 70 | 120 | |
| In | 115 | He | 1172702 | 0.28 | 1094773 | 107.12 | 70 | 120 | |
| In | 115 | NoGas | 3523345 | 1.43 | 3222140 | 109.35 | 70 | 120 | |
| Tb | 159 | H2 | 5593517 | 0.62 | 5338807 | 104.77 | 70 | 120 | |
| Tb | 159 | He | 3490319 | 0.94 | 3232159 | 107.99 | 70 | 120 | |
| Tb | 159 | NoGas | 4661851 | 0.74 | 4336564 | 107.50 | 70 | 120 | |
| Ho | 165 | H2 | 5340458 | 0.86 | 5094749 | 104.82 | 70 | 120 | |
| Ho | 165 | He | 3397838 | 0.25 | 3120127 | 108.90 | 70 | 120 | |
| Ho | 165 | NoGas | 4541191 | 1.18 | 4144894 | 109.56 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 106_CCB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:17:57-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.031 | -10.2 | 7 | 173.2 | 0.1 | |
| B | 11 | 45 | NoGas | 373.808 | 1.4 | 834951 | 1.2 | 8 | >LOD |
| Na | 23 | 45 | He | 101.669 | 1.1 | 225580 | 0.6 | 50 | >LOD |
| Mg | 24 | 45 | He | -1.103 | -6.7 | 618 | 7.7 | 20 | |
| Al | 27 | 45 | He | -0.813 | -11.8 | 593 | 5.5 | 10 | |
| K | 39 | 45 | He | 5.515 | 88.7 | 76030 | 4.5 | 40 | |
| Ca | 44 | 45 | He | -2.337 | -29.0 | 257 | 9.4 | 150 | |
| Ti | 47 | 45 | He | -0.040 | -69.3 | 7 | 86.6 | 0.5 | |
| V | 51 | 45 | He | 0.057 | 29.4 | 1899 | 5.2 | 0.4 | |
| Cr | 52 | 45 | He | -0.052 | -14.6 | 848 | 6.5 | 0.2 | |
| Mn | 55 | 45 | He | -0.503 | -6.2 | 1165 | 12.3 | 0.3 | |
| Fe | 56 | 45 | He | -1.305 | -1.6 | 10638 | 2.0 | 30 | |
| Co | 59 | 45 | He | -0.016 | -25.5 | 80 | 62.9 | 0.4 | |
| Ni | 60 | 45 | He | -0.094 | -3.7 | 122 | 10.3 | 0.4 | |
| Cu | 63 | 45 | He | 0.146 | 12.2 | 2021 | 8.6 | 0.4 | |
| Zn | 66 | 115 | He | -0.146 | -19.9 | 1020 | 4.4 | 15 | |
| As | 75 | 115 | He | 0.037 | 78.3 | 89 | 31.2 | 0.2 | |
| Se | 78 | 115 | H2 | 0.010 | 141.9 | 11 | 34.6 | 0.4 | |
| Se | 78 | 115 | He | 0.592 | 51.9 | 122 | 17.3 | 0.4 | >LOD |
| Sr | 88 | 115 | NoGas | 0.006 | 17.4 | 577 | 7.2 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.085 | -11.0 | 1190 | 5.1 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.002 | 81.6 | 57 | 44.4 | 0.1 | |
| Cd | 111 | 115 | He | 0.002 | 44.9 | 7 | 31.5 | 0.1 | |
| Sn | 118 | 115 | He | 0.001 | 4427.0 | 2827 | 4.5 | 0.1 | |
| Sn | 118 | 115 | NoGas | -0.002 | -2476.2 | 6478 | 6.0 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.060 | 20.2 | 3647 | 4.4 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.011 | 115.6 | 183 | 33.3 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.003 | 3.0 | 471 | 1.3 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.041 | -3.6 | 620 | 9.8 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 445135 | 0.54 | 349963 | 127.19 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 519347 | 0.76 | 475873 | 109.14 | 70 | 120 | |
| Sc | 45 | He | 208205 | 0.66 | 199736 | 104.24 | 70 | 120 | |
| Sc | 45 | NoGas | 2468292 | 1.21 | 2096637 | 117.73 | 70 | 120 | |
| Ge | 72 | H2 | 135719 | 1.56 | 122394 | 110.89 | 70 | 120 | |
| Ge | 72 | He | 131154 | 1.41 | 123228 | 106.43 | 70 | 120 | |
| Ge | 72 | NoGas | 543881 | 1.30 | 485769 | 111.96 | 70 | 120 | |
| In | 115 | H2 | 3073457 | 1.62 | 2822980 | 108.87 | 70 | 120 | |
| In | 115 | He | 1192588 | 0.20 | 1094773 | 108.93 | 70 | 120 | |
| In | 115 | NoGas | 3568524 | 0.70 | 3222140 | 110.75 | 70 | 120 | |
| Tb | 159 | H2 | 5588457 | 2.18 | 5338807 | 104.68 | 70 | 120 | |
| Tb | 159 | He | 3499888 | 0.46 | 3232159 | 108.28 | 70 | 120 | |
| Tb | 159 | NoGas | 4692811 | 1.83 | 4336564 | 108.21 | 70 | 120 | |
| Ho | 165 | H2 | 5331455 | 1.06 | 5094749 | 104.65 | 70 | 120 | |
| Ho | 165 | He | 3436052 | 2.50 | 3120127 | 110.13 | 70 | 120 | |
| Ho | 165 | NoGas | 4544829 | 1.83 | 4144894 | 109.65 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 117_CCV.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T22:23:52-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 49.292 | 1.252 | 182253 | 0.67 | 50 | 98.6 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 323.729 | 1.554 | 724830 | 1.42 | 50 | 647.5 | 89.6 | 110.4 | >+/- 10% |
| Na | 23 | 45 | He | 1287.113 | 0.684 | 1737020 | 0.32 | 1250 | 103.0 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2458.487 | 0.728 | 1706801 | 0.47 | 2500 | 98.3 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 984.368 | 0.914 | 299443 | 1.08 | 1000 | 98.4 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 991.505 | 0.361 | 660145 | 0.35 | 1000 | 99.2 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2463.129 | 0.755 | 81454 | 0.64 | 2500 | 98.5 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 48.592 | 2.977 | 10143 | 3.34 | 50 | 97.2 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 48.482 | 0.282 | 317135 | 0.35 | 50 | 97.0 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 47.448 | 0.446 | 374917 | 0.45 | 50 | 94.9 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 48.232 | 0.546 | 235555 | 0.77 | 50 | 96.5 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 958.437 | 0.225 | 6754485 | 0.60 | 1000 | 95.8 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 47.984 | 0.555 | 594241 | 0.26 | 50 | 96.0 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 46.799 | 0.716 | 157633 | 0.39 | 50 | 93.6 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 46.555 | 0.308 | 428230 | 0.28 | 50 | 93.1 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 46.343 | 1.742 | 74312 | 1.28 | 50 | 92.7 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 47.722 | 0.773 | 45562 | 0.28 | 50 | 95.4 | 89.6 | 110.4 | |
| Se | 78 | 115 | H2 | 49.220 | 1.185 | 13167 | 1.28 | 50 | 98.4 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 47.260 | 4.267 | 3324 | 4.36 | 50 | 94.5 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 49.093 | 1.956 | 1796820 | 1.56 | 50 | 98.2 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 47.595 | 0.678 | 334389 | 0.98 | 50 | 95.2 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 23.894 | 0.466 | 425817 | 0.67 | 25 | 95.6 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 47.370 | 0.460 | 97711 | 0.53 | 50 | 94.7 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.232 | 0.373 | 225082 | 0.53 | 50 | 98.5 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 48.201 | 1.035 | 521655 | 1.29 | 50 | 96.4 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 48.503 | 1.847 | 649824 | 2.05 | 50 | 97.0 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 48.575 | 0.486 | 250474 | 0.12 | 50 | 97.1 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.189 | 1.723 | 1557472 | 1.48 | 50 | 96.4 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 46.878 | 1.183 | 2040097 | 0.63 | 50 | 93.8 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 447026 | 1.31 | 349963 | 127.74 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 526619 | 1.09 | 475873 | 110.66 | 70 | 120 | |
| Sc | 45 | He | 208164 | 0.40 | 199736 | 104.22 | 70 | 120 | |
| Sc | 45 | NoGas | 2465184 | 1.38 | 2096637 | 117.58 | 70 | 120 | |
| Ge | 72 | H2 | 139323 | 0.73 | 122394 | 113.83 | 70 | 120 | |
| Ge | 72 | He | 129089 | 1.42 | 123228 | 104.76 | 70 | 120 | |
| Ge | 72 | NoGas | 530577 | 1.80 | 485769 | 109.22 | 70 | 120 | |
| In | 115 | H2 | 3039242 | 1.15 | 2822980 | 107.66 | 70 | 120 | |
| In | 115 | He | 1176706 | 0.59 | 1094773 | 107.48 | 70 | 120 | |
| In | 115 | NoGas | 3534593 | 0.49 | 3222140 | 109.70 | 70 | 120 | |
| Tb | 159 | H2 | 5493028 | 0.59 | 5338807 | 102.89 | 70 | 120 | |
| Tb | 159 | He | 3446730 | 1.04 | 3232159 | 106.64 | 70 | 120 | |
| Tb | 159 | NoGas | 4725118 | 0.80 | 4336564 | 108.96 | 70 | 120 | |
| Ho | 165 | H2 | 5350218 | 0.90 | 5094749 | 105.01 | 70 | 120 | |
| Ho | 165 | He | 3381774 | 2.11 | 3120127 | 108.39 | 70 | 120 | |
| Ho | 165 | NoGas | 4553169 | 0.61 | 4144894 | 109.85 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 119_CCB.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T22:35:48-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.032 | -4.8 | 3 | 173.2 | 0.1 | |
| B | 11 | 45 | NoGas | 257.912 | 1.4 | 586365 | 0.6 | 8 | >LOD |
| Na | 23 | 45 | He | 40.268 | 32.1 | 149237 | 11.3 | 50 | |
| Mg | 24 | 45 | He | -1.189 | -20.6 | 566 | 30.6 | 20 | |
| Al | 27 | 45 | He | -0.917 | -9.0 | 569 | 4.4 | 10 | |
| K | 39 | 45 | He | 4.653 | 116.6 | 76505 | 4.2 | 40 | |
| Ca | 44 | 45 | He | -1.507 | -128.3 | 288 | 22.6 | 150 | |
| Ti | 47 | 45 | He | -0.035 | -92.5 | 8 | 89.2 | 0.5 | |
| V | 51 | 45 | He | 0.037 | 46.3 | 1793 | 6.0 | 0.4 | |
| Cr | 52 | 45 | He | -0.051 | -17.4 | 868 | 8.2 | 0.2 | |
| Mn | 55 | 45 | He | -0.496 | -2.8 | 1212 | 5.5 | 0.3 | |
| Fe | 56 | 45 | He | -1.360 | -0.3 | 10383 | 0.5 | 30 | |
| Co | 59 | 45 | He | -0.016 | -4.0 | 74 | 11.3 | 0.4 | |
| Ni | 60 | 45 | He | -0.098 | -9.6 | 110 | 28.9 | 0.4 | |
| Cu | 63 | 45 | He | 0.025 | 31.7 | 917 | 7.6 | 0.4 | |
| Zn | 66 | 115 | He | -0.133 | -26.7 | 1041 | 5.6 | 15 | |
| As | 75 | 115 | He | 0.051 | 44.9 | 102 | 21.7 | 0.2 | |
| Se | 78 | 115 | H2 | 0.043 | 46.6 | 20 | 28.9 | 0.4 | |
| Se | 78 | 115 | He | 0.098 | 273.5 | 88 | 20.9 | 0.4 | |
| Sr | 88 | 115 | NoGas | 0.002 | 136.4 | 437 | 24.5 | 0.1 | |
| Mo | 95 | 115 | NoGas | -0.126 | -27.6 | 897 | 27.8 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.000 | 201.2 | 33 | 45.8 | 0.1 | |
| Cd | 111 | 115 | He | 0.002 | 52.3 | 6 | 33.3 | 0.1 | |
| Sn | 118 | 115 | He | 0.008 | 282.6 | 2856 | 3.2 | 0.1 | |
| Sn | 118 | 115 | NoGas | -0.023 | -91.4 | 6196 | 2.6 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.308 | 9.6 | 6922 | 5.2 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.025 | 25.9 | 253 | 13.9 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.004 | 23.5 | 499 | 6.0 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.040 | -9.3 | 650 | 25.9 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 453243 | 1.29 | 349963 | 129.51 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 524503 | 1.02 | 475873 | 110.22 | 70 | 120 | |
| Sc | 45 | He | 210966 | 0.40 | 199736 | 105.62 | 70 | 120 | |
| Sc | 45 | NoGas | 2485856 | 0.79 | 2096637 | 118.56 | 70 | 120 | |
| Ge | 72 | H2 | 138722 | 1.00 | 122394 | 113.34 | 70 | 120 | |
| Ge | 72 | He | 130833 | 0.93 | 123228 | 106.17 | 70 | 120 | |
| Ge | 72 | NoGas | 543815 | 0.55 | 485769 | 111.95 | 70 | 120 | |
| In | 115 | H2 | 3054890 | 2.01 | 2822980 | 108.22 | 70 | 120 | |
| In | 115 | He | 1191504 | 0.37 | 1094773 | 108.84 | 70 | 120 | |
| In | 115 | NoGas | 3537075 | 1.46 | 3222140 | 109.77 | 70 | 120 | |
| Tb | 159 | H2 | 5578025 | 1.40 | 5338807 | 104.48 | 70 | 120 | |
| Tb | 159 | He | 3485165 | 1.01 | 3232159 | 107.83 | 70 | 120 | |
| Tb | 159 | NoGas | 4692950 | 1.17 | 4336564 | 108.22 | 70 | 120 | |
| Ho | 165 | H2 | 5319296 | 1.83 | 5094749 | 104.41 | 70 | 120 | |
| Ho | 165 | He | 3387625 | 0.48 | 3120127 | 108.57 | 70 | 120 | |
| Ho | 165 | NoGas | 4525203 | 1.00 | 4144894 | 109.18 | 70 | 120 | |

# METALS

## Raw Data

APPL, INC.

# METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| 6020A | LEAD (PB) (DISSOL | 0.40 U | 3.0 | 0.40 | 0.19 | ug/L | 11/05/14 | 11/05/14 | #62A14-141105A1-AZ05593 |

*Metals SC-Blank-REG MDLs*
*Printed: 11/11/14 10:44:28 AM*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | 141105A BLK |
| Data File Name | 107SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:23:57-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.031 | -0.034 | -10.12 | 7 | 173.21 | 10000 | |
| B | 11 | 45 | NoGas | 375.005 | 416.672 | 1.09 | 845713 | 0.90 | 10000 | |
| Na | 23 | 45 | He | 108.402 | 120.447 | 1.24 | 234430 | 0.73 | 1000000 | |
| Mg | 24 | 45 | He | -0.323 | -0.359 | -50.04 | 1160 | 9.50 | 1000000 | |
| Al | 27 | 45 | He | 0.177 | 0.196 | 87.01 | 894 | 5.61 | 1000000 | |
| K | 39 | 45 | He | 4.663 | 5.181 | 136.21 | 75589 | 4.69 | 500000 | |
| Ca | 44 | 45 | He | 3.722 | 4.136 | 0.92 | 457 | 0.73 | 500000 | |
| Ti | 47 | 45 | He | 0.050 | 0.056 | 49.42 | 26 | 19.92 | 10000 | |
| V | 51 | 45 | He | -0.150 | -0.167 | -9.65 | 549 | 16.76 | 10000 | |
| Cr | 52 | 45 | He | 0.203 | 0.226 | 10.15 | 2862 | 6.20 | 10000 | |
| Mn | 55 | 45 | He | -0.453 | -0.503 | -5.87 | 1406 | 8.72 | 50000 | |
| Fe | 56 | 45 | He | -0.241 | -0.268 | -379.03 | 18158 | 36.00 | 1000000 | |
| Co | 59 | 45 | He | -0.017 | -0.019 | -3.92 | 61 | 13.73 | 10000 | |
| Ni | 60 | 45 | He | 0.094 | 0.104 | 14.04 | 753 | 6.43 | 10000 | |
| Cu | 63 | 45 | He | 0.141 | 0.157 | 10.14 | 1975 | 6.63 | 10000 | |
| Zn | 66 | 115 | He | -0.012 | -0.013 | -423.51 | 1212 | 6.37 | 50000 | |
| As | 75 | 115 | He | -0.002 | -0.003 | -377.48 | 50 | 17.64 | 2000 | |
| Se | 78 | 115 | H2 | 0.102 | 0.114 | 47.30 | 34 | 36.64 | 10000 | |
| Se | 78 | 115 | He | 0.526 | 0.585 | 34.83 | 116 | 10.92 | 10000 | |
| Sr | 88 | 115 | NoGas | 0.024 | 0.027 | 24.34 | 1224 | 18.30 | 50000 | |
| Mo | 95 | 115 | NoGas | -0.048 | -0.053 | -44.57 | 1403 | 10.51 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.001 | 0.001 | 198.25 | 37 | 62.98 | 5000 | |
| Cd | 111 | 115 | He | 0.000 | 0.000 | -285.07 | 1 | 173.21 | 10000 | |
| Sn | 118 | 115 | He | -0.499 | -0.555 | -0.67 | 530 | 2.74 | 10000 | |
| Sn | 118 | 115 | NoGas | -0.487 | -0.541 | -0.44 | 1207 | 2.72 | 10000 | |
| Sb | 121 | 115 | NoGas | -0.034 | -0.038 | -3.01 | 2297 | 1.26 | 10000 | |
| Ba | 137 | 165 | NoGas | 0.038 | 0.042 | 42.04 | 313 | 24.79 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.050 | 0.055 | 9.23 | 1925 | 7.20 | 5000 | |
| Pb | 208 | 165 | NoGas | -0.041 | -0.045 | -10.24 | 613 | 28.07 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 459666 | 0.57 | 349963 | 131.35 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 513778 | 0.95 | 475873 | 107.97 | 70 | 120 | |
| Sc | 45 | He | 208438 | 0.54 | 199736 | 104.36 | 70 | 120 | |
| Sc | 45 | NoGas | 2492311 | 1.25 | 2096637 | 118.87 | 70 | 120 | |
| Ge | 72 | H2 | 135214 | 0.92 | 122394 | 110.47 | 70 | 120 | |
| Ge | 72 | He | 130814 | 0.47 | 123228 | 106.16 | 70 | 120 | |
| Ge | 72 | NoGas | 531266 | 0.97 | 485769 | 109.37 | 70 | 120 | |
| In | 115 | H2 | 2924241 | 0.56 | 2822980 | 103.59 | 70 | 120 | |
| In | 115 | He | 1170758 | 0.23 | 1094773 | 106.94 | 70 | 120 | |
| In | 115 | NoGas | 3452730 | 0.94 | 3222140 | 107.16 | 70 | 120 | |
| Tb | 159 | H2 | 5318196 | 0.58 | 5338807 | 99.61 | 70 | 120 | |
| Tb | 159 | He | 3399050 | 1.66 | 3232159 | 105.16 | 70 | 120 | |
| Tb | 159 | NoGas | 4546700 | 0.42 | 4336564 | 104.85 | 70 | 120 | |
| Ho | 165 | H2 | 5061784 | 0.19 | 5094749 | 99.35 | 70 | 120 | |
| Ho | 165 | He | 3336740 | 1.13 | 3120127 | 106.94 | 70 | 120 | |
| Ho | 165 | NoGas | 4392630 | 0.82 | 4144894 | 105.98 | 70 | 120 | |

# Laboratory Control Spike Recovery

## METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVED) | 50.0 | 44.4 | 88.8 | 80-120 | 11/05/14 | 11/05/14 | #62A14-141105A1-AZ05593 |

Comments:

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | 141105A LCS |
| Data File Name | 108SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:29:56-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 8.737 | 9.707 | 0.61 | 32896 | 0.89 | 10000 | |
| B | 11 | 45 | NoGas | 389.158 | 432.398 | 1.42 | 880460 | 0.13 | 10000 | |
| Na | 23 | 45 | He | 4260.955 | 4734.395 | 0.60 | 5561159 | 0.61 | 1000000 | |
| Mg | 24 | 45 | He | 4207.189 | 4674.655 | 0.35 | 2936941 | 0.25 | 1000000 | |
| Al | 27 | 45 | He | 351.015 | 390.017 | 0.13 | 107945 | 0.19 | 1000000 | |
| K | 39 | 45 | He | 869.441 | 966.046 | 0.44 | 591263 | 0.28 | 500000 | |
| Ca | 44 | 45 | He | 4165.902 | 4628.780 | 0.41 | 138338 | 0.47 | 500000 | |
| Ti | 47 | 45 | He | 43.174 | 47.971 | 3.26 | 9066 | 3.27 | 10000 | |
| V | 51 | 45 | He | 43.685 | 48.539 | 0.49 | 287582 | 0.58 | 10000 | |
| Cr | 52 | 45 | He | 41.416 | 46.018 | 0.38 | 329335 | 0.48 | 10000 | |
| Mn | 55 | 45 | He | 41.128 | 45.698 | 0.88 | 202562 | 0.97 | 50000 | |
| Fe | 56 | 45 | He | 161.034 | 178.927 | 0.43 | 1158067 | 0.53 | 1000000 | |
| Co | 59 | 45 | He | 41.301 | 45.890 | 0.24 | 514510 | 0.19 | 10000 | |
| Ni | 60 | 45 | He | 39.729 | 44.143 | 0.91 | 134668 | 1.00 | 10000 | |
| Cu | 63 | 45 | He | 38.901 | 43.223 | 0.43 | 360030 | 0.48 | 10000 | |
| Zn | 66 | 115 | He | 75.305 | 83.672 | 0.80 | 119467 | 0.46 | 50000 | |
| As | 75 | 115 | He | 39.417 | 43.796 | 1.94 | 37480 | 1.97 | 2000 | |
| Se | 78 | 115 | H2 | 40.121 | 44.579 | 2.18 | 10352 | 2.89 | 10000 | |
| Se | 78 | 115 | He | 38.512 | 42.791 | 7.80 | 2711 | 7.52 | 10000 | |
| Sr | 88 | 115 | NoGas | 43.620 | 48.467 | 0.93 | 1552559 | 0.68 | 50000 | |
| Mo | 95 | 115 | NoGas | 43.771 | 48.634 | 0.63 | 299168 | 0.62 | 10000 | |
| Ag | 107 | 115 | NoGas | 17.226 | 19.139 | 0.89 | 298517 | 0.92 | 5000 | |
| Cd | 111 | 115 | He | 7.810 | 8.677 | 1.33 | 16041 | 1.38 | 10000 | |
| Sn | 118 | 115 | He | 43.911 | 48.791 | 0.34 | 200189 | 0.18 | 10000 | |
| Sn | 118 | 115 | NoGas | 43.589 | 48.432 | 0.91 | 459301 | 0.51 | 10000 | |
| Sb | 121 | 115 | NoGas | 45.164 | 50.182 | 1.03 | 588595 | 1.53 | 10000 | |
| Ba | 137 | 165 | NoGas | 43.155 | 47.950 | 3.23 | 216060 | 1.87 | 50000 | |
| Tl | 205 | 165 | NoGas | 38.963 | 43.292 | 0.93 | 1222977 | 0.59 | 5000 | |
| Pb | 208 | 165 | NoGas | 39.984 | 44.427 | 1.07 | 1690131 | 0.58 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 469498 | 0.59 | 349963 | 134.16 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 512702 | 0.60 | 475873 | 107.74 | 70 | 120 | |
| Sc | 45 | He | 209379 | 0.10 | 199736 | 104.83 | 70 | 120 | |
| Sc | 45 | NoGas | 2502677 | 1.45 | 2096637 | 119.37 | 70 | 120 | |
| Ge | 72 | H2 | 136059 | 0.78 | 122394 | 111.17 | 70 | 120 | |
| Ge | 72 | He | 130917 | 0.48 | 123228 | 106.24 | 70 | 120 | |
| Ge | 72 | NoGas | 531783 | 0.96 | 485769 | 109.47 | 70 | 120 | |
| In | 115 | H2 | 2930528 | 0.86 | 2822980 | 103.81 | 70 | 120 | |
| In | 115 | He | 1171624 | 0.34 | 1094773 | 107.02 | 70 | 120 | |
| In | 115 | NoGas | 3437218 | 1.19 | 3222140 | 106.67 | 70 | 120 | |
| Tb | 159 | H2 | 5302100 | 0.84 | 5338807 | 99.31 | 70 | 120 | |
| Tb | 159 | He | 3389941 | 0.98 | 3232159 | 104.88 | 70 | 120 | |
| Tb | 159 | NoGas | 4583283 | 0.70 | 4336564 | 105.69 | 70 | 120 | |
| Ho | 165 | H2 | 5062441 | 1.09 | 5094749 | 99.37 | 70 | 120 | |
| Ho | 165 | He | 3324787 | 1.09 | 3120127 | 106.56 | 70 | 120 | |
| Ho | 165 | NoGas | 4421847 | 1.49 | 4144894 | 106.68 | 70 | 120 | |

# Matrix Spike Recoveries

## METALS

APPL ID: **141105W-05593 MS - 191727**

Sample ID: AZ05593

Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl ug/L | Matrix Res ug/L | SPK Res ug/L | DUP Res ug/L | SPK % Recovery | DUP % Recovery | RPD | RPD Max | Recovery Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVE | 50.0 | ND | 49.0 | 45.9 | 98.0 | 91.8 | 6.5 | 20 | 80-120 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | 191727 | AZ05593 |

Comments: _____

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ05593W35 MS 1/5 |
| Data File Name | 113SMPL.d |
| Data Path Name | D:\DATA\141105A.b |
| Acq Date Time | 2014-11-05T21:59:57-08:00 |
| Sample Type | Sample |
| Dilution | 5.555555556 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 1.944 | 10.797 | 4.10 | 7058 | 3.70 | 10000 | |
| B | 11 | 45 | NoGas | 337.466 | 1874.811 | 0.53 | 729574 | 0.49 | 10000 | |
| Na | 23 | 45 | He | 26271.759 | 145954.215 | 0.26 | 33266686 | 0.47 | 1000000 | |
| Mg | 24 | 45 | He | 9743.366 | 54129.813 | 0.70 | 6694379 | 0.48 | 1000000 | |
| Al | 27 | 45 | He | 76.260 | 423.665 | 1.34 | 23738 | 1.07 | 1000000 | |
| K | 39 | 45 | He | 886.902 | 4927.233 | 0.35 | 592351 | 0.53 | 500000 | |
| Ca | 44 | 45 | He | 7374.914 | 40971.745 | 0.51 | 240850 | 0.31 | 500000 | |
| Ti | 47 | 45 | He | 9.517 | 52.871 | 1.94 | 1979 | 2.08 | 10000 | |
| V | 51 | 45 | He | 12.540 | 69.665 | 0.76 | 82348 | 0.53 | 10000 | |
| Cr | 52 | 45 | He | 9.529 | 52.941 | 0.43 | 75561 | 0.42 | 10000 | |
| Mn | 55 | 45 | He | 11.338 | 62.988 | 2.15 | 57543 | 1.88 | 50000 | |
| Fe | 56 | 45 | He | 34.805 | 193.362 | 0.46 | 261795 | 0.64 | 1000000 | |
| Co | 59 | 45 | He | 9.141 | 50.781 | 1.03 | 112316 | 1.17 | 10000 | |
| Ni | 60 | 45 | He | 8.639 | 47.993 | 1.52 | 29167 | 1.45 | 10000 | |
| Cu | 63 | 45 | He | 8.764 | 48.686 | 1.02 | 80369 | 0.78 | 10000 | |
| Zn | 66 | 115 | He | 23.665 | 131.473 | 1.80 | 38226 | 1.73 | 50000 | |
| As | 75 | 115 | He | 9.457 | 52.538 | 2.04 | 8993 | 1.82 | 2000 | |
| Se | 78 | 115 | H2 | 8.666 | 48.142 | 5.94 | 2299 | 6.00 | 10000 | |
| Se | 78 | 115 | He | 9.806 | 54.476 | 10.87 | 747 | 9.97 | 10000 | |
| Sr | 88 | 115 | NoGas | 63.490 | 352.721 | 2.05 | 2254621 | 0.72 | 50000 | |
| Mo | 95 | 115 | NoGas | 9.525 | 52.914 | 0.68 | 66312 | 1.38 | 10000 | |
| Ag | 107 | 115 | NoGas | 3.680 | 20.446 | 1.62 | 63660 | 0.13 | 5000 | |
| Cd | 111 | 115 | He | 1.781 | 9.894 | 1.62 | 3644 | 1.83 | 10000 | |
| Sn | 118 | 115 | He | 9.272 | 51.512 | 1.59 | 44271 | 1.22 | 10000 | |
| Sn | 118 | 115 | NoGas | 9.244 | 51.354 | 2.02 | 102109 | 0.37 | 10000 | |
| Sb | 121 | 115 | NoGas | 10.510 | 58.391 | 2.39 | 138753 | 0.84 | 10000 | |
| Ba | 137 | 165 | NoGas | 11.238 | 62.433 | 1.18 | 56752 | 1.27 | 50000 | |
| Tl | 205 | 165 | NoGas | 8.516 | 47.309 | 0.71 | 269402 | 0.69 | 5000 | |
| Pb | 208 | 165 | NoGas | 8.813 | 48.963 | 0.85 | 376922 | 0.99 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 434175 | 1.09 | 349963 | 124.06 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 521154 | 1.13 | 475873 | 109.52 | 70 | 120 | |
| Sc | 45 | He | 206135 | 0.23 | 199736 | 103.20 | 70 | 120 | |
| Sc | 45 | NoGas | 2382835 | 0.64 | 2096637 | 113.65 | 70 | 120 | |
| Ge | 72 | H2 | 138541 | 0.74 | 122394 | 113.19 | 70 | 120 | |
| Ge | 72 | He | 129327 | 1.24 | 123228 | 104.95 | 70 | 120 | |
| Ge | 72 | NoGas | 532797 | 0.52 | 485769 | 109.68 | 70 | 120 | |
| In | 115 | H2 | 3005081 | 0.77 | 2822980 | 106.45 | 70 | 120 | |
| In | 115 | He | 1166660 | 0.27 | 1094773 | 106.57 | 70 | 120 | |
| In | 115 | NoGas | 3430130 | 1.59 | 3222140 | 106.46 | 70 | 120 | |
| Tb | 159 | H2 | 5446522 | 1.44 | 5338807 | 102.02 | 70 | 120 | |
| Tb | 159 | He | 3378819 | 0.54 | 3232159 | 104.54 | 70 | 120 | |
| Tb | 159 | NoGas | 4581410 | 1.04 | 4336564 | 105.65 | 70 | 120 | |
| Ho | 165 | H2 | 5203550 | 0.93 | 5094749 | 102.14 | 70 | 120 | |
| Ho | 165 | He | 3346044 | 0.28 | 3120127 | 107.24 | 70 | 120 | |
| Ho | 165 | NoGas | 4451505 | 0.32 | 4144894 | 107.40 | 70 | 120 | |

# US EPA Tune Check Sample Report

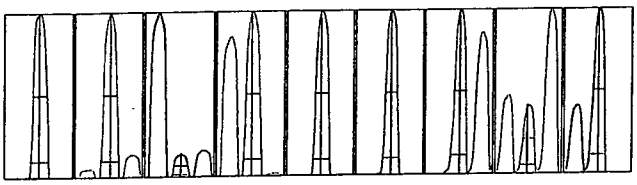
**Batch Folder** D:\DATA\Agilent Test.b
**Report Comment** C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
**Instrument Name** G3281A JP12101628

**[NoGas]**

| Mass | Count (Mean) | RSD% (Actual) | RSD% (Required) | RSD% (Flag) |
|---|---|---|---|---|
| 9 | 5320103 | 0.36 | 5.00 | |
| 24 | 20275605 | 0.50 | 5.00 | |
| 25 | 2773927 | 0.21 | 5.00 | |
| 26 | 3248884 | 0.50 | 5.00 | |
| 59 | 37346214 | 0.22 | 5.00 | |
| 115 | 51997937 | 0.86 | 5.00 | |
| 206 | 11917073 | 0.56 | 5.00 | |
| 207 | 10568943 | 0.38 | 5.00 | |
| 208 | 25044538 | 0.81 | 5.00 | |

| Mass | Replicate 1 Count | Replicate 2 Count | Replicate 3 Count | Replicate 4 Count | Replicate 5 Count |
|---|---|---|---|---|---|
| 9 | 5317560 | 5323673 | 5302166 | 5306036 | 5351077 |
| 24 | 20212444 | 20131546 | 20348679 | 20307342 | 20378013 |
| 25 | 2763696 | 2775360 | 2778239 | 2775842 | 2776499 |
| 26 | 3228315 | 3234695 | 3257767 | 3259145 | 3264497 |
| 59 | 37211212 | 37387118 | 37407556 | 37320587 | 37404598 |
| 115 | 51772596 | 51404189 | 52602684 | 52141066 | 52069152 |
| 206 | 11855366 | 11852906 | 12011898 | 11925427 | 11939770 |
| 207 | 10512196 | 10603973 | 10544261 | 10607516 | 10576770 |
| 208 | 24809791 | 25159675 | 24848403 | 25140665 | 25264154 |

**Integration Time [sec] =** 0.1



| Mass | Peak Height | Axis (Actual) | Axis (Required) | Axis (Flag) | Width-X% (Actual) | Width-X% (Required) | Width-X% (Flag) |
|---|---|---|---|---|---|---|---|
| 9 | 845064 | 9.05 | 8.9 - 9.1 | | 0.771 | 0.900 | |
| 24 | 3307675 | 24.10 | 23.9 - 24.1 | | 0.766 | 0.900 | |
| 25 | 451701 | 25.10 | 24.9 - 25.1 | | 0.752 | 0.900 | |
| 26 | 531326 | 26.05 | 25.9 - 26.1 | | 0.765 | 0.900 | |
| 59 | 6214844 | 59.05 | 58.9 - 59.1 | | 0.729 | 0.900 | |
| 115 | 9407439 | 115.10 | 114.9 - 115.1 | | 0.713 | 0.900 | |
| 206 | 2248474 | 206.05 | 205.9 - 206.1 | | 0.727 | 0.900 | |
| 207 | 1946016 | 207.00 | 206.9 - 207.1 | | 0.724 | 0.900 | |
| 208 | 4696037 | 208.05 | 207.9 - 208.1 | | 0.739 | 0.900 | |

**X% =** 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

**Tune Parameters**

**## Plasma Paramters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min | | | |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % | | | |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps | | | |
| S/C Temp | 2 | °C | | | | | | |

**## Lenses Parameters ##**

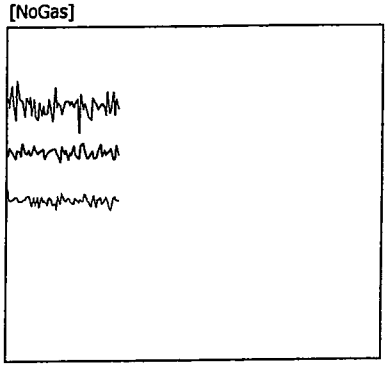
| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V | | | |
| Extract 2 | -145.0 | V | Cell Entrance | -30 | V | | | |
| Omega Bias | -70 | V | Cell Exit | -30 | V | | | |
| Deflect | 11.8 | V | | | | | | |

**## Cell Parameters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| Use Gas | false | | 3rd Gas Flow | 0 | % | | | |
| He Flow | 0.0 | mL/min | OctP Bias | -8.0 | V | | | |
| H2 Flow | 0.0 | mL/min | OctP RF | 170 | V | | | |
| Energy Discrimination | 5.1 | V | | | | | | |

# Current Signal

[NoGas]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 7 | 2000 | 1516 | 1528.1 | 3.78 |
| 59 | 5000 | 3025 | 3149.9 | 3.48 |
| 89 | 10000 | 4753 | 4768.1 | 2.69 |
| 140 | 10000 | 4648 | 4647.4 | 2.48 |
| 205 | 10000 | 6159 | 6220.1 | 2.11 |
| 156/140 | 1 | 0.452 % | 0.417 % | 34.04 |
| 70/140 | 5 | 2.775 % | 2.737 % | 10.99 |

**Integration Time [sec]** 0.10

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V |
| Extract 2 | -145.0 | V | Cell Entrance | -30 | V |
| Omega Bias | -70 | V | Cell Exit | -30 | V |
| Deflect | 11.8 | V | | | |

**## Cell Parameters ##**

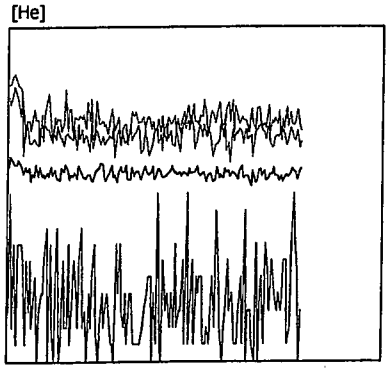
| | | | | | |
|---|---|---|---|---|---|
| Use Gas | false | | 3rd Gas Flow | 0 | % |
| He Flow | 0.0 | mL/min | OctP Bias | -8.0 | V |
| H2 Flow | 0.0 | mL/min | OctP RF | 170 | V |
| Energy Discrimination | 5.1 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.62E+2 | Pa | S/C Temp (L) | 2.0 | °C |
| Analyzer Press | 2.57E-4 | Pa | Reflected Power | 7 | W |
| Forward Power | 1601 | W | | | |

# Current Signal

[He]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 59 | 2000 | 1378 | 1448.2 | 4.74 |
| 89 | 2000 | 1311 | 1362.0 | 6.48 |
| 140 | 5000 | 3158 | 3134.1 | 3.75 |
| 205 | 10000 | 5766 | 5627.8 | 2.72 |
| 156/140 | 1 | 0.253 % | 0.225 % | 53.29 |
| 75 | 20 | 3 | 3.6 | 69.82 |
| 78 | 50 | 10 | 9.6 | 46.66 |

**Integration Time [sec]** 0.10

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V |
| Extract 2 | -145.0 | V | Cell Entrance | -40 | V |
| Omega Bias | -70 | V | Cell Exit | -60 | V |
| Deflect | 0.8 | V | | | |

**## Cell Parameters ##**

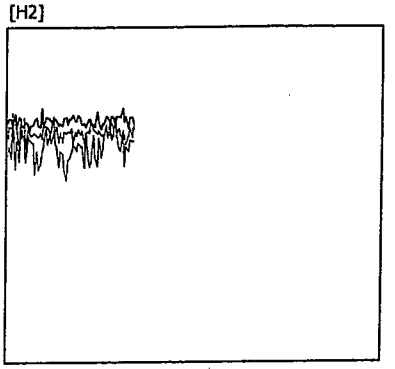
| | | | | | |
|---|---|---|---|---|---|
| Use Gas | true | | 3rd Gas Flow | 0 | % |
| He Flow | 3.7 | mL/min | OctP Bias | -19.0 | V |
| H2 Flow | 0.0 | mL/min | OctP RF | 170 | V |
| Energy Discrimination | 5.0 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.62E+2 | Pa | S/C Temp (L) | 1.9 | °C |
| Analyzer Press | 3.59E-4 | Pa | Reflected Power | 7 | W |
| Forward Power | 1599 | W | | | |

# Current Signal

[H2]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 59 | 500 | 331 | 321.0 | 6.91 |
| 89 | 5000 | 3534 | 3427.3 | 2.79 |
| 140 | 2000 | 1287 | 1270.5 | 5.25 |
| 205 | 10000 | 7145 | 7213.0 | 1.95 |
| 56 | 10000 | 5637 | 5967.9 | 8.99 |
| 78 | 20 | 2 | 1.1 | 107.65 |
| 80 | 50 | 15 | 14.5 | 32.91 |

**Integration Time [sec]** 0.10

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.41 | L/min |
| RF Matching | 2.22 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 8.7 | V |
| Extract 2 | -145.0 | V | Cell Entrance | -30 | V |
| Omega Bias | -70 | V | Cell Exit | -60 | V |
| Deflect | -2.4 | V | | | |

**## Cell Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Use Gas | true | | 3rd Gas Flow | 0 | % |
| He Flow | 0.0 | mL/min | OctP Bias | -18.0 | V |
| H2 Flow | 6.0 | mL/min | OctP RF | 170 | V |
| Energy Discrimination | 3.0 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.67E+2 | Pa | S/C Temp (L) | 2.0 | °C |
| Analyzer Press | 1.45E-3 | Pa | Reflected Power | 7 | W |
| Forward Power | 1599 | W | | | |

RE 11/2/14

RE 11/2/14

**3% HCL**

30 mL of HCL in 1000 mL of DI H2O

Prep Date: 11/02/14
Exp Date: 11/02/15
Prepared by: RE

Lot# HCL: BDH 4114020

RE 11/2/14

**1.1% STANNOUS CHLORIDE**

11g SnCl2 EMD Lot #B1006939-348
30 mL HCl BDH Lot #41140210
Brought to 1000 mL with DI Water
Prep. Date 11/02/14
Exp. Date 11/02/15
By RE

RE 11/2/14

SJH 11/03/14

**Internal Standard Concentration**

| Amt | STD | Element | Vendor | Lot# | Final Conc. in Std | Expires |
|---|---|---|---|---|---|---|
| 100uL | 1001 ug/mL | Li | BDH | F2-L102140-33279 | 200 ug/L | 02/01/15 |
| 250uL | 1000 ug/mL | Sc | o2si | 1051538-32901 | 500ug/L | 03/30/15 |
| 250uL | 1000 ug/mL | Ge | CPI | 14H207-34125 | 500ug/L | 04/07/14 |
| 250uL | 1000 ug/mL | In | CPI | 13H191-32872 | 500ug/L | 03/20/15 |
| 250uL | 1000 ug/mL | Tb | CPI | 13J004-33038 | 500ug/L | 04/15/15 |
| 250uL | 1000 ug/mL | Ho | CPI | 13G236-32873 | 500ug/L | 03/20/15 |

Prep: 11/03/14 By: SJH Prep in - 1%HNO3/1.0%HCL: Final Volume: 250mL
Expires: 12/02/14

SJH 10/03/14

SJH 10/03/14
6020/200.8

**ICP-MS STANDARDS** Prep'd by: SJH
Prep Date: Today
Expires: 1 week

**Prep 1% HNO3/1.0%HCL**
20 mL HNO3 / 2000 mL Di Water
Lot #
20 mL HCL / 2000mL DI Water
Lot #

**Internal Standard Mix:** Prep 11/03/14

**Standard 4**

| Amount | STD | Manufacturer | Lot # |
|---|---|---|---|
| 50 uL | CCV-A | ENV EXPRESS | 1331823-33166 |
| 50 uL | CCV-B | ENV EXPRESS | 1331824-33167 |
| 50 uL | CCV-C | ENV EXPRESS | 1331825-33168 |

Prepared in 100 mL of 1% HNO3/1.0% HCL

**Standard 3**
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 2**
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 1**
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICP-MS ICV**
Amount STD
50 uL QCS ICV A CPI 13I145-32869
50 uL QCS ICV B CPI 13I145-32870
Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICSA Prep:**
1 mL ICSA-DF2 O2Si 1053467-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

**ICSAB Prep:**
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2Si 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

**Second Source As:**
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

SJH 11/03/14

SJH 11/04/14
6020/200.8
(A)

**ICP-MS STANDARDS** Prep'd by: SJH
Prep Date: Today
Expires: 1 week

**Prep 1% HNO3/1.0%HCL**
20 mL HNO3 / 2000 mL Di Water
Lot #
20 mL HCL / 2000mL Di Water
Lot #

**Internal Standard Mix: Prep** 11/03/14

**Standard 4**

| Amount | STD | Manufacturer | Lot # |
|---|---|---|---|
| 50 uL | CCV-A | ENV EXPRESS | 1331823-33166 |
| 50 uL | CCV-B | ENV EXPRESS | 1331824-33167 |
| 50 uL | CCV-C | ENV EXPRESS | 1331825-33168 |

Prepared in 100 mL of 1% HNO3/1.0% HCL

**Standard 3**
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 2**
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 1**
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICP-MS ICV**

| Amount | STD | | |
|---|---|---|---|
| 50 uL | QCS ICV A | CPI | 13I145-32869 |
| 50 uL | QCS ICV B | CPI | 13I145-32870 |

Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICSA Prep:**
1 mL ICSA-DF2 O2Si 1053487-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

**ICSAB Prep:**
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2Si 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

**Second Source As:**
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

SJH 11/04/14

SJH 11/05/14
6020/200.8
(A)

**ICP-MS STANDARDS** Prep'd by: SJH
Prep Date: Today
Expires: 1 week

**Prep 1% HNO3/1.0%HCL**
20 mL HNO3 / 2000 mL Di Water
Lot #
20 mL HCL / 2000mL Di Water
Lot #

**Internal Standard Mix: Prep** 11/03/14

**Standard 4**

| Amount | STD | Manufacturer | Lot # |
|---|---|---|---|
| 50 uL | CCV-A | ENV EXPRESS | 1331823-33166 |
| 50 uL | CCV-B | ENV EXPRESS | 1331824-33167 |
| 50 uL | CCV-C | ENV EXPRESS | 1331825-33168 |

Prepared in 100 mL of 1% HNO3/1.0% HCL

**Standard 3**
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 2**
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 1**
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICP-MS ICV**

| Amount | STD | | |
|---|---|---|---|
| 50 uL | QCS ICV A | CPI | 13I145-32869 |
| 50 uL | QCS ICV B | CPI | 13I145-32870 |

Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICSA Prep:**
1 mL ICSA-DF2 O2Si 1053487-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

**ICSAB Prep:**
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2Si 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

**Second Source As:**
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

SJH 11/05/14

SJH 11/05/14
200.7
(A)

| 2%HNO3 / 2%HCl BLK | | | | | 200.7 ICV | | | | |
|---|---|---|---|---|---|---|---|---|---|
| AMOUNT | REAGENT | MANUFACTURER | LOT | OPEN DATE | AMOUNT | STD | MANUFACTURER | LOT | EXP DATE |
| 40 mL | HCL | BDH | 4114020 | 11/05/14 | 0.25ML | QCS ICV A | CPI | 13I145-32869 | 03/18/15 |
| 40 mL | HNO3 | JT BAKER | 0000067379 | 11/05/14 | 0.25ML | QCS ICV B | CPI | 13I145-32870 | 03/18/15 |
| Prepared in 2000 ml DI Water | | | | | Prepared in 50ml 2%HNO3/2%HCl | | | | |
| STD 1 / LDL 200.7 | | | | | 200.7 ICSA | | | | |
| AMOUNT | STD | MANUFACTURER | LOT | EXP DATE | 0.5mL | Al | CPI | 14D237-33868 | 01/15/16 |
| 0.250 mL | 200.7 LDL | O2SI | 1052542-33103 | 11/01/14 | 0.5mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| Prepared in 50 ml 2%HNO3/2%HCl | | | | | 0.5mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| STD 3 / HDL 200.7 | | | | | 0.5mL | Fe | O2SI | 1082942-33880 | 01/12/16 |
| 0.5 mL | CCV-A | Environmental Express | 1331823-33166 | 11/18/14 | Prepared in 50 ml 2%HNO3/2%HCl | | | | |
| 0.5 mL | CCV-B | Environmental Express | 1331824-33167 | 11/18/14 | 200.7 ICSAB | | | | |
| 0.5 mL | CCV-C | Environmental Express | 1331825-33168 | 11/18/14 | 0.5mL | Al | CPI | 14D237-33868 | 01/15/16 |
| Prepared in 100 ml 2%HNO3/2%HCl | | | | | 0.5mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| STD 2 / CCV1 200.7 | | | | | 0.5mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| AMOUNT | STD | PREP DATE | EXP DATE | | 0.5mL | Fe | O2SI | 1082942-33880 | 01/12/16 |
| 25mL | STD 3 | TODAY | 1 WEEK | | 0.25mL | INT SPECIAL MIX | O2SI | 1054694-33223 | 1/1/15 |
| 25mL | 2%HNO3/2%HCl | TODAY | 1 WEEK | | Prepared in 50 ml 2%HNO3/2%HCl | | | | |
| CCV2 200.7 | | | | | | | | | |
| 15mL | STD 3 | TODAY | 1 WEEK | | | | | | |
| 25mL | 2%HNO3/2%HCl | TODAY | 1 WEEK | | | | | | |

SJH 11/05/14

# Metals Digestion Worksheet

**Method Name** 3015 Digestion **Prep Method** M3015 **Set** 141105A **Units** mL

| Spikes | |
|---|---|
| Spiked ID 1 | LCSW LOT#1066596-34172 |
| Spiked ID 2 | LCSW LOT#1066556-34173 |
| Spiked ID 3 | |
| Spiked ID 4 | |
| **Spiked By** | NM Date: 11/05/14 11:00:00 AM |
| **Witnessed By** | SJH Date: 11/05/14 11:00:00 AM |

| | |
|---|---|
| Starting Temp: | 19 c |
| Ending Temp: | 170 c |
| Temperature Type: | Microwave |
| Sufficient Vol for Matrix QC: | Yes |
| **End Date/Time** | 11/05/14 12:30 |

| | Sample | Sample Container | Spike Amount | Spike ID | Digested Amount | Final Volume | Start Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 141105A Blk | | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 2 | 141105A LCS | | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 3 | AZ05388 | AZ05388W12 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 4 | AZ05389 | AZ05389W12 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 5 | AZ05513 | AZ05513W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 6 | AZ05514 | AZ05514W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 7 | AZ05515 | AZ05515W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 8 | AZ05516 | AZ05516W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 9 | AZ05516 DUP | AZ05516W10 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 10 | AZ05516 MS | AZ05516W10 | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave |
| 11 | AZ05593 | AZ05593W35 | | | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 12 | AZ05593 MS | AZ05593W35 | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |
| 13 | AZ05593 MSD | AZ05593W35 | 90uL | 1+2 | 45mL | 50mL | 11/05/14 11:00 | equip: MultiWave Field Filtered |

| Solvent and Lot# |
|---|
| HNO3 J.T.B #74185 1839 |
| |
| |
| |
| |

| Sample COC Transfer | |
|---|---|
| **Sample prep employee Initials** | nm |
| **Analyst's initials** | SJH |
| **Date** | 11/05/14 |
| **Time** | 15:01 |
| **Moved to** | metals |

| Technician's Initials | |
|---|---|
| **Scanned By** | nm |
| **Sample Preparation** | nm |
| **Digestion** | nm |
| **Bring up to volume** | nm |
| **Modified** | 11/05/14 10:41:45 AM |

**Reviewed By:** SJH **Date:** 11/05/14

# 6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 1 | 05 Nov 2014 | 10:57 | Calibration Blank | | 141105A | 1. |
| 2 | 05 Nov 2014 | 11:03 | Standard 1 | | 141105A | 1. |
| 3 | 05 Nov 2014 | 11:09 | Standard 2 | | 141105A | 1. |
| 4 | 05 Nov 2014 | 11:14 | Standard 3 | | 141105A | 1. |
| 5 | 05 Nov 2014 | 11:20 | Standard 4 | | 141105A | 1. |
| 6 | 05 Nov 2014 | 11:27 | ICV | | 141105A | 1. |
| 8 | 05 Nov 2014 | 11:44 | ICB | | 141105A | 1. |
| 12 | 05 Nov 2014 | 12:08 | CCV | | 141105A | 1. |
| 13 | 05 Nov 2014 | 12:20 | CCB | | 141105A | 1. |
| 14 | 05 Nov 2014 | 12:26 | ICSA | | 141105A | 1. |
| 15 | 05 Nov 2014 | 13:08 | ICSAB | | 141105A | 1. |
| 82 | 05 Nov 2014 | 21:06 | CCV | | 141105A | 1. |
| 83 | 05 Nov 2014 | 21:17 | CCB | | 141105A | 1. |
| 84 | 05 Nov 2014 | 21:23 | 141105A BLK | | 141105A | 1. |
| 85 | 05 Nov 2014 | 21:29 | 141105A LCS | | 141105A | 1. |
| 88 | 05 Nov 2014 | 21:53 | AZ05593W35 1/5 | | 141105A | 5. |
| 89 | 05 Nov 2014 | 21:59 | AZ05593W35 MS 1/5 | | 141105A | 5. |
| 90 | 05 Nov 2014 | 22:05 | AZ05593W35 MSD 1/5 | | 141105A | 5. |
| 91 | 05 Nov 2014 | 22:11 | AZ05593W35-A 1/5 | | 141105A | 5. |
| 92 | 05 Nov 2014 | 22:17 | AZ05593W35 1/25 | | 141105A | 25. |
| 93 | 05 Nov 2014 | 22:23 | CCV | | 141105A | 1. |
| 94 | 05 Nov 2014 | 22:35 | CCB | | 141105A | 1. |

# INORGANIC ANALYSIS

APPL, INC.

# INORGANIC ANALYSIS
## QC Summary

APPL, INC.

# WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| SM 2320B | TOTAL ALKALINITY | 1.70 U | 2.0 | 1.70 | 0.85 | mg/L | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |
| EPA 353.2 | NITRATE-NITRITE-N | 0.100 U | 0.10 | 0.100 | 0.028 | mg/L | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| EPA 9056 | SULFATE | 0.198 U | 1.00 | 0.198 | 0.090 | mg/L | 10/28/14 | 10/28/14 | #9056D-141028A-AZ05593 |
| EPA 9056 | CHLORIDE | 0.200 U | 1.00 | 0.200 | 0.080 | mg/L | 11/03/14 | 11/03/14 | #9056D-141103A-AZ05593 |

*Wetlab SC-Blank-REG MDLs*
*Printed: 11/07/14 9:12:31 AM*

# Laboratory Control Spike Recovery

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level mg/L | SPK Result mg/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 9056 | CHLORIDE | 20.0 | 19.2 | 96.0 | 80-120 | 11/03/14 | 11/03/14 | #9056D-141103A-AZ05593 |
| EPA 9056 | SULFATE | 20.0 | 19.2 | 96.0 | 80-120 | 10/28/14 | 10/28/14 | #9056D-141028A-AZ05593 |

Comments: _____

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 4.83 | 4.76 | 96.6 | 95.2 | 1.5 | 20 | 90-110 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| SM 2320B | TOTAL ALKALINITY AS CA | 250 | 253 | 254 | 101 | 102 | 0.39 | 20 | 90-110 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |

Comments: _____

# Matrix Spike Recoveries

## WETLAB

APPL ID: **141105W-05593 MS - 191558**

Sample ID: AZ05593

Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | Matrix Res mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recovery | DUP % Recovery | RPD | RPD Max | Recovery Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 0.53 | 5.65 | 5.57 | 102 | 101 | 1.4 | 20 | 90-110 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | 191558 | AZ05593 |
| EPA 9056 | CHLORIDE | 200 | 319 | 544 | 538 | 113 | 110 | 1.1 | 10 | 80-120 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | 191547 | AZ05593 |
| EPA 9056 | SULFATE | 40 | 66.6 | 109 | 108 | 106 | 104 | 0.92 | 10 | 80-120 | 10/28/14 | 10/28/14 | 10/28/14 | 10/28/14 | 191430 | AZ05593 |
| SM 2320B | TOTAL ALKALINITY AS | 250 | 118 | 378 | 378 | 104 | 104 | 0.0 | 20 | 90-110 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | 191492 | AZ05593 |

Comments: _____

# INORGANIC ANALYSIS
## Sample Data

APPL, INC.

# Wet Lab Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright

Project: 749435 Red Hill TO 0068

***Sample ID: RHMW06-GW-01***

Sample Collection Date: 10/21/14

**APPL ID: AZ05593**

ARF: 74701

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 0.53 | 0.10 | 0.100 | 0.028 | mg/L | 1 | 11/05/14 | 11/05/14 |
| EPA 9056 | CHLORIDE | 319 | 10.00 | 2.000 | 0.800 | mg/L | 10 | 11/03/14 | 11/03/14 |
| EPA 9056 | SULFATE | 66.6 | 2.00 | 0.396 | 0.180 | mg/L | 2 | 10/28/14 | 10/28/14 |
| SM 2320B | TOTAL ALKALINITY AS CACO3 | 118 | 2.0 | 1.70 | 0.85 | mg/L | 1 | 11/03/14 | 11/03/14 |

*Printed: 11/07/14 9:12:28 AM*

*APPL-F1-SC-NoMC-REG MDLs*

# Sample Analysis Report

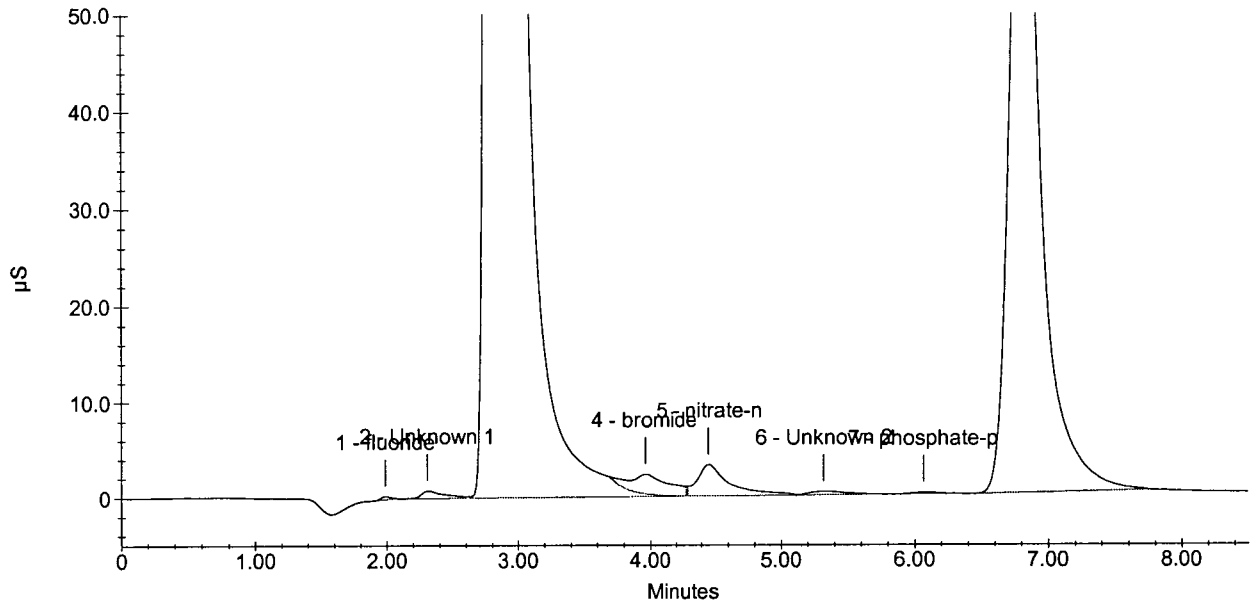
Sample Name : AZ05593W32 DF2
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_008.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 11:30:11
System Operator : mm
Injection Number : 8
Multiplier : 2.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.99 | fluoride | 0.1771 | 16863 | 3356 |
| 2 | 2.31 | Unknown 1 | 0.0000 | 96709 | 7729 |
| 3 | 2.87 | chloride | 365.3084 | 105413058 | 12467679 |
| 4 | 3.96 | bromide | 3.7349 | 375590 | 20652 |
| 5 | 4.45 | nitrate-n | 1.2246 | 548869 | 32627 |
| 6 | 5.32 | Unknown 2 | 0.0000 | 65888 | 3476 |
| 7 | 6.07 | phosphate-p | 0.2493 | 17721 | 1464 |
| 8 | 6.81 | sulfate | 66.6496 | 12558460 | 841336 |

AZ05593W32 DF2



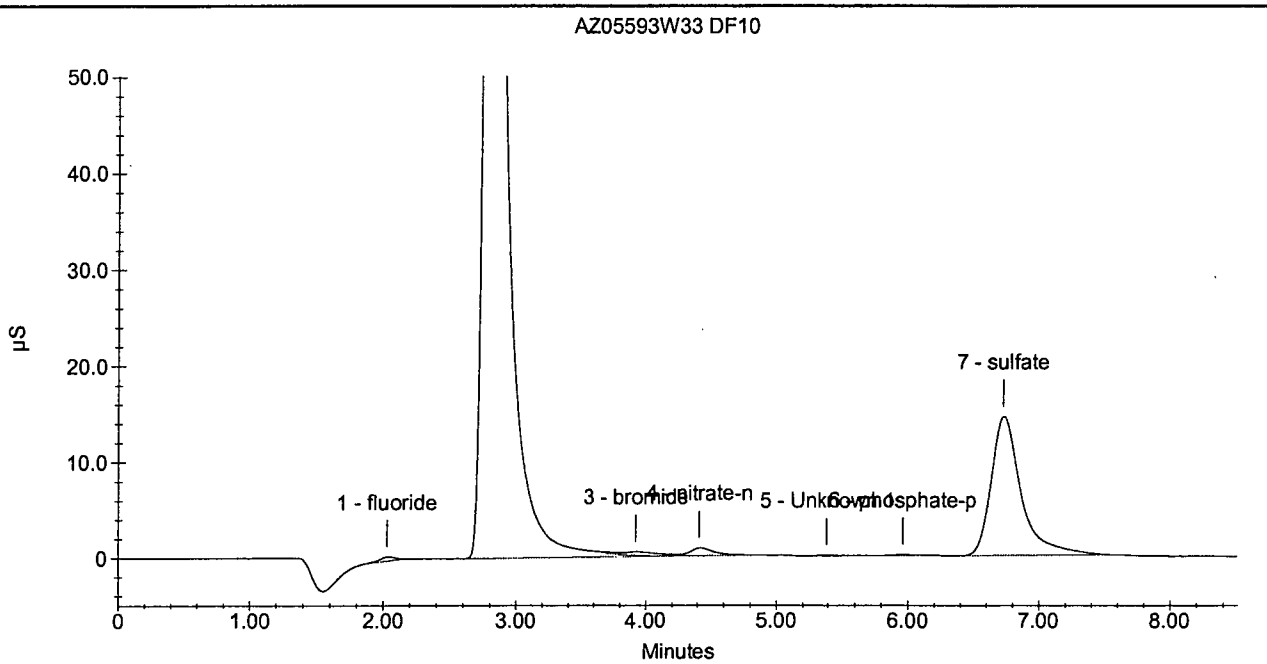
# Sample Analysis Report

Sample Name : AZ05593W33 DF10
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_023.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 12:24:08
System Operator : mm
Injection Number : 23
Multiplier : 10.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 2.03 | fluoride | 1.1181 | 33657 | 4356 |
| 2 | 2.80 | chloride | 318.6078 | 17851425 | 2159549 |
| 3 | 3.92 | bromide | 5.2782 | 68457 | 3999 |
| 4 | 4.41 | nitrate-n | 2.7158 | 101543 | 8228 |
| 5 | 5.39 | Unknown 1 | 0.0000 | 9501 | 685 |
| 6 | 5.96 | phosphate-p | 1.0441 | 9145 | 783 |
| 7 | 6.72 | sulfate | 68.2988 | 2297027 | 144170 |



# INORGANIC ANALYSIS
## Calibration Data

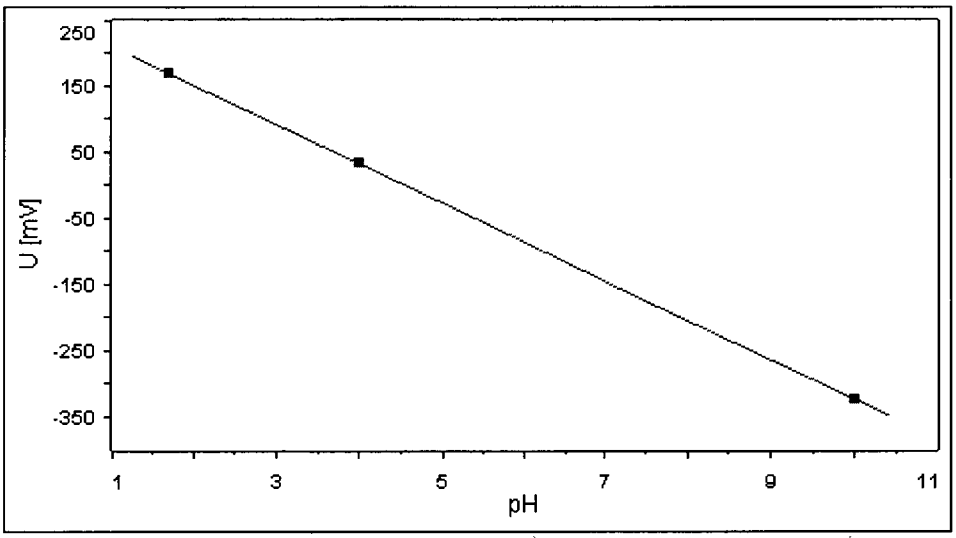
APPL, INC.

11/03/14 Tiamo Calibration Curve

Calibration curve

Calibration loop pH

CAL LOOP pH




| | pH | U [mV] | T [°C] | t [s] |
|---|---|---|---|---|
| Buffer 1: | 1.680 | 170.4 | 19.1 | 30 |
| Buffer 2: | 4.000 | 32.9 | 19.3 | 60 |
| Buffer 3: | 10.000 | -323.8 | 19.1 | 20 |

| | | |
|---|---|---|
| **Slope:** | 102.4 | % |
| **pH** | 4.550 | |
| **Variance:** | 0.1 | |

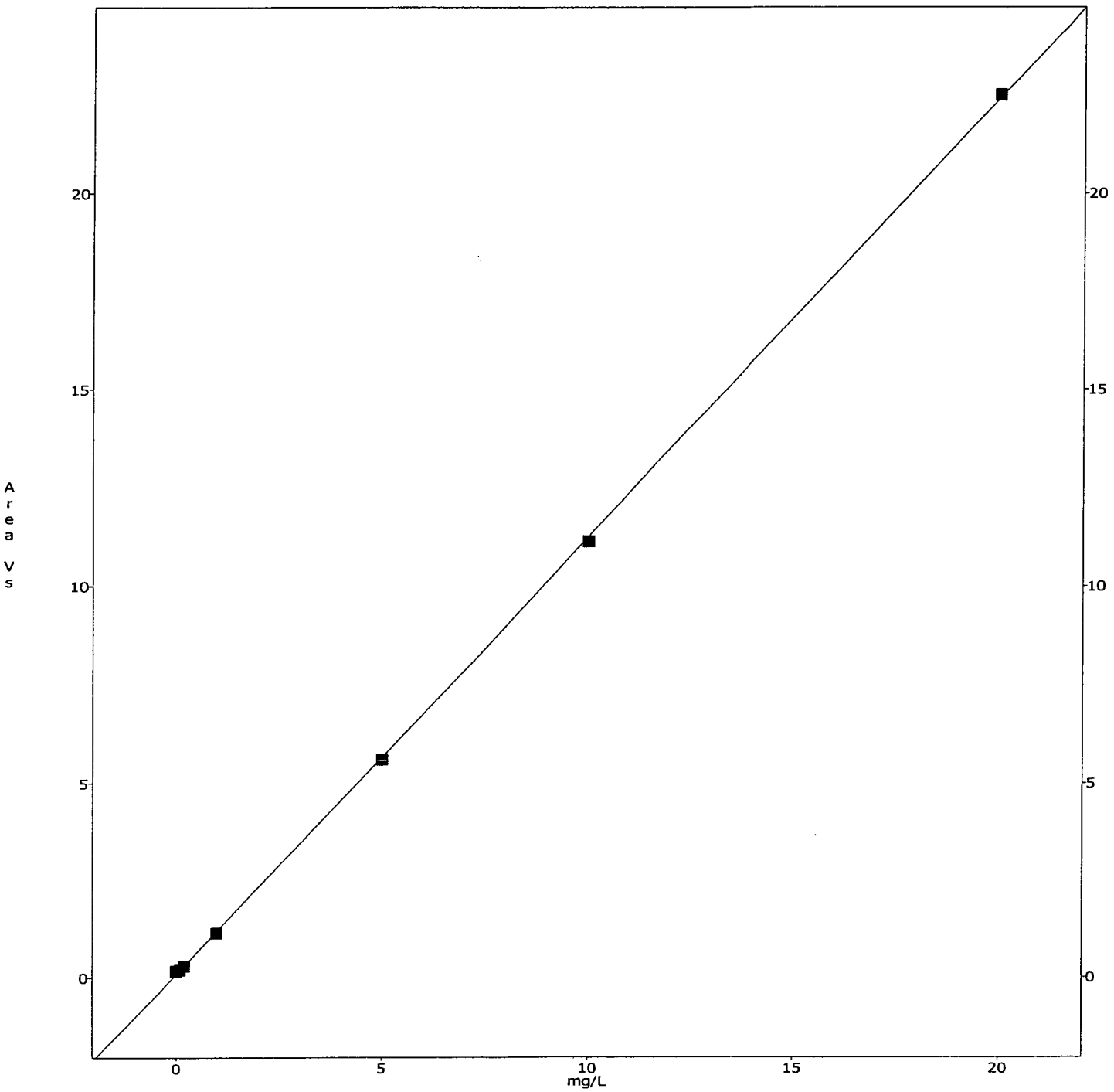
Close

# TOTOXN

| Lvl | Area | mg/L | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Replic STD | Replic % RSD | Residual 1st Poly |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22500902 | 20.0 | 22500902 | | | | | 0.0 | 0.0 | -0.3 |
| 2 | 11133735 | 10.0 | 11133735 | | | | | 0.0 | 0.0 | 1.1 |
| 3 | 5613850 | 5.0 | 5613850 | | | | | 0.0 | 0.0 | 0.9 |
| 4 | 1163898 | 1.0 | 1163898 | | | | | 0.0 | 0.0 | 2.9 |
| 5 | 313312 | 0.2 | 313312 | | | | | 0.0 | 0.0 | -4.9 |
| 6 | 207821 | 0.1 | 207821 | | | | | 0.0 | 0.0 | -15.4 |
| 7 | 182182 | 0.0 | 182182 | | | | | 0.0 | 0.0 | |

1st Order Poly
Conc = 8.949e-007 Area - 7.054e-002
r = 1.0000

Scaling: None - Weighting: None




Printed: Wednesday, November 05, 2014 - 03:07 PM

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74701 SDG: 74701
Initial Calibration Source: CPI
Continuing Calibration Source: O2SI
Analysis Date: 11/05/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 14:41 | %R(1) | True ICV | Found 14:44 | %R(1) | True CCV1 | Found 15:00 | %R(1) | |
| TOXN | 5 | 4.92496 | 98.5 | 5 | 4.89567 | 97.9 | 5 | 4.91904 | 98.4 | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74701 SDG: 74701

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

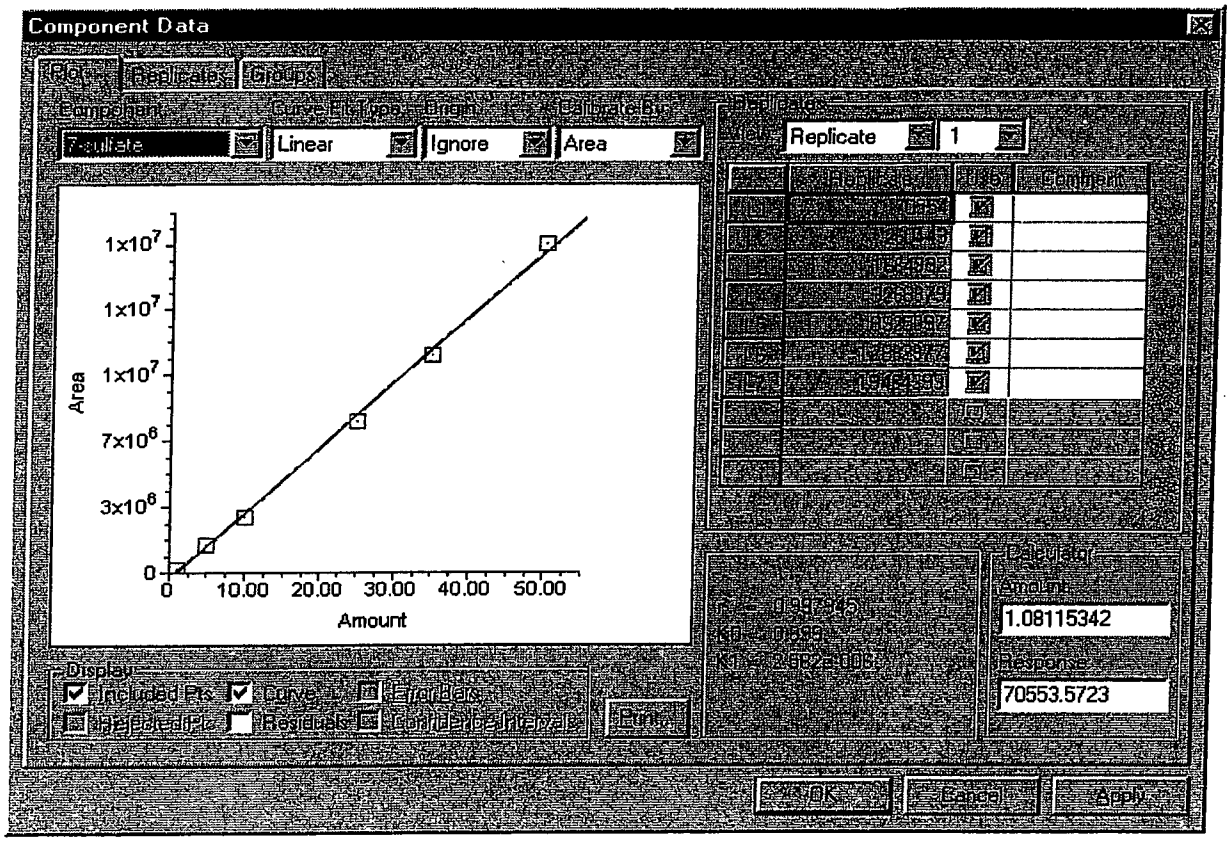
| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CCB 11/05/14 14:42 | C | ICB 11/05/14 14:45 | C | CCB 11/05/14 15:02 | C | | C | | C | |
| TOXN | .100 | U | .100 | U | .100 | U | | | | | |

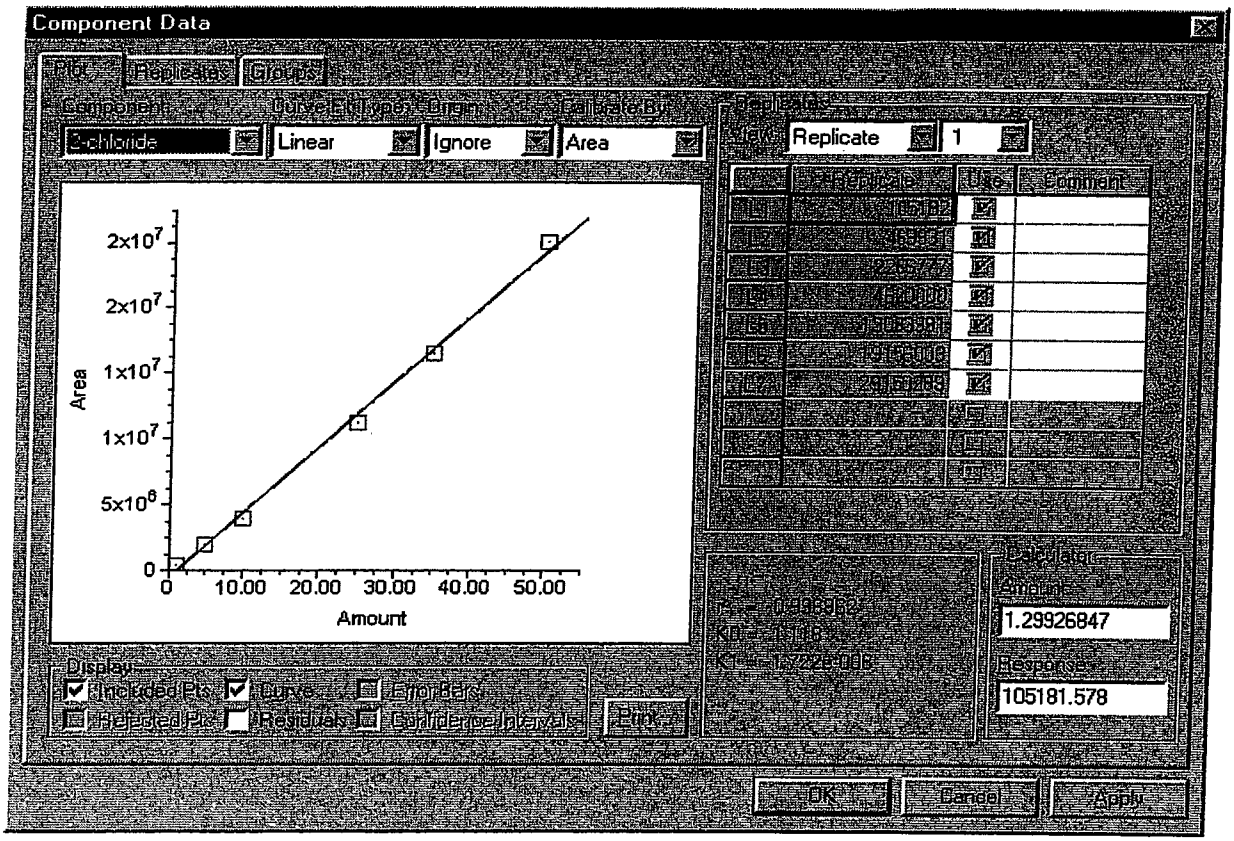
OPERATOR: Aileen
ACQ. TIME: Nov 5, 2014 14:29:17
DATA FILENAME: I:\LACHAT\OMNION\141105NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\141105NA.TRA

TRAY DESCRIPTION:
Created: Nov 5, 2014 13:05:03
Modified: Nov 5, 2014 14:29:48
NO3/TOTOXN 141105NA
DATA DESCRIPTION:
Created: Nov 5, 2014 14:29:17
Modified: Nov 5, 2014 14:29:17

Multi-Channel Table
Type: DQM
Channel Range: 1 to 8 -- Cup Range: 1 to 50

| Cup | Sample ID | Sample Type | Sampling Time | # of Reps | TOTOXN (mg/L) |
|---|---|---|---|---|---|
| 6 | CCB | Blank | 14:42:55 | 1 | -0.0080 |
| 6 | ICB | Blank | 14:45:56 | 1 | -0.0061 |
| 6 | CCB | Blank | 15:02:28 | 1 | -0.0082 |
| 7 | ICV | RelChkStd | 14:44:26 | 1 | 4.8957 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -2.0864 |
| 15 | CCV | RelChkStd | 14:41:24 | 1 | 4.9250 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -1.5006 |
| 15 | CCV | RelChkStd | 15:00:57 | 1 | 4.9190 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -1.6191 |


Component Data
Replicates
Groups
Linear
Ignore
Area
Replicate
1
Area
Amount
1x10^7
1x10^7
1x10^7
7x10^6
3x10^6
0
0
10.00
20.00
30.00
40.00
50.00
Display
Included Pts
Curve
Error Bars
Residuals
Confidence Intervals
Run
Calculated
Amount
1.08115342
Response
70553.5723
OK
Cancel
Apply


Component Data
Plot
Replicates
Groups
Component
Curve Fit Type
Calibrate By
2-chloride
Linear
Ignore
Area
Replicate
1
Use
Comment
2x10^7
2x10^7
1x10^7
1x10^7
5x10^6
0
Area
0
10.00
20.00
30.00
40.00
50.00
Amount
Display
Included Pts
Curve
Error Bars
Excluded Pts
Residuals
Confidence Intervals
Calculator
Amount
1.29926847
Response
105181.578
OK
Cancel
Apply

INORGANIC ANALYSES
AUTO CALIBRATION

Analytical Method: 300/9056A

Lab Name: APPL, Inc.

Instrument ID: Dionex

Autocal ID: 140916a

Concentration Units (mg/L or mg/kg): mg/L

| Analyte | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| | Autocal 13:01 | Autocal 13:12 | Autocal 13:23 | Autocal 13:35 | Autocal 13:46 | Autocal 13:57 | Autocal 14:08 |
| Bromide | 16482 | 110811 | 530269 | 1040423 | 2811782 | 3853149 | 5758749 |
| Chloride | 105181 | 469930 | 2266776 | 4619999 | 13083991 | 19156002 | 29150289 |
| Fluoride | ND | 65241 | 295885 | 665047 | 1822387 | 2347304 | 3619418 |
| Nitrate-N | 42537 | 207636 | 1096945 | 2181530 | 5982651 | 8679959 | 13214287 |
| Nitrite-N | 9360 | 82285 | 427556 | 866240 | 2398640 | 3309962 | 4979067 |
| Phosphate-P | 37335 | 77961 | 423664 | 767089 | 2009102 | 2861951 | 4282289 |
| Sulfate | 70553 | 260443 | 1664932 | 3268878 | 8925096 | 12862977 | 19464398 |

Comments:

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Calibration
ARF No: SDG:
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 09/16/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True ICV | Found 14:20 | %R(1) | True | Found | %R(1) | True | Found | %R(1) | |
| bromide | 12.5 | 12.1534 | 97.2 | | | | | | | |
| chloride | 20 | 18.9785 | 94.9 | | | | | | | |
| fluoride | 2.5 | 2.39410 | 95.8 | | | | | | | |
| Nitrate(NO3)-N | 5 | 4.85672 | 97.1 | | | | | | | |
| Nitrite(NO2)-N | 3.04 | 2.92650 | 96.3 | | | | | | | |
| phosphate-p | 5 | 4.91730 | 98.3 | | | | | | | |
| sulfate | 20 | 19.3370 | 96.7 | | | | | | | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Calibration

ARF No.: SDG:

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ICB 09/16/14 14:31 | C | | C | | C | | C | | C | |
| bromide | .500 | U | | | | | | | | | |
| chloride | 1.000 | U | | | | | | | | | |
| fluoride | 1.000 | U | | | | | | | | | |
| Nitrate(NO3)-N | .200 | U | | | | | | | | | |
| Nitrite(NO2)-N | .200 | U | | | | | | | | | |
| phosphate-p | 1.000 | U | | | | | | | | | |
| sulfate | 1.000 | U | | | | | | | | | |

# Calibration Update Report

**Sample Name : CAL STD #1 9/16/14**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_012.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:01:17

Calibration Date : 9/16/14 13:12:12
System Operator : mm
Injection Number : 12

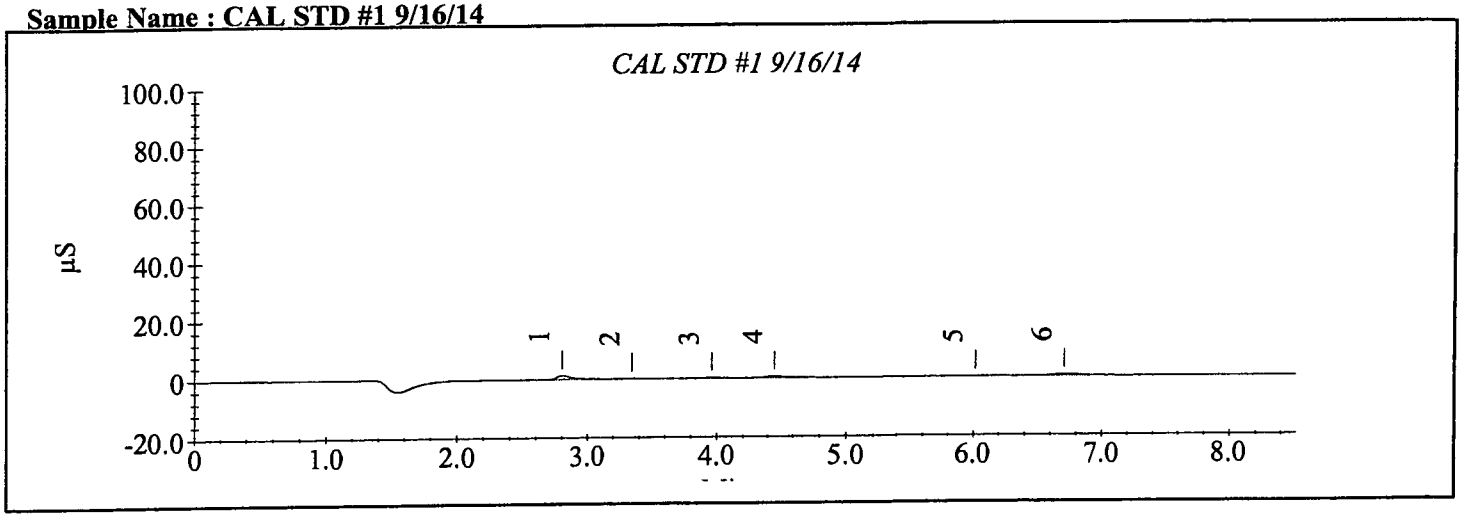
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 2.80 | chloride | 80668 | 105182 | 105182 |
| 2 | 3.35 | nitrite-n | 14520 | 9360 | 9360 |
| 3 | 3.96 | bromide | 17978 | 16482 | 16482 |
| 4 | 4.45 | nitrate-n | 38967 | 42537 | 42537 |
| 5 | 6.01 | phosphate-p | 17719 | 37336 | 37336 |
| 6 | 6.71 | sulfate | 39183 | 70554 | 70554 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 2.80 | chloride | 0.40 | 105182 | 12275 | - |
| 2 | 3.35 | nitrite-n | 0.04 | 9360 | 1262 | - |
| 3 | 3.96 | bromide | 0.20 | 16482 | 1928 | - |
| 4 | 4.45 | nitrate-n | 0.08 | 42537 | 4453 | - |
| 5 | 6.01 | phosphate-p | 0.08 | 37336 | 1580 | - |
| 6 | 6.71 | sulfate | 0.40 | 70554 | 4720 | - |

**Sample Name : CAL STD #1 9/16/14**



# Calibration Update Report

**Sample Name : CAL STD #2**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_013.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:12:31

Calibration Date : 9/16/14 13:23:26
System Operator : mm
Injection Number : 13

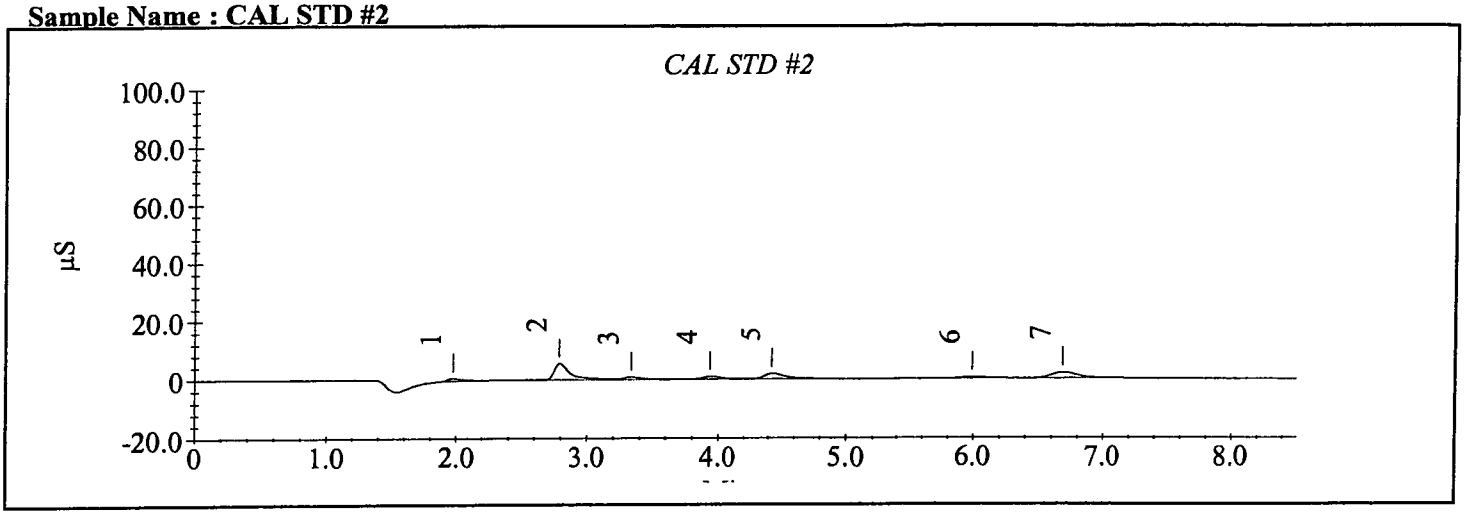
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 59909 | 65241 | 65241 |
| 2 | 2.79 | chloride | 419030 | 469931 | 469931 |
| 3 | 3.33 | nitrite-n | 59671 | 82285 | 82285 |
| 4 | 3.93 | bromide | 89803 | 110811 | 110811 |
| 5 | 4.43 | nitrate-n | 201320 | 207637 | 207637 |
| 6 | 5.99 | phosphate-p | 67899 | 77961 | 77961 |
| 7 | 6.68 | sulfate | 264624 | 260443 | 260443 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.10 | 65241 | 8911 | |
| 2 | 2.79 | chloride | 1.00 | 469931 | 54508 | |
| 3 | 3.33 | nitrite-n | 0.10 | 82285 | 7802 | |
| 4 | 3.93 | bromide | 0.50 | 110811 | 9252 | |
| 5 | 4.43 | nitrate-n | 0.20 | 207637 | 18419 | |
| 6 | 5.99 | phosphate-p | 0.20 | 77961 | 5299 | |
| 7 | 6.68 | sulfate | 1.00 | 260443 | 19470 | |

**Sample Name : CAL STD #2**



# Calibration Update Report

**Sample Name : CAL STD #3**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_014.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:23:49

Calibration Date : 9/16/14 13:34:44
System Operator : mm
Injection Number : 14

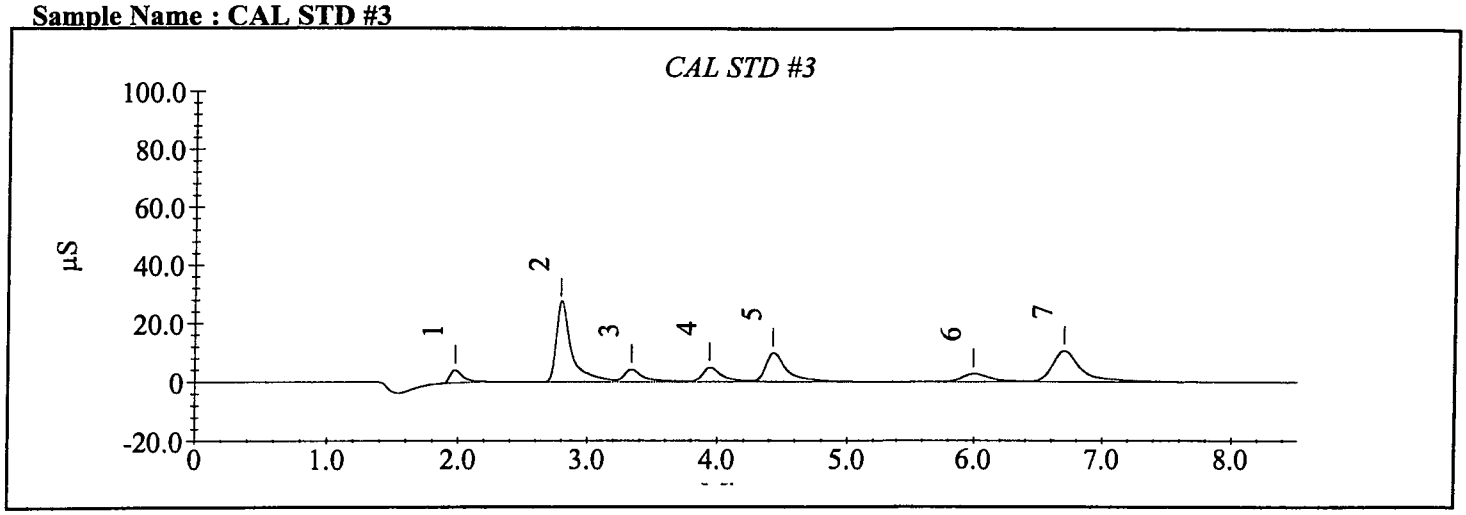
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 309108 | 295885 | 295885 |
| 2 | 2.79 | chloride | 2276954 | 2266777 | 2266777 |
| 3 | 3.33 | nitrite-n | 436460 | 427557 | 427557 |
| 4 | 3.93 | bromide | 523251 | 530269 | 530269 |
| 5 | 4.43 | nitrate-n | 1108037 | 1096946 | 1096946 |
| 6 | 5.99 | phosphate-p | 384060 | 423665 | 423665 |
| 7 | 6.69 | sulfate | 1603379 | 1664932 | 1664932 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.50 | 295885 | 42704 | |
| 2 | 2.79 | chloride | 5.00 | 2266777 | 269443 | |
| 3 | 3.33 | nitrite-n | 0.50 | 427557 | 41736 | |
| 4 | 3.93 | bromide | 2.50 | 530269 | 48100 | |
| 5 | 4.43 | nitrate-n | 1.00 | 1096946 | 96641 | |
| 6 | 5.99 | phosphate-p | 1.00 | 423665 | 27488 | |
| 7 | 6.69 | sulfate | 5.00 | 1664932 | 104763 | |

**Sample Name : CAL STD #3**



# Calibration Update Report

**Sample Name : CAL STD #4**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_015.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:35:06

Calibration Date : 9/16/14 13:46:01
System Operator : mm
Injection Number : 15

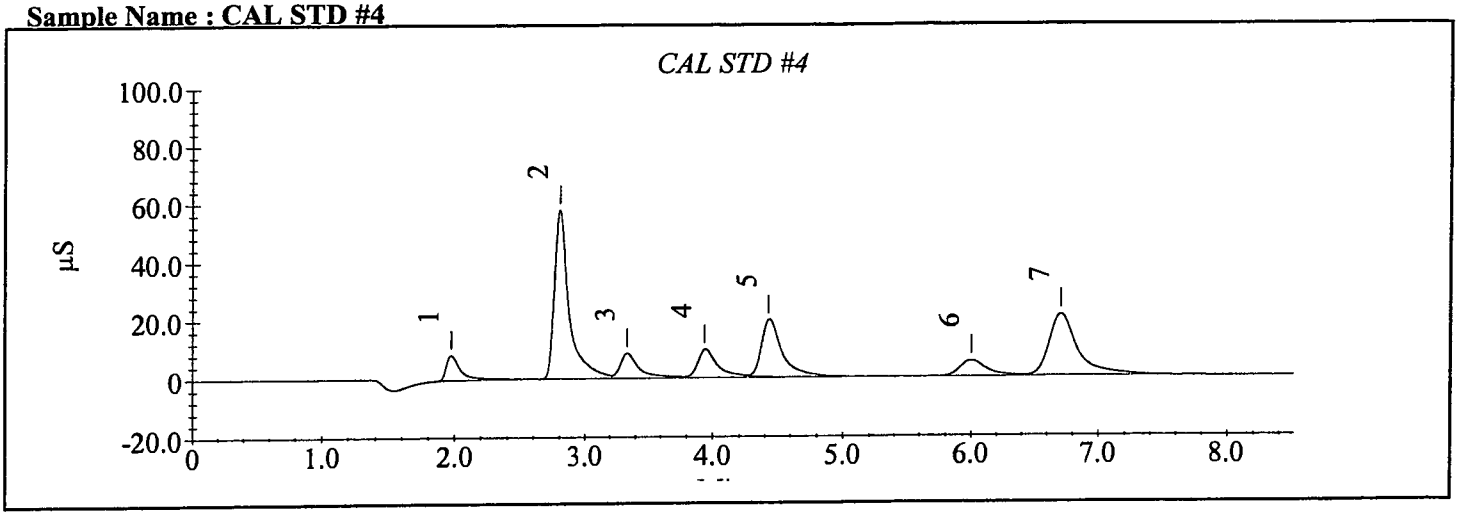
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 607569 | 665048 | 665048 |
| 2 | 2.80 | chloride | 4779793 | 4620000 | 4620000 |
| 3 | 3.33 | nitrite-n | 906480 | 866241 | 866241 |
| 4 | 3.93 | bromide | 1053126 | 1040424 | 1040424 |
| 5 | 4.43 | nitrate-n | 2237044 | 2181530 | 2181530 |
| 6 | 6.00 | phosphate-p | 769425 | 767090 | 767090 |
| 7 | 6.71 | sulfate | 3360946 | 3268879 | 3268879 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 1.00 | 665048 | 85001 | |
| 2 | 2.80 | chloride | 10.00 | 4620000 | 578025 | |
| 3 | 3.33 | nitrite-n | 1.00 | 866241 | 85227 | |
| 4 | 3.93 | bromide | 5.00 | 1040424 | 94837 | |
| 5 | 4.43 | nitrate-n | 2.00 | 2181530 | 194223 | |
| 6 | 6.00 | phosphate-p | 2.00 | 767090 | 53648 | |
| 7 | 6.71 | sulfate | 10.00 | 3268879 | 210711 | |

**Sample Name : CAL STD #4**



# Calibration Update Report

**Sample Name : CAL STD #5**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_016.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:46:24

Calibration Date : 9/16/14 13:57:19
System Operator : mm
Injection Number : 16

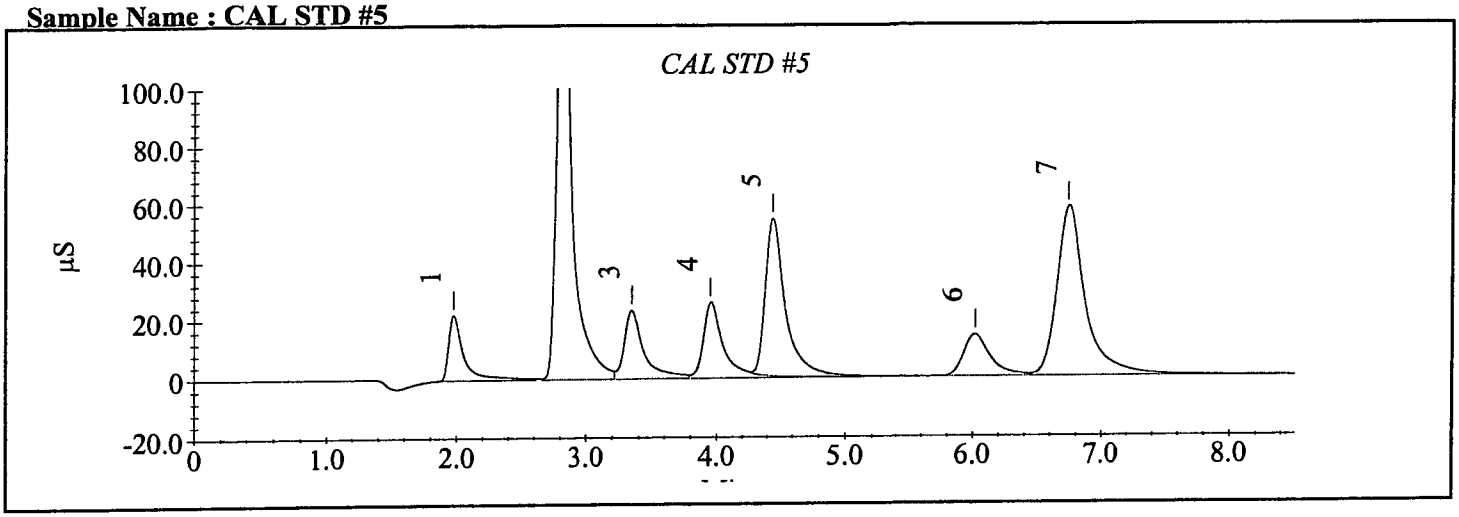
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 1882150 | 1822387 | 1822387 |
| 2 | 2.80 | chloride | 13726063 | 13083991 | 13083991 |
| 3 | 3.35 | nitrite-n | 2428096 | 2398640 | 2398640 |
| 4 | 3.95 | bromide | 2795303 | 2811783 | 2811783 |
| 5 | 4.44 | nitrate-n | 6075372 | 5982651 | 5982651 |
| 6 | 6.01 | phosphate-p | 2015049 | 2009102 | 2009102 |
| 7 | 6.73 | sulfate | 9158418 | 8925097 | 8925097 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.50 | 1822387 | 220513 | |
| 2 | 2.80 | chloride | 25.00 | 13083991 | 1634673 | |
| 3 | 3.35 | nitrite-n | 2.50 | 2398640 | 232992 | |
| 4 | 3.95 | bromide | 12.50 | 2811783 | 257207 | |
| 5 | 4.44 | nitrate-n | 5.00 | 5982651 | 539495 | |
| 6 | 6.01 | phosphate-p | 5.00 | 2009102 | 141469 | |
| 7 | 6.73 | sulfate | 25.00 | 8925097 | 579552 | |

**Sample Name : CAL STD #5**



# Calibration Update Report

**Sample Name : CAL STD #6**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_017.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:57:42

Calibration Date : 9/16/14 14:08:37
System Operator : mm
Injection Number : 17

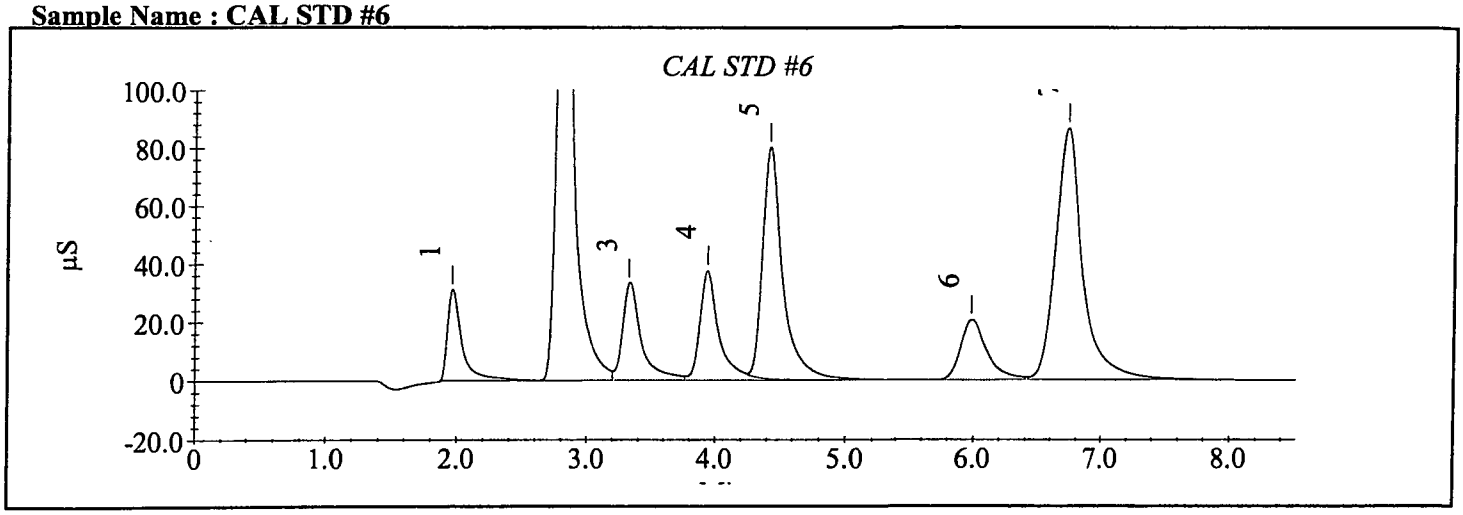
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2634975 | 2347305 | 2347305 |
| 2 | 2.80 | chloride | 20199844 | 19156003 | 19156003 |
| 3 | 3.32 | nitrite-n | 3487460 | 3309962 | 3309962 |
| 4 | 3.93 | bromide | 3964452 | 3853149 | 3853149 |
| 5 | 4.41 | nitrate-n | 8962096 | 8679959 | 8679959 |
| 6 | 5.97 | phosphate-p | 2892007 | 2861951 | 2861951 |
| 7 | 6.72 | sulfate | 13323218 | 12862977 | 12862977 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 3.50 | 2347305 | 307863 | |
| 2 | 2.80 | chloride | 35.00 | 19156003 | 2543383 | |
| 3 | 3.32 | nitrite-n | 3.50 | 3309962 | 329466 | |
| 4 | 3.93 | bromide | 17.50 | 3853149 | 373363 | |
| 5 | 4.41 | nitrate-n | 7.00 | 8679959 | 793777 | |
| 6 | 5.97 | phosphate-p | 7.00 | 2861951 | 202999 | |
| 7 | 6.72 | sulfate | 35.00 | 12862977 | 864005 | |

**Sample Name : CAL STD #6**



# Calibration Update Report

**Sample Name : CAL STD #7**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_018.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 14:08:59

Calibration Date : 9/16/14 14:19:53
System Operator : mm
Injection Number : 18

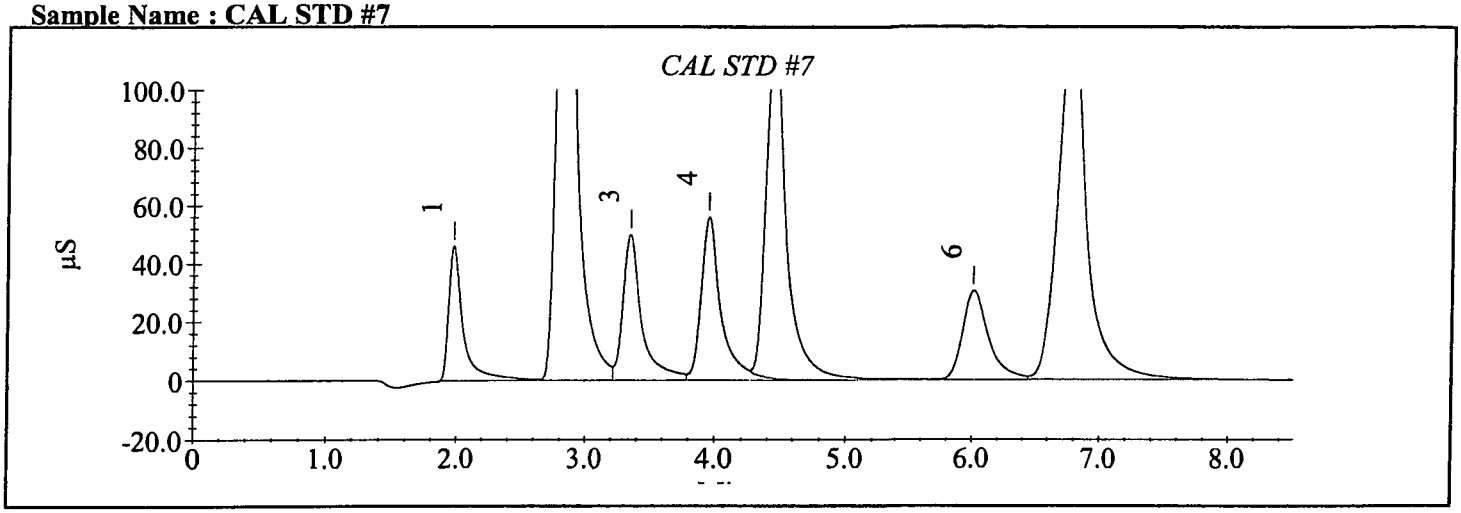
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 3720726 | 3619418 | 3619418 |
| 2 | 2.81 | chloride | 29858639 | 29150289 | 29150289 |
| 3 | 3.35 | nitrite-n | 4999120 | 4979068 | 4979068 |
| 4 | 3.95 | bromide | 5710221 | 5758749 | 5758749 |
| 5 | 4.43 | nitrate-n | 13261972 | 13214288 | 13214288 |
| 6 | 6.00 | phosphate-p | 4245709 | 4282289 | 4282289 |
| 7 | 6.76 | sulfate | 19824829 | 19464399 | 19464399 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 5.00 | 3619418 | 459676 | |
| 2 | 2.81 | chloride | 50.00 | 29150289 | 3850058 | |
| 3 | 3.35 | nitrite-n | 5.00 | 4979068 | 498763 | |
| 4 | 3.95 | bromide | 25.00 | 5758749 | 558971 | |
| 5 | 4.43 | nitrate-n | 10.00 | 13214288 | 1198703 | |
| 6 | 6.00 | phosphate-p | 10.00 | 4282289 | 303155 | |
| 7 | 6.76 | sulfate | 50.00 | 19464399 | 1318317 | |

**Sample Name : CAL STD #7**



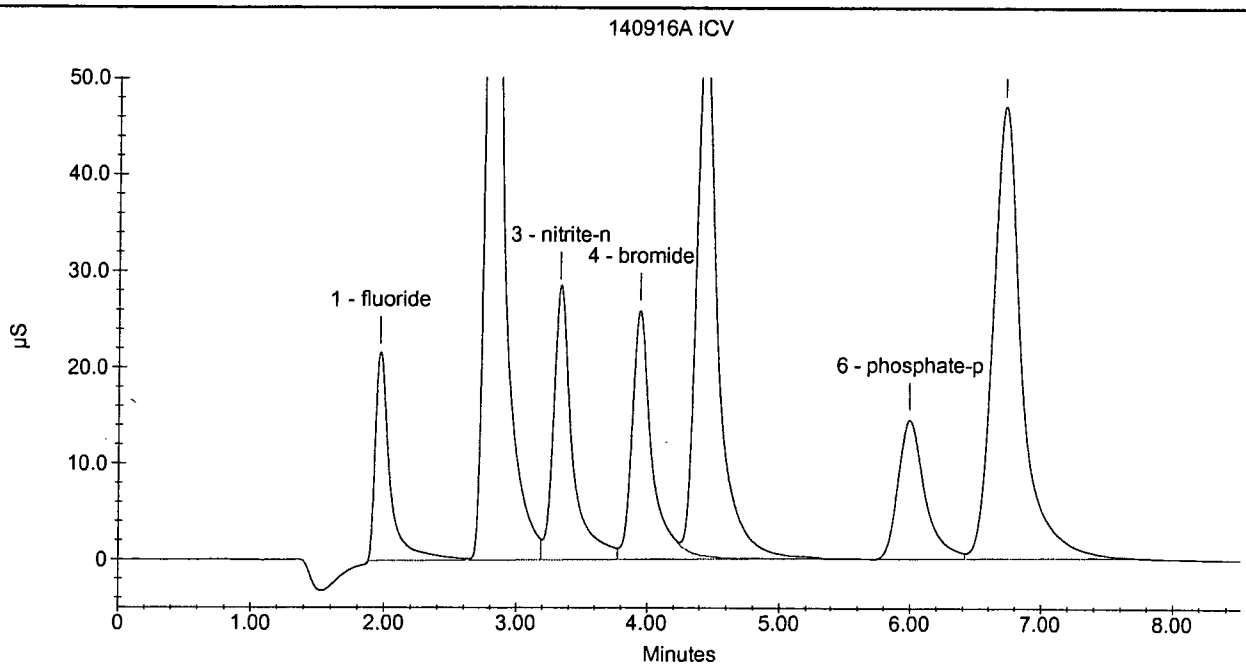
# Sample Analysis Report

Sample Name : 140916A ICV
Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_019.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 9/16/14 14:20:16
System Operator : mm
Injection Number : 19
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height | Limit Exceed |
|---|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2.3941 | 1681572 | 214873 | 2. |
| 2 | 2.79 | chloride | 18.9786 | 10371065 | 1320844 | 1 |
| 3 | 3.32 | nitrite-n | 2.9265 | 2837943 | 280321 | 2. |
| 4 | 3.93 | bromide | 12.1534 | 2733797 | 258190 | 1 |
| 5 | 4.41 | nitrate-n | 4.8567 | 6121479 | 548928 | 4. |
| 6 | 5.99 | phosphate-p | 4.9173 | 2047176 | 144494 | 4. |
| 7 | 6.71 | sulfate | 19.3371 | 7141046 | 468012 | 1 |



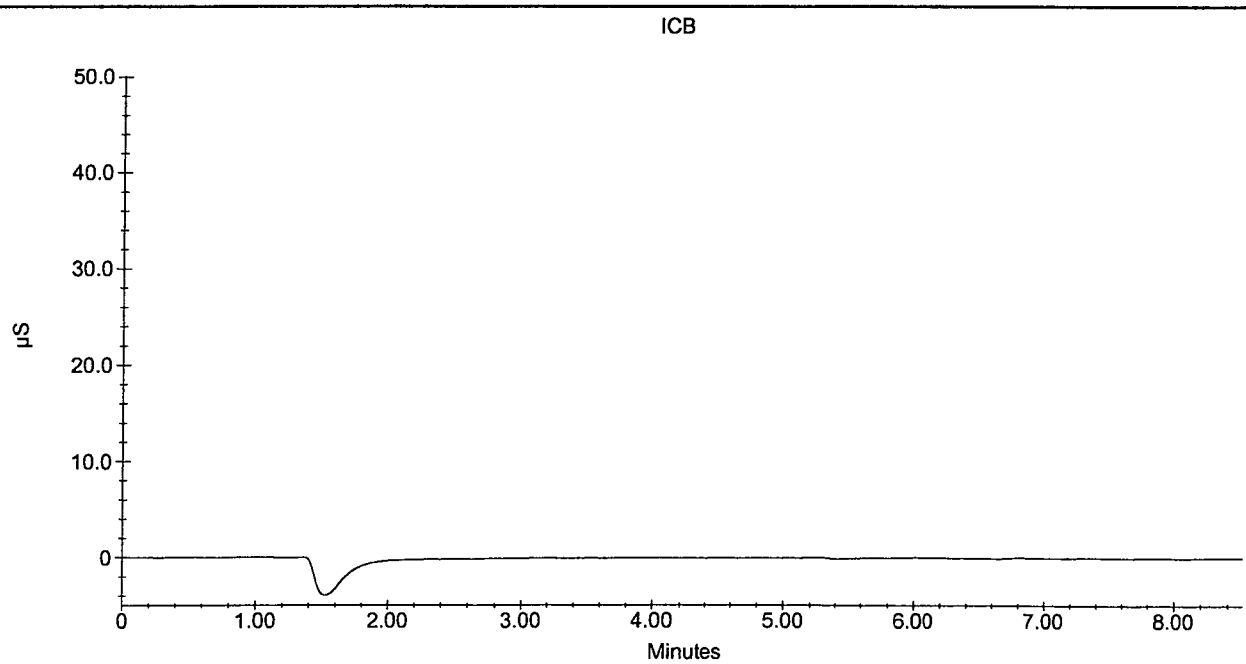
# Sample Analysis Report

Sample Name : ICB
Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916A_020.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 9/16/14 14:31:36
System Operator : mm
Injection Number : 20
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height | Limit Exceed |
|---|---|---|---|---|---|---|




*APPL, Inc.*



Current Date : 9/16/14
Current Time : 14:43:32

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74701 SDG: 74701
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 10/28/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 8:31 | %R(1) | True CCV1 | Found 13:00 | %R(1) | True CCV1 | Found 15:16 | %R(1) | |
| chloride | 25 | 24.0036 | 96.0 | 25 | 24.3981 | 97.6 | 25 | 24.4921 | 98.0 | |
| sulfate | 25 | 23.9146 | 95.7 | 25 | 24.2188 | 96.9 | 25 | 24.2098 | 96.8 | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74701 SDG: 74701

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CCB 10/28/14 08:42 | C | CCB 10/28/14 13:12 | C | CCB 10/28/14 15:27 | C | CCB 11/03/14 11:28 | C | CCB 11/03/14 13:09 | C | |
| chloride | 1.000 | U | 1.000 | U | 1.000 | U | 1.000 | U | 1.0000 | U | |
| sulfate | 1.000 | U | 1.000 | U | 1.000 | U | 1.000 | U | 1.0000 | U | |

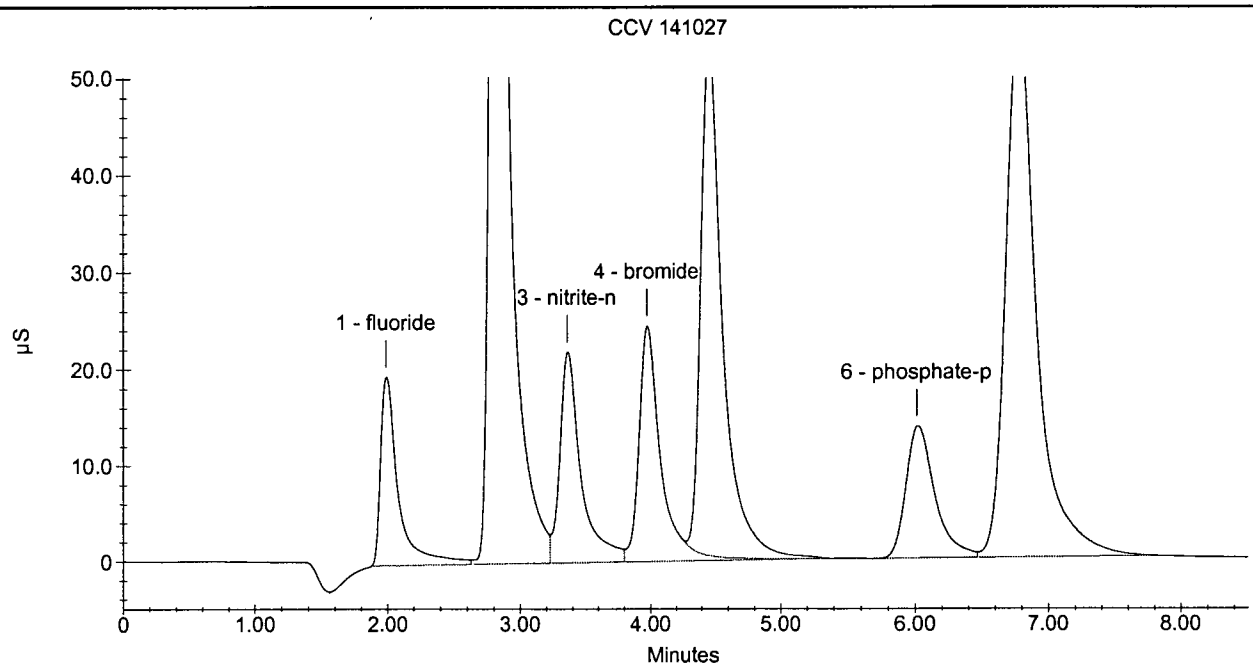
# Sample Analysis Report

Sample Name : CCV 141027
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_004.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 08:31:36
System Operator : mm
Injection Number : 4
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.99 | fluoride | 2.6397 | 1858917 | 195407 |
| 2 | 2.83 | chloride | 24.0036 | 13288988 | 1538580 |
| 3 | 3.36 | nitrite-n | 2.5633 | 2477148 | 218546 |
| 4 | 3.97 | bromide | 12.6555 | 2848909 | 244044 |
| 5 | 4.45 | nitrate-n | 4.9029 | 6182165 | 524666 |
| 6 | 6.01 | phosphate-p | 4.9166 | 2046869 | 136957 |
| 7 | 6.77 | sulfate | 23.9146 | 8913921 | 561264 |




*APPL, Inc.*



Current Date : 11/5/14
Current Time : 13:04:41

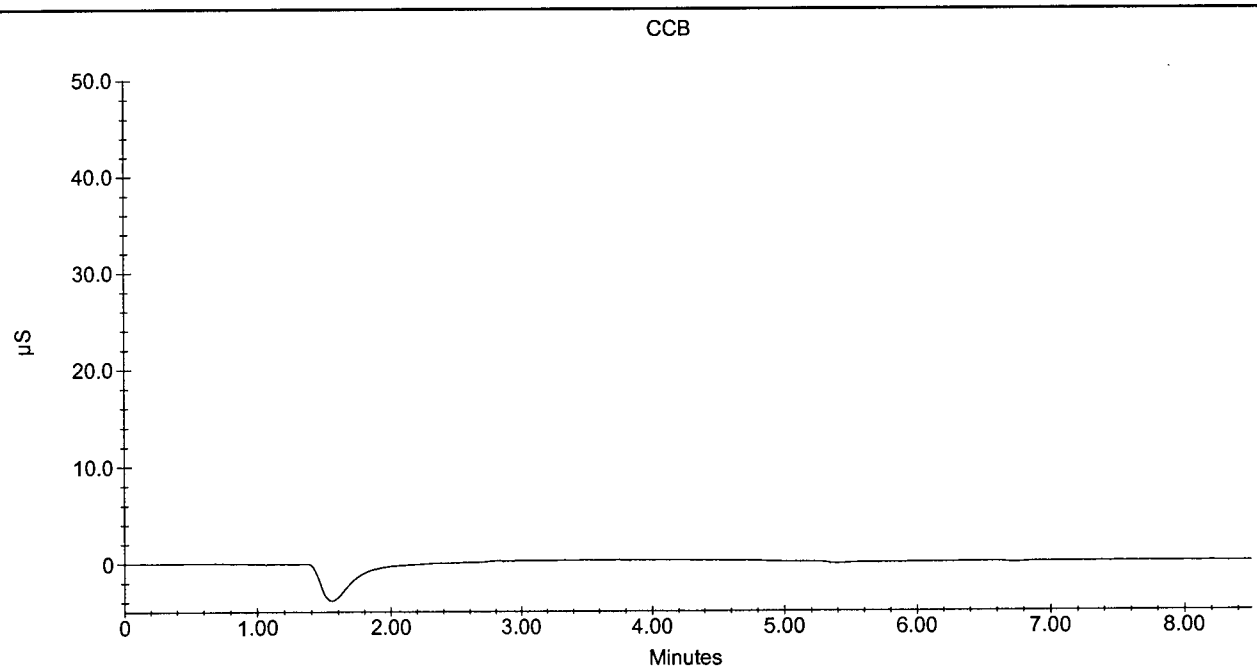
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_005.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 08:42:51
System Operator : mm
Injection Number : 5
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|



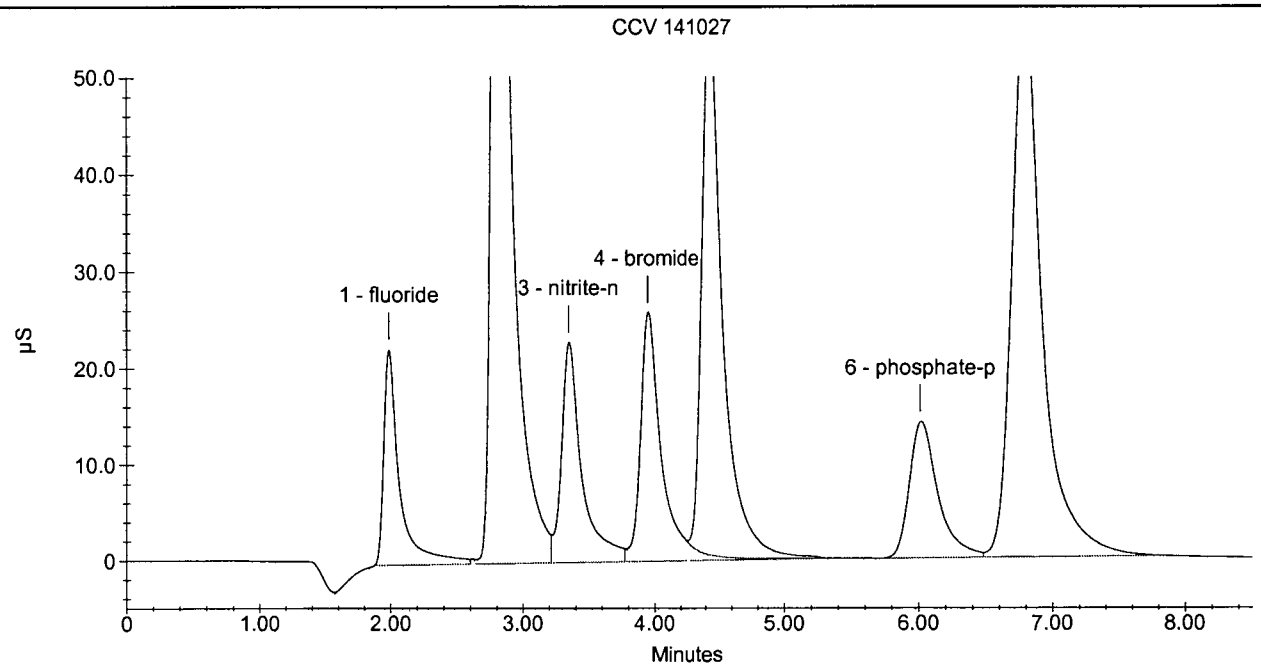
# Sample Analysis Report

Sample Name : CCV 141027
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_016.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 13:00:49
System Operator : mm
Injection Number : 16
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.99 | fluoride | 2.6609 | 1874193 | 223559 |
| 2 | 2.81 | chloride | 24.3982 | 13518086 | 1692234 |
| 3 | 3.35 | nitrite-n | 2.5231 | 2437219 | 228025 |
| 4 | 3.95 | bromide | 12.8906 | 2902818 | 257561 |
| 5 | 4.43 | nitrate-n | 4.9685 | 6268301 | 551233 |
| 6 | 6.01 | phosphate-p | 4.9987 | 2081628 | 141337 |
| 7 | 6.79 | sulfate | 24.2189 | 9031756 | 577533 |



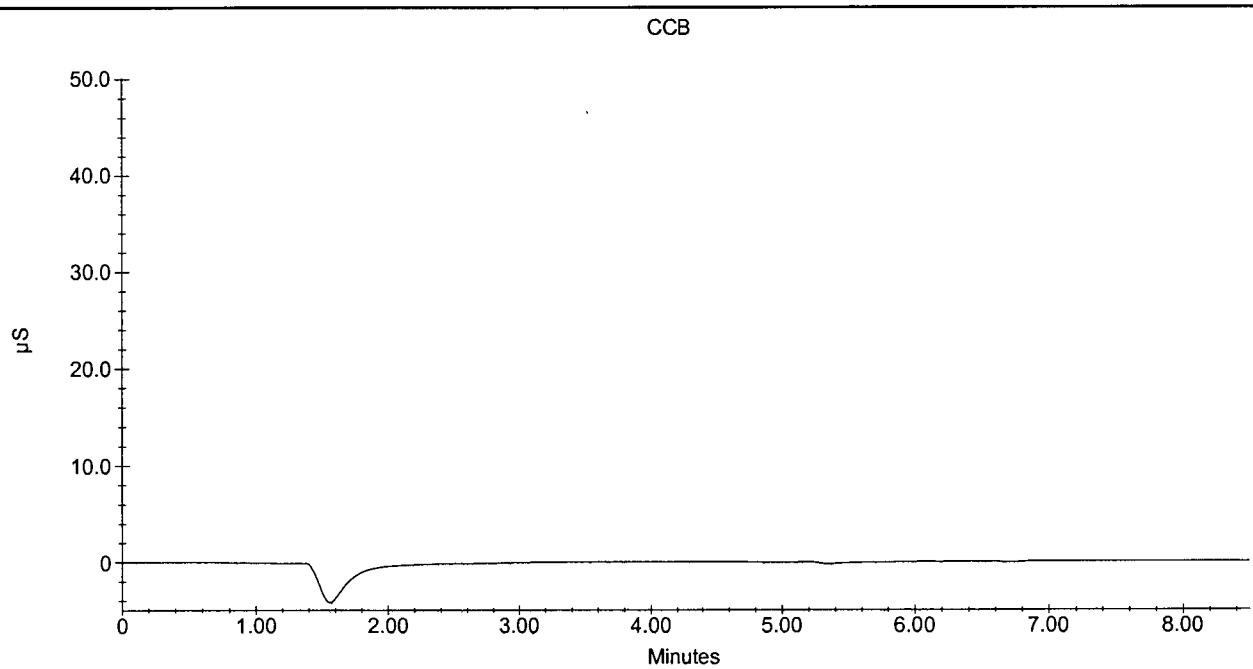
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_017.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 13:12:10
System Operator : mm
Injection Number : 17
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|



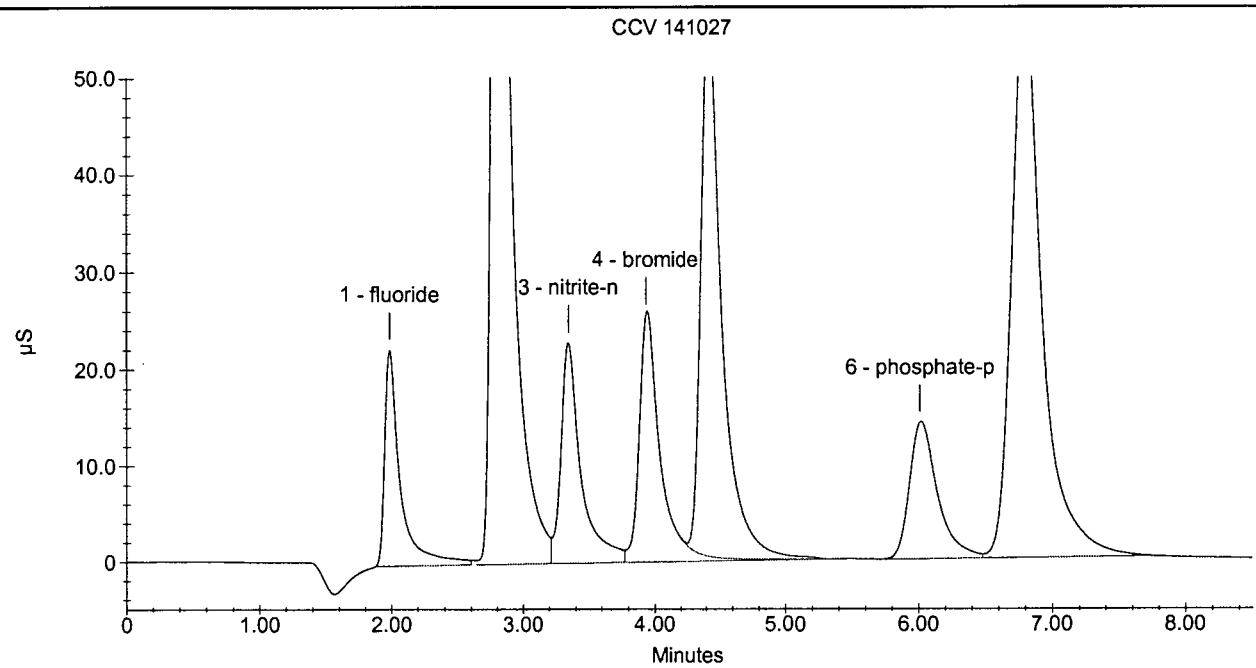
# Sample Analysis Report

Sample Name : CCV 141027
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_028.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 15:16:17
System Operator : mm
Injection Number : 28
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.99 | fluoride | 2.6635 | 1876098 | 224357 |
| 2 | 2.81 | chloride | 24.4922 | 13572675 | 1711571 |
| 3 | 3.35 | nitrite-n | 2.5101 | 2424369 | 228868 |
| 4 | 3.93 | bromide | 12.7821 | 2877932 | 256037 |
| 5 | 4.41 | nitrate-n | 4.9818 | 6285730 | 550210 |
| 6 | 6.01 | phosphate-p | 4.9954 | 2080261 | 142138 |
| 7 | 6.80 | sulfate | 24.2099 | 9028274 | 583790 |



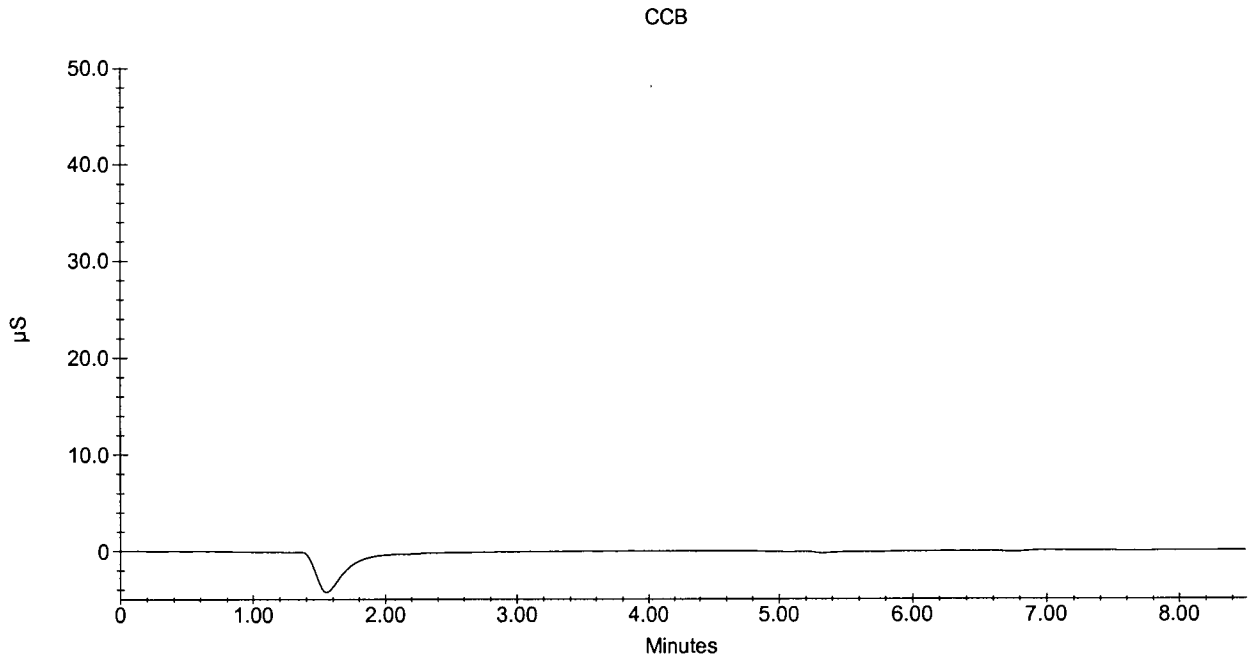
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_029.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 15:27:33
System Operator : mm
Injection Number : 29
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|



A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74701 SDG: 74701
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 11/03/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 11:16 | %R(1) | True CCV1 | Found 12:57 | %R(1) | True | Found | %R(1) | |
| chloride | 25 | 24.1999 | 96.8 | 25 | 23.9868 | 95.9 | | | | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74701 SDG: 74701
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 11/03/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 12:57 | %R(1) | True CCV1 | Found 15:12 | %R(1) | True | Found | %R(1) | |
| chloride | 25 | 23.9868 | 95.9 | 25 | 24.1209 | 96.5 | | | | |
| sulfate | 25 | 24.1294 | 96.5 | 25 | 24.2047 | 96.8 | | | | |

(1) Control Limits: 90-110

ILM02.0

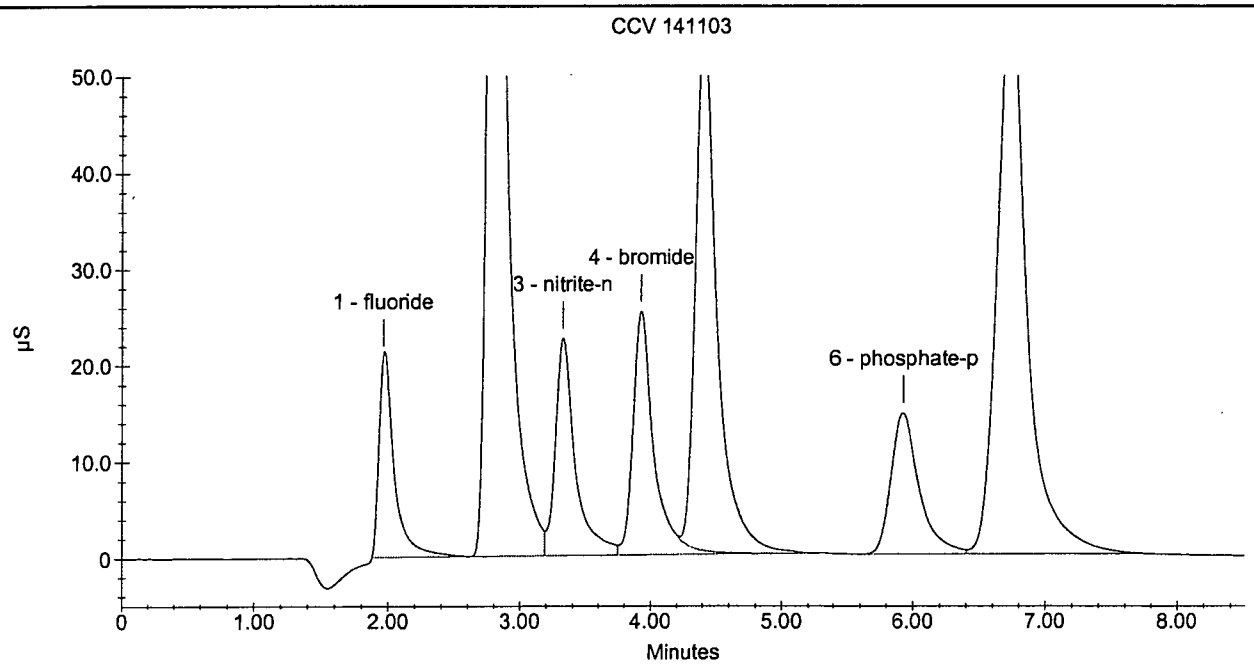
# Sample Analysis Report

Sample Name : CCV 141103
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_017.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 11:16:53
System Operator : mm
Injection Number : 17
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2.4047 | 1689189 | 207997 |
| 2 | 2.79 | chloride | 24.1999 | 13402977 | 1630473 |
| 3 | 3.32 | nitrite-n | 2.4375 | 2352199 | 224604 |
| 4 | 3.92 | bromide | 12.2322 | 2751851 | 251907 |
| 5 | 4.40 | nitrate-n | 4.9187 | 6202798 | 547099 |
| 6 | 5.92 | phosphate-p | 5.1484 | 2145034 | 145996 |
| 7 | 6.72 | sulfate | 24.4484 | 9120650 | 585340 |



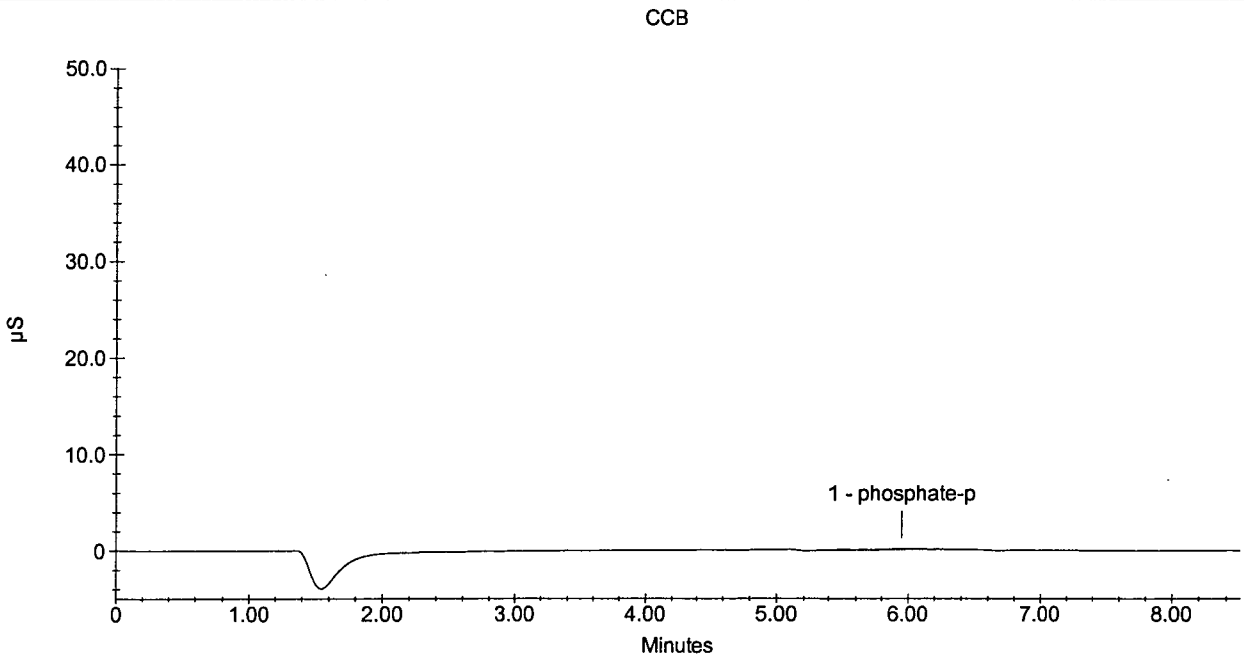
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_018.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 11:28:13
System Operator : mm
Injection Number : 18
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 5.95 | phosphate-p | 0.1776 | 40151 | 1337 |



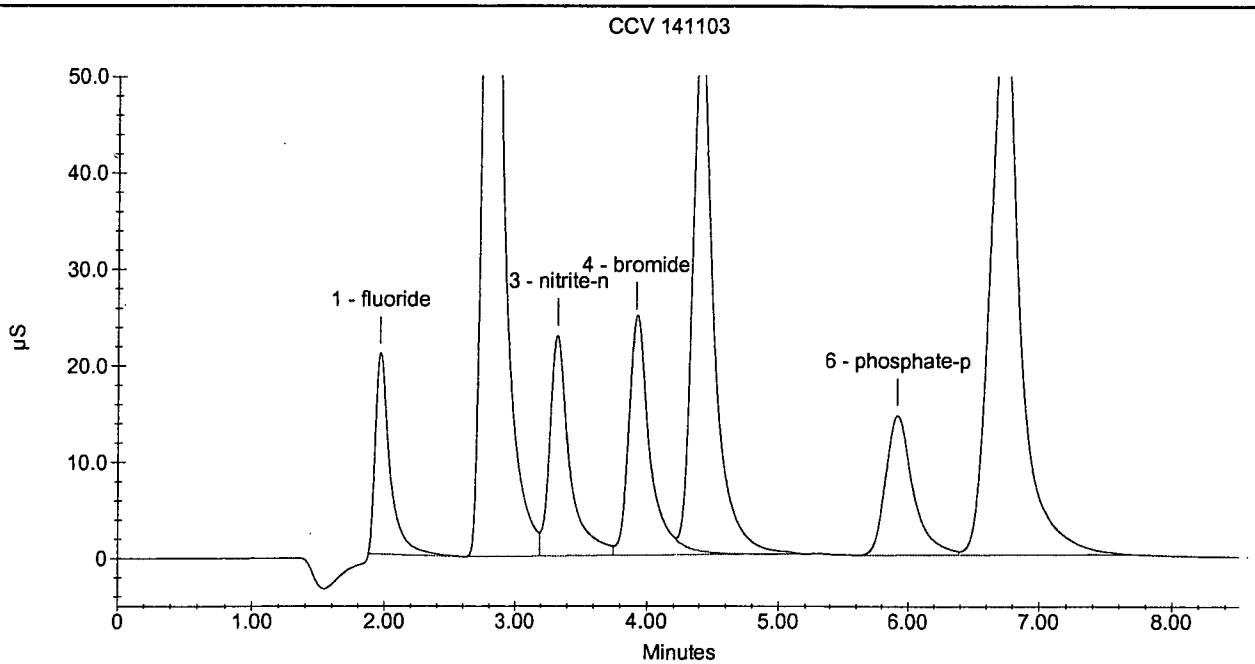
# Sample Analysis Report

Sample Name : CCV 141103
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_026.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 12:57:59
System Operator : mm
Injection Number : 26
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2.3096 | 1620566 | 207338 |
| 2 | 2.79 | chloride | 23.9868 | 13279238 | 1628597 |
| 3 | 3.32 | nitrite-n | 2.4714 | 2385900 | 228266 |
| 4 | 3.91 | bromide | 12.1100 | 2723833 | 244200 |
| 5 | 4.39 | nitrate-n | 4.8519 | 6115136 | 536786 |
| 6 | 5.91 | phosphate-p | 5.1049 | 2126602 | 144819 |
| 7 | 6.71 | sulfate | 24.1295 | 8997130 | 580360 |



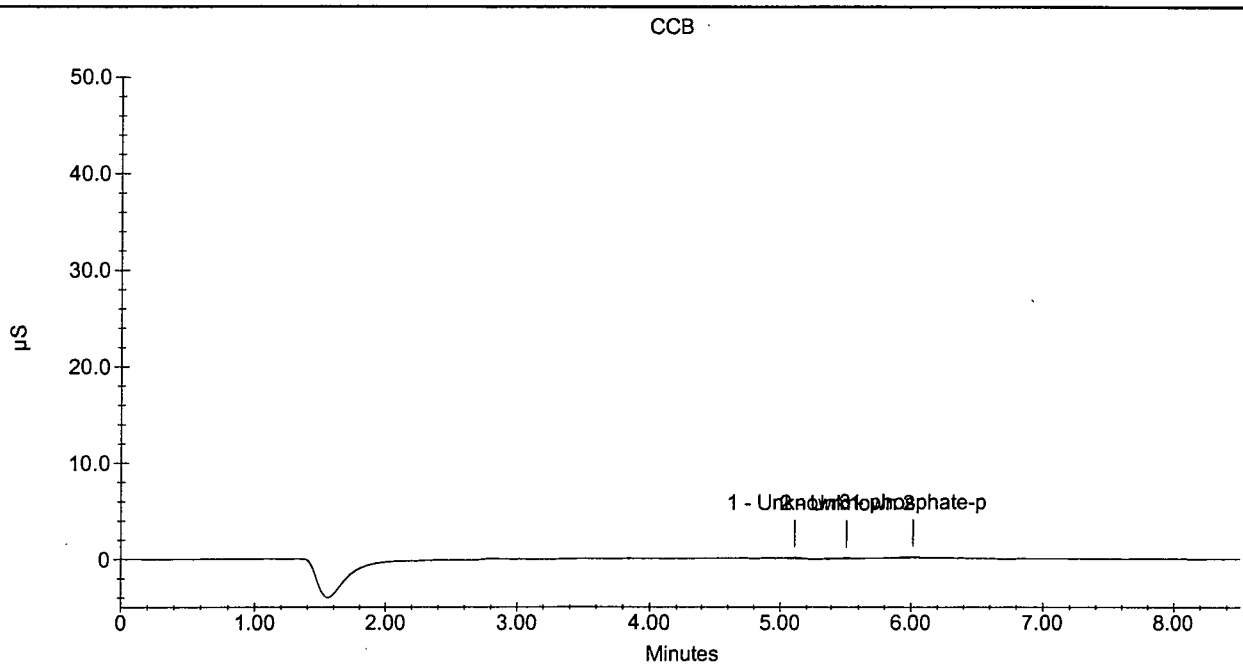
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_027.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 13:09:15
System Operator : mm
Injection Number : 27
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 5.11 | Unknown 1 | 0.0000 | 11136 | 1235 |
| 2 | 5.51 | Unknown 2 | 0.0000 | 11151 | 764 |
| 3 | 6.01 | phosphate-p | 0.1119 | 12337 | 889 |



# INORGANICS

## Raw Data

APPL, INC.

# WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| SM 2320B | TOTAL ALKALINITY | 1.70 U | 2.0 | 1.70 | 0.85 | mg/L | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |
| EPA 353.2 | NITRATE-NITRITE-N | 0.100 U | 0.10 | 0.100 | 0.028 | mg/L | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| EPA 9056 | SULFATE | 0.198 U | 1.00 | 0.198 | 0.090 | mg/L | 10/28/14 | 10/28/14 | #9056D-141028A-AZ05593 |
| EPA 9056 | CHLORIDE | 0.200 U | 1.00 | 0.200 | 0.080 | mg/L | 11/03/14 | 11/03/14 | #9056D-141103A-AZ05593 |

*Wetlab SC-Blank-REG MDLs*
*Printed: 11/07/14 9:12:31 AM*

# Laboratory Control Spike Recovery

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level mg/L | SPK Result mg/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 9056 | CHLORIDE | 20.0 | 19.2 | 96.0 | 80-120 | 11/03/14 | 11/03/14 | #9056D-141103A-AZ05593 |
| EPA 9056 | SULFATE | 20.0 | 19.2 | 96.0 | 80-120 | 10/28/14 | 10/28/14 | #9056D-141028A-AZ05593 |

Comments: _____

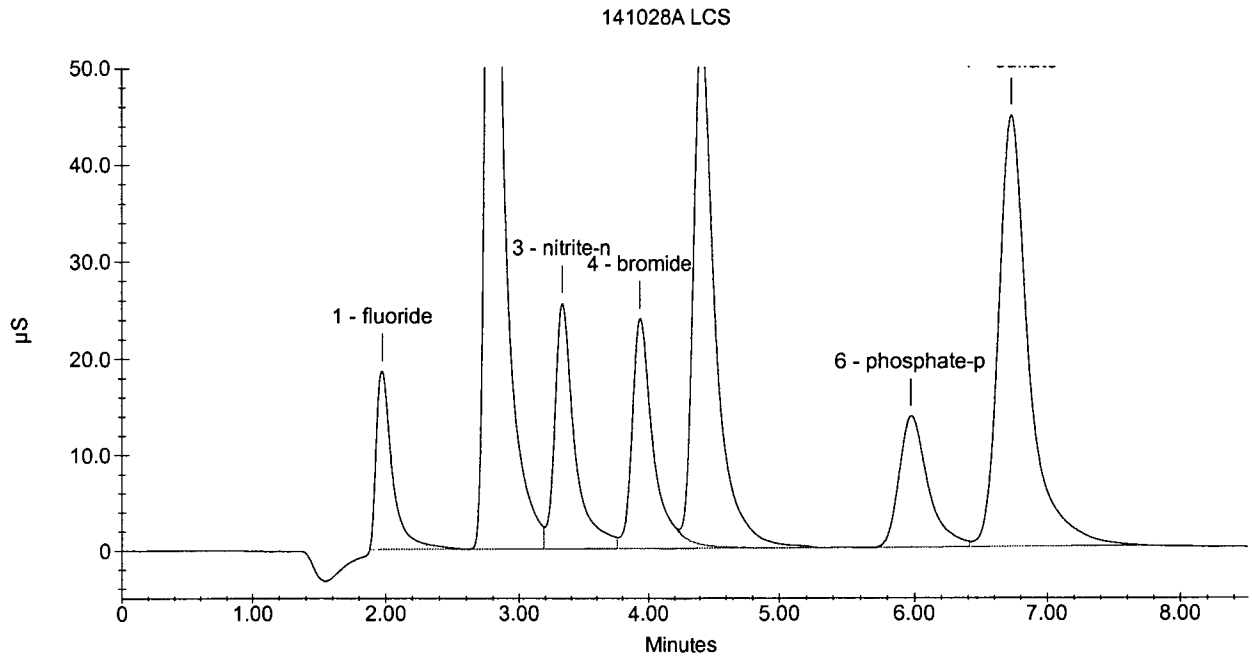
# Sample Analysis Report

Sample Name : 141028A LCS
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_006.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 08:53:56
System Operator : mm
Injection Number : 6
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.2437 | 1572986 | 185228 |
| 2 | 2.79 | chloride | 18.6847 | 10200450 | 1151390 |
| 3 | 3.33 | nitrite-n | 2.8230 | 2735135 | 254483 |
| 4 | 3.93 | bromide | 12.0121 | 2701399 | 238047 |
| 5 | 4.41 | nitrate-n | 4.8871 | 6161399 | 526895 |
| 6 | 5.97 | phosphate-p | 4.8857 | 2033782 | 136672 |
| 7 | 6.73 | sulfate | 19.2144 ✓ | 7093538 | 445910 |




algorithm check 11-7-14
SO4

$(2.582 \times 10^{-6} \times 7093538) + 0.899 = 19.2$

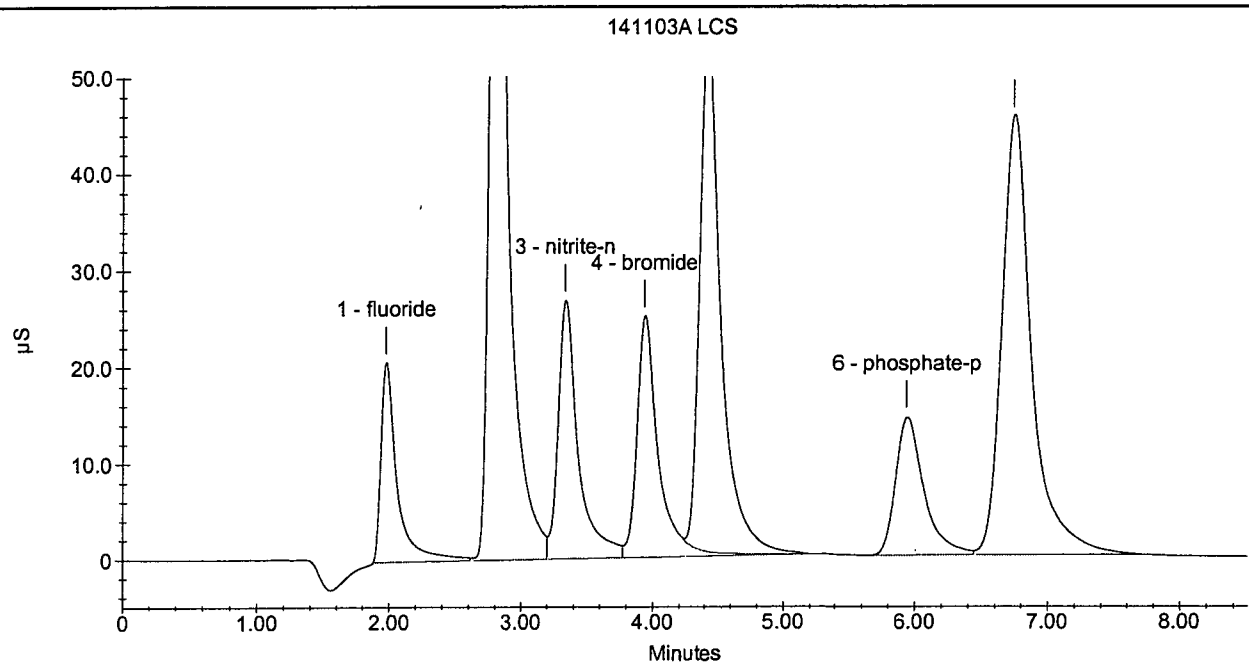
# Sample Analysis Report

Sample Name : 141103A LCS
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_019.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 11:39:18
System Operator : mm
Injection Number : 19
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.5138 | 1768010 | 206027 |
| 2 | 2.80 | chloride | 19.2477 | 10527337 | 1267380 |
| 3 | 3.33 | nitrite-n | 2.8913 | 2802993 | 266696 |
| 4 | 3.93 | bromide | 12.4401 | 2799531 | 248946 |
| 5 | 4.41 | nitrate-n | 4.9124 | 6194517 | 543933 |
| 6 | 5.93 | phosphate-p | 5.1148 | 2130793 | 142881 |
| 7 | 6.73 | sulfate | 19.4147 | 7171097 | 453184 |




algorithm check CL 105 11.7.14
$(1.722\times10^{-6} \times \cancel{7171097}\ 10527337) + 1.118 = 19.2$
105 11.7.14

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 4.83 | 4.76 | 96.6 | 95.2 | 1.5 | 20 | 90-110 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | #35OF-141105A-AZ05593 |
| SM 2320B | TOTAL ALKALINITY AS CA | 250 | 253 | 254 | 101 | 102 | 0.39 | 20 | 90-110 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | #232W-A141103-AZ05593 |

Comments: _____

# Matrix Spike Recoveries

## WETLAB

APPL ID: **141105W-05593 MS - 191558**

Sample ID: AZ05593

Client ID: RHMW06-GW-01

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | Matrix Res mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recovery | DUP % Recovery | RPD | RPD Max | Recovery Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 0.53 | 5.65 | 5.57 | 102 | 101 | 1.4 | 20 | 90-110 | 11/05/14 | 11/05/14 | 11/05/14 | 11/05/14 | 191558 | AZ05593 |
| EPA 9056 | CHLORIDE | 200 | 319 | 544 | 538 | 113 | 110 | 1.1 | 10 | 80-120 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | 191547 | AZ05593 |
| EPA 9056 | SULFATE | 40 | 66.6 | 109 | 108 | 106 | 104 | 0.92 | 10 | 80-120 | 10/28/14 | 10/28/14 | 10/28/14 | 10/28/14 | 191430 | AZ05593 |
| SM 2320B | TOTAL ALKALINITY AS | 250 | 118 | 378 | 378 | 104 | 104 | 0.0 | 20 | 90-110 | 11/03/14 | 11/03/14 | 11/03/14 | 11/03/14 | 191492 | AZ05593 |

Comments:

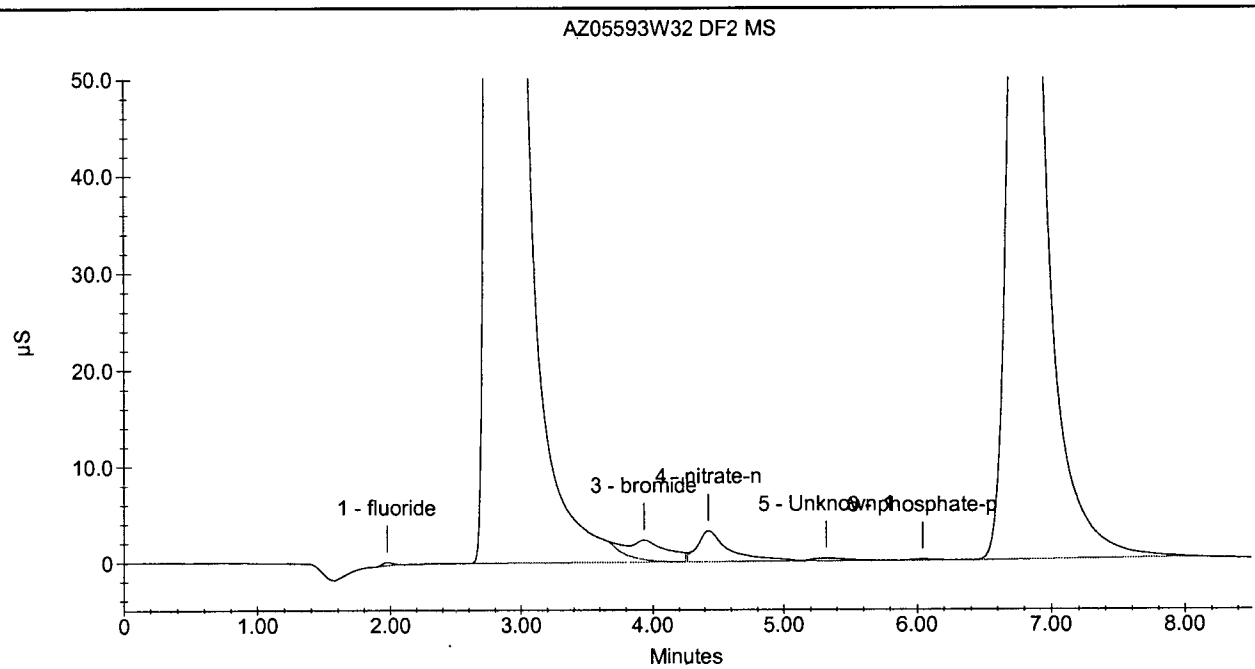
# Sample Analysis Report

Sample Name : AZ05593W32 DF2 MS
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_015.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 12:49:30
System Operator : mm
Injection Number : 15
Multiplier : 2.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.1781 | 17215 | 3323 |
| 2 | 2.85 | chloride | 344.9249 | 99495002 | 12169739 |
| 3 | 3.93 | bromide | 3.6371 | 364377 | 20179 |
| 4 | 4.43 | nitrate-n | 1.2084 | 538233 | 32152 |
| 5 | 5.32 | Unknown 1 | 0.0000 | 52000 | 2852 |
| 6 | 6.04 | phosphate-p | 0.2355 | 14797 | 1310 |
| 7 | 6.81 | sulfate | 109.3283 | 20823154 | 1407462 |



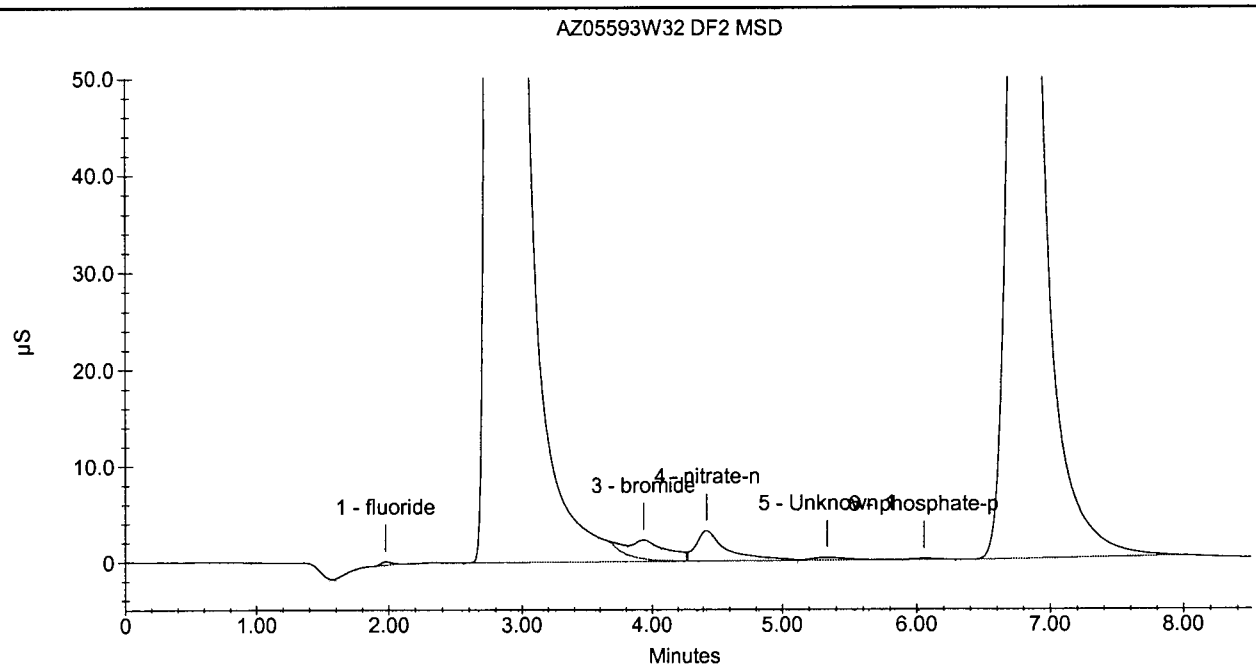
# Sample Analysis Report

Sample Name : AZ05593W32 DF2 MSD
Data File Name : I:\DIONEX\D1ANIONS\DATA\141028A\141028a_018.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 10/28/14 13:23:18
System Operator : mm
Injection Number : 18
Multiplier : 2.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.1858 | 20006 | 3679 |
| 2 | 2.85 | chloride | 344.6448 | 99413661 | 12152240 |
| 3 | 3.93 | bromide | 3.6193 | 362337 | 19727 |
| 4 | 4.43 | nitrate-n | 1.1702 | 513151 | 31485 |
| 5 | 5.33 | Unknown 1 | 0.0000 | 49448 | 2765 |
| 6 | 6.05 | phosphate-p | 0.2556 | 19043 | 1447 |
| 7 | 6.81 | sulfate | 107.8742 | 20541565 | 1392746 |



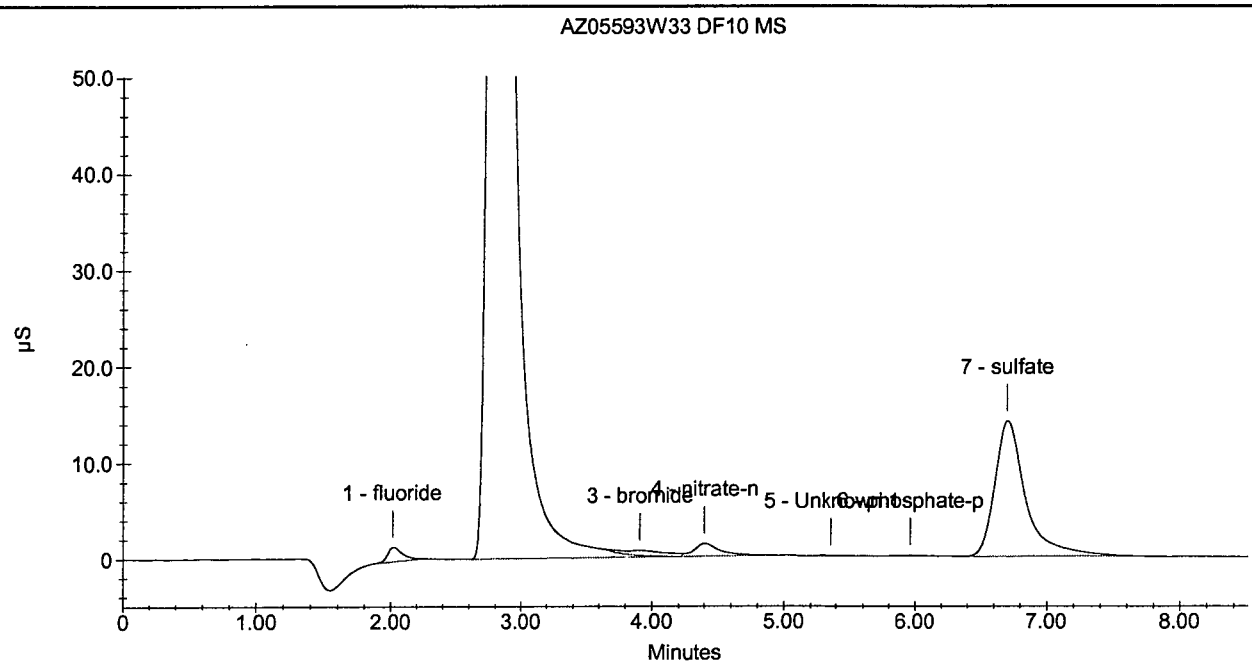
# Sample Analysis Report

Sample Name : AZ05593W33 DF10 MS
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_024.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 12:35:25
System Operator : mm
Injection Number : 24
Multiplier : 10.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 2.01 | fluoride | 2.3202 | 120452 | 14889 |
| 2 | 2.80 | chloride | 544.1938 | 30950588 | 3815078 |
| 3 | 3.91 | bromide | 6.6209 | 99241 | 5384 |
| 4 | 4.40 | nitrate-n | 3.2943 | 177490 | 13153 |
| 5 | 5.36 | Unknown 1 | 0.0000 | 14059 | 714 |
| 6 | 5.96 | phosphate-p | 1.0073 | 7590 | 651 |
| 7 | 6.69 | sulfate | 67.4114 | 2262656 | 140072 |



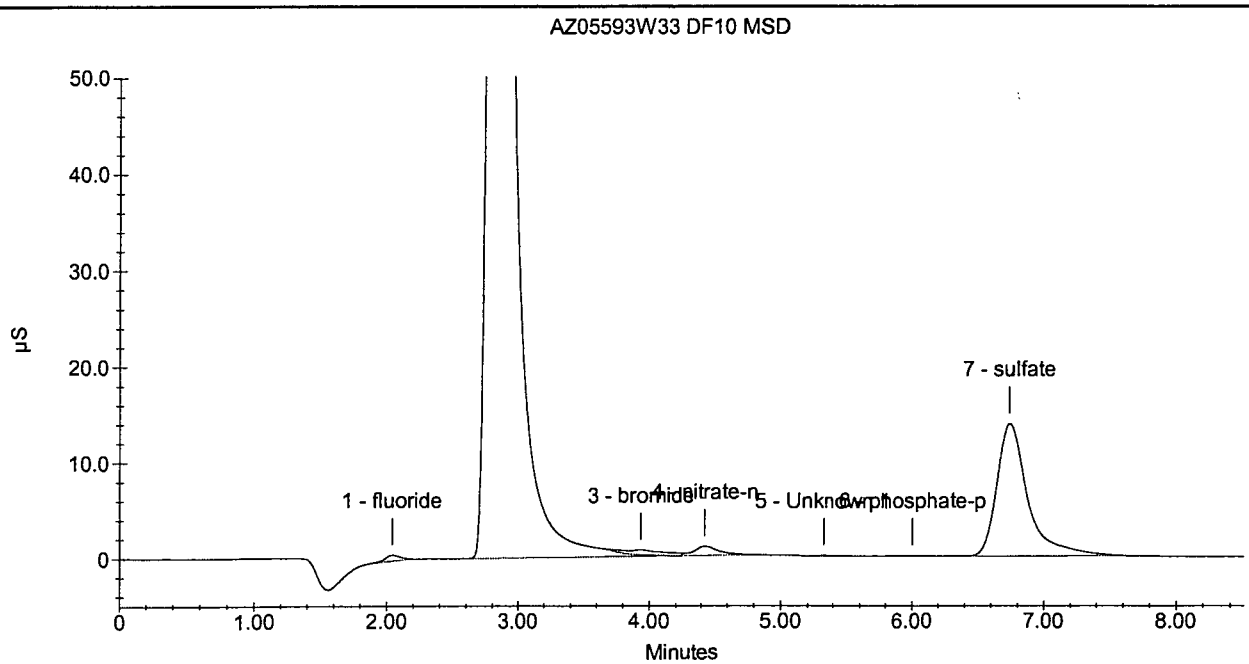
# Sample Analysis Report

Sample Name : AZ05593W33 DF10 MSD
Data File Name : I:\DIONEX\D1ANIONS\DATA\141103A\141103a_025.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/3/14 12:46:41
System Operator : mm
Injection Number : 25
Multiplier : 10.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 2.04 | fluoride | 1.3168 | 48002 | 6174 |
| 2 | 2.81 | chloride | 537.5128 | 30562639 | 3708861 |
| 3 | 3.93 | bromide | 6.4223 | 94687 | 5060 |
| 4 | 4.43 | nitrate-n | 2.9035 | 126189 | 9556 |
| 5 | 5.32 | Unknown 1 | 0.0000 | 9091 | 755 |
| 6 | 6.00 | phosphate-p | 1.0584 | 9750 | 731 |
| 7 | 6.73 | sulfate | 66.5061 | 2227593 | 138058 |



OPERATOR: Aileen
ACQ. TIME: Nov 5, 2014 14:29:17
DATA FILENAME: I:\LACHAT\OMNION\141105NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\141105NA.TRA

TRAY DESCRIPTION:
Created: Nov 5, 2014 13:05:03
Modified: Nov 5, 2014 14:29:48
NO3/TOTOXN 141105NA
DATA DESCRIPTION:
Created: Nov 5, 2014 14:29:17
Modified: Nov 5, 2014 14:29:17

Multi-Channel Table
Type: Unknowns
Channel Range: 1 to 8 -- Cup Range: 1 to 40

| Cup | Sample ID | Sampling Time | # of Reps | TOTOXN (mg/L) | Man Dil Factor |
|---|---|---|---|---|---|
| 1 | 141105A BLK | 14:47:32 | 1 | 0.0006 | 1.0 |
| 4 | 141105A LCS | 14:49:00 | 1 | 4.8320 | 1.0 |
| 5 | 141105A LCSD | 14:50:29 | 1 | 4.7626 | 1.0 |
| 6 | AZ05388W11 | 14:51:57 | 1 | 0.0627 | 1.0 |
| 7 | AZ05389W11 | 14:53:26 | 1 | 0.0554 | 1.0 |
| 8 | AZ05593W28 | 14:54:54 | 1 | 0.5341 | 1.0 |
| 9 | AZ05593W28MS | 14:56:21 | 1 | 5.6537 | 1.0 |
| 10 | AZ05593W28MSD | 14:57:49 | 1 | 5.5746 | 1.0 |

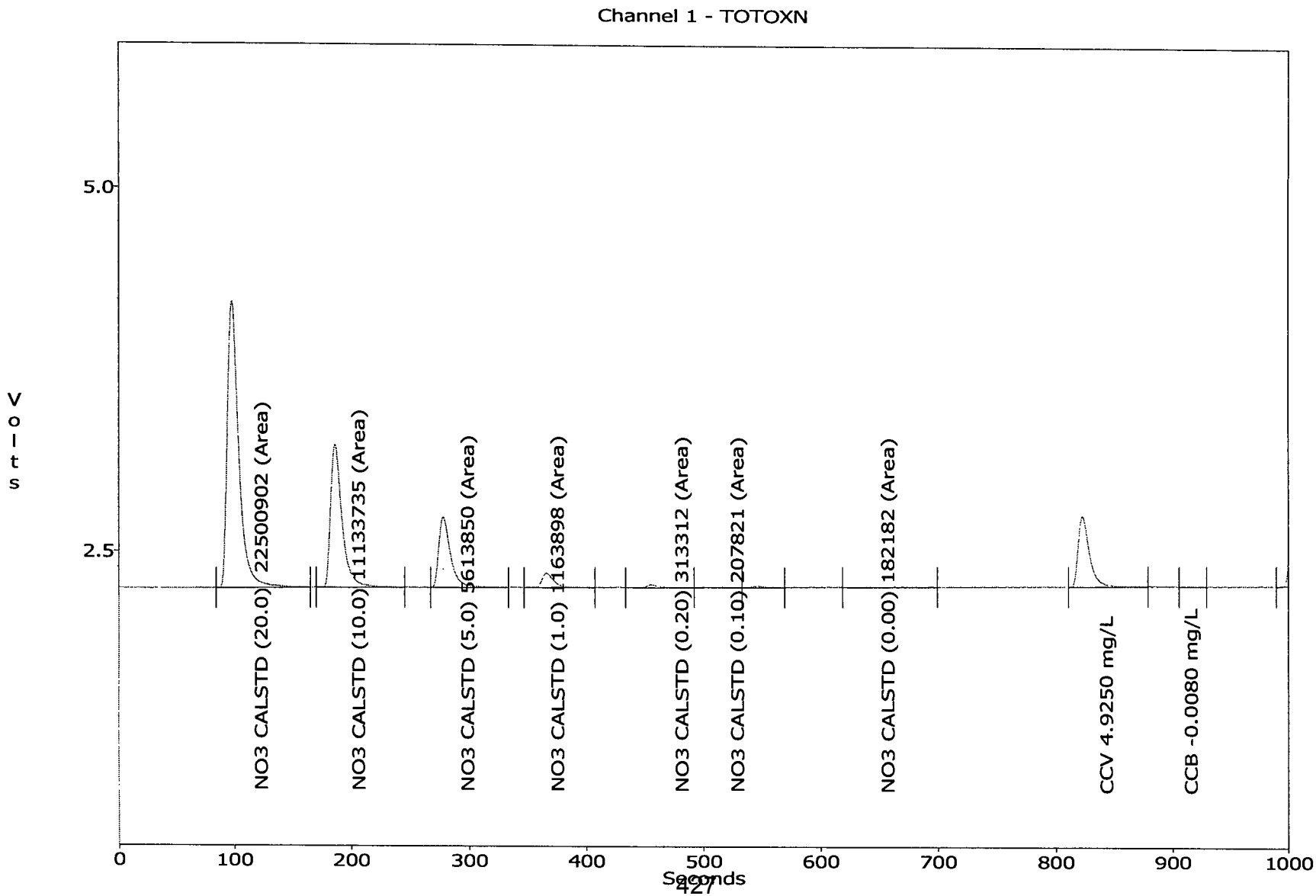
INSTRUMENT: Flow Injection Analysis
TRAY: 141105NA.TRA METHOD: TOTOXN1.MET DATAFILE: 141105NB.FDT
DATE/TIME: Wed Nov 05 14:29:18 2014 OPERATOR: Aileen

*** Begin Calibration ***
Cup# 1 Sample: NO3 CALSTD (20.0) Type: CalStd Level: 1 Rep# 1/1
Ch 1: TOTOXN Peak Area = 22500902.0 µv-s
Cup# 2 Sample: NO3 CALSTD (10.0) Type: CalStd Level: 2 Rep# 1/1
Ch 1: TOTOXN Peak Area = 11133735.0 µv-s
Cup# 15 Sample: NO3 CALSTD (5.0) Type: CalStd Level: 3 Rep# 1/1
Ch 1: TOTOXN Peak Area = 5613850.0 µv-s
Cup# 3 Sample: NO3 CALSTD (1.0) Type: CalStd Level: 4 Rep# 1/1
Ch 1: TOTOXN Peak Area = 1163898.0 µv-s
Cup# 4 Sample: NO3 CALSTD (0.20) Type: CalStd Level: 5 Rep# 1/1
Ch 1: TOTOXN Peak Area = 313312.0 µv-s
Cup# 5 Sample: NO3 CALSTD (0.10) Type: CalStd Level: 6 Rep# 1/1
Ch 1: TOTOXN Peak Area = 207821.0 µv-s
Cup# 6 Sample: NO3 CALSTD (0.00) Type: CalStd Level: 7 Rep# 1/1
Ch 1: TOTOXN Peak Area = 182182.0 µv-s
*** Updated Calibration ***
Ch 1: TOTOXN
** 1st Order Poly Calibration **
C[0] = 8.94884e-007
C[1] = -0.0705413
r = 1.0000
*** End Calibration Block ***
*** Calibration Passed ***
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1
Ch 1: TOTOXN = 4.9250 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.9250 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -1.5006%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1
Ch 1: TOTOXN = -0.0080 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0080 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
*** Starting DQM Set INITIAL ***
Cup# 7 Sample: ICV Type: RelChkStd Rep# 1/1
Ch 1: TOTOXN = 4.8957 mg/L
DQM Sample Results: ICV
Ch 1: TOTOXN = 4.8957 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -2.0864%
Test 1: Passed
Cup# 6 Sample: ICB Type: Blank Rep# 1/1
Ch 1: TOTOXN = -0.0061 mg/L
DQM Sample Results: ICB
Ch 1: TOTOXN
Determined Conc = -0.0061 mg/L
Test 1: Passed
*** End of DQM Set INITIAL - Set Passed ***
Cup# 1 Sample: 141105A BLK Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0006 mg/L
Cup# 4 Sample: 141105A LCS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.8320 mg/L
Cup# 5 Sample: 141105A LCSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.7626 mg/L
Cup# 6 Sample: AZ05388W11 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0627 mg/L
Cup# 7 Sample: AZ05389W11 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0554 mg/L
Cup# 8 Sample: AZ05593W28 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.5341 mg/L

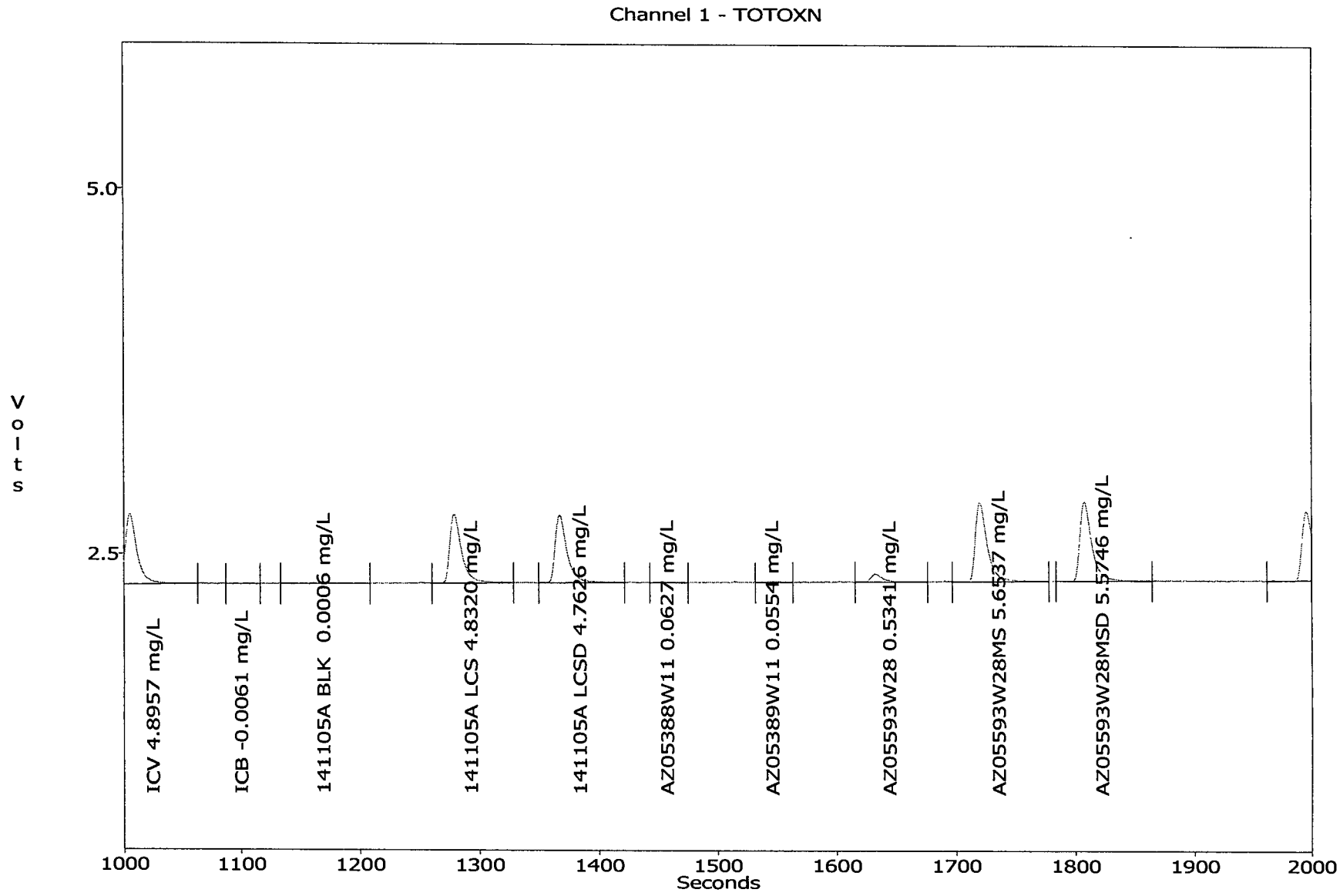
AP 11/5/14
Algorithm check on ICV ✓
$(8.94884)(5549568)(10^{-7}) - 0.0705 = 4.8957$

Cup# 9 Sample: AZ05593W28MS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.6537 mg/L
Cup# 10 Sample: AZ05593W28MSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.5746 mg/L
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = 4.9190 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.9190 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -1.6191%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = -0.0082 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0082 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
******* Tray Run Complete *******

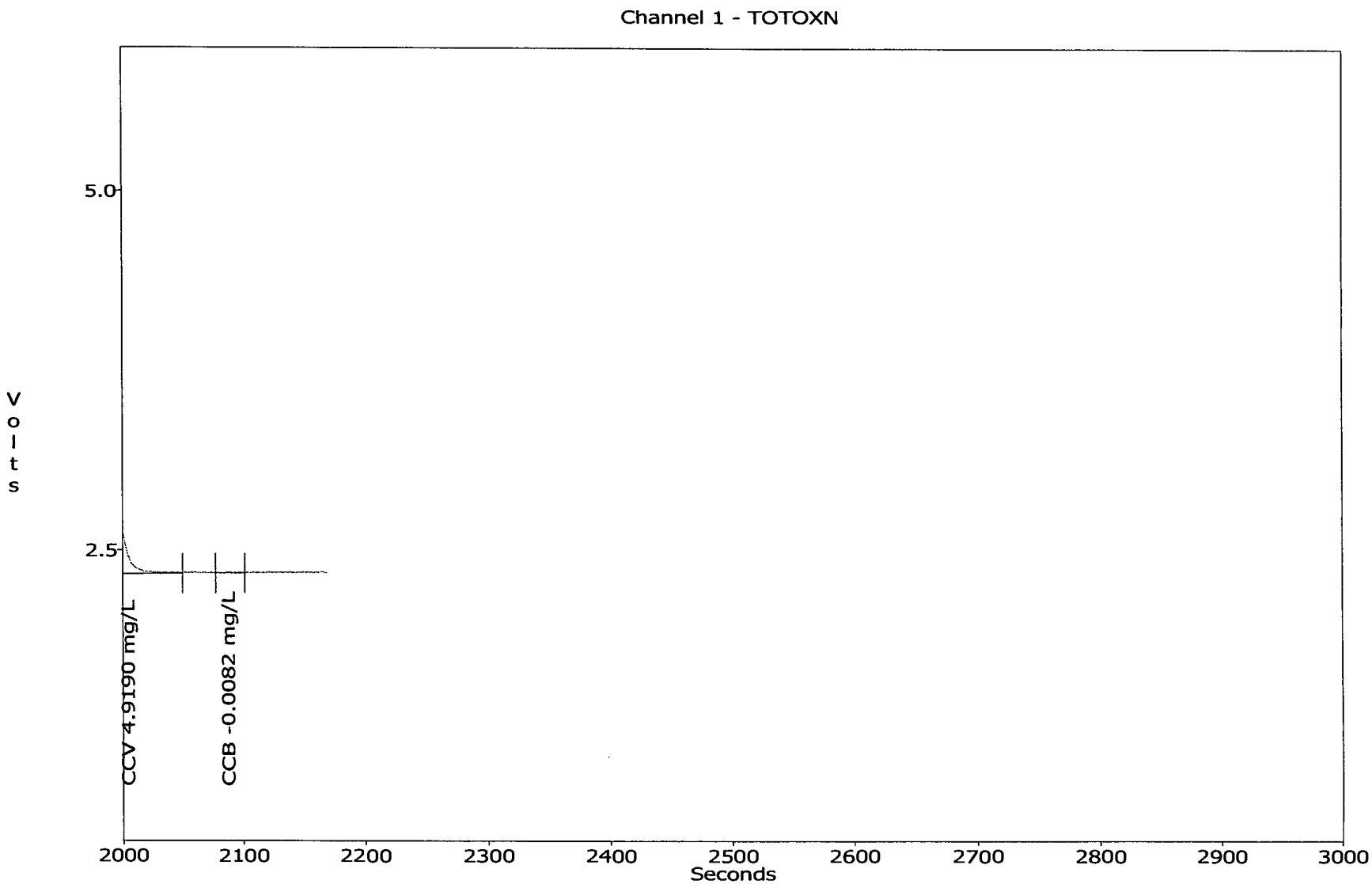
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 5, 2014 14:29:17
**DATA FILENAME:** I:\LACHAT\OMNION\141105NB.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141105NA.TRA



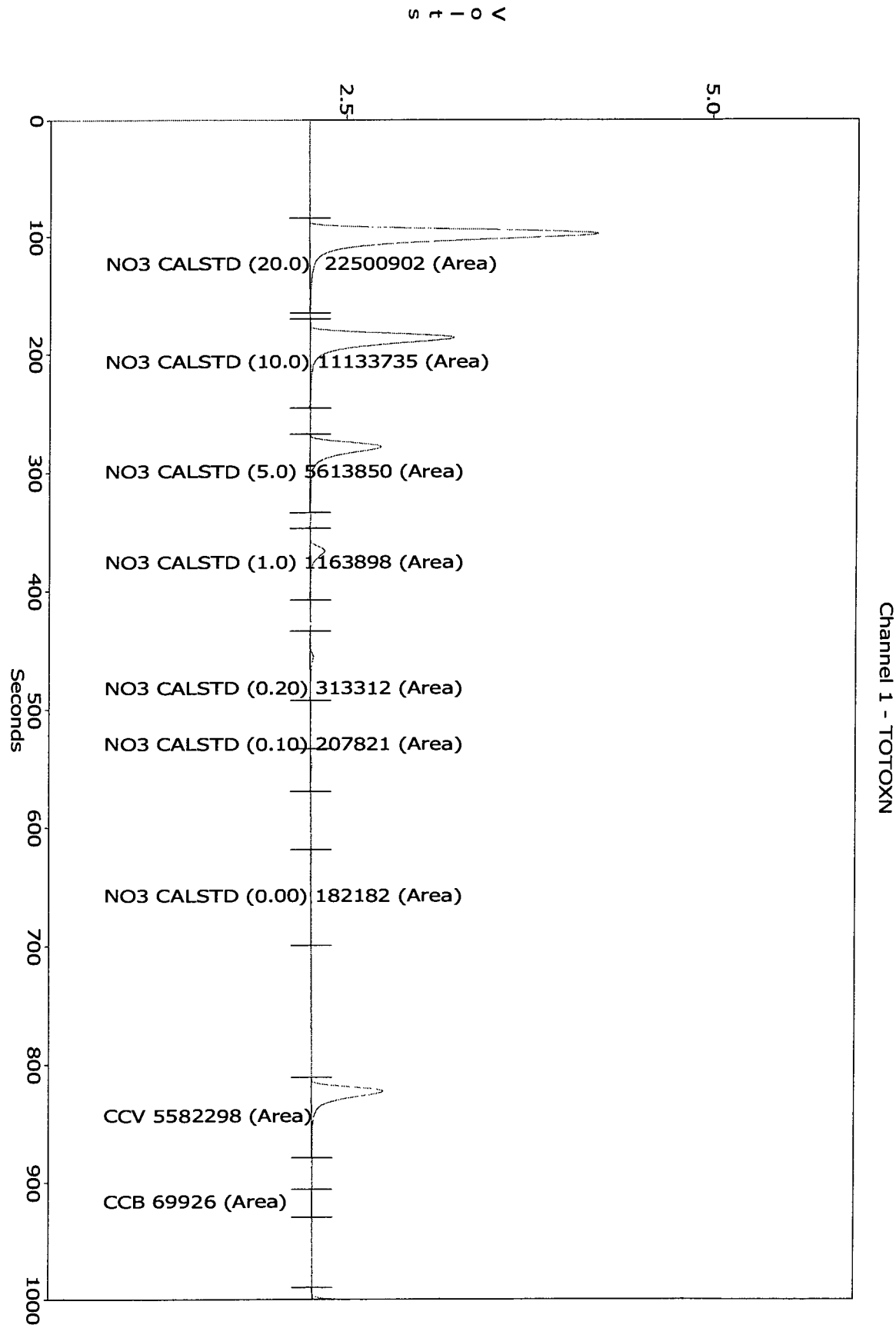
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 5, 2014 14:29:17
**DATA FILENAME:** I:\LACHAT\OMNION\141105NB.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141105NA.TRA



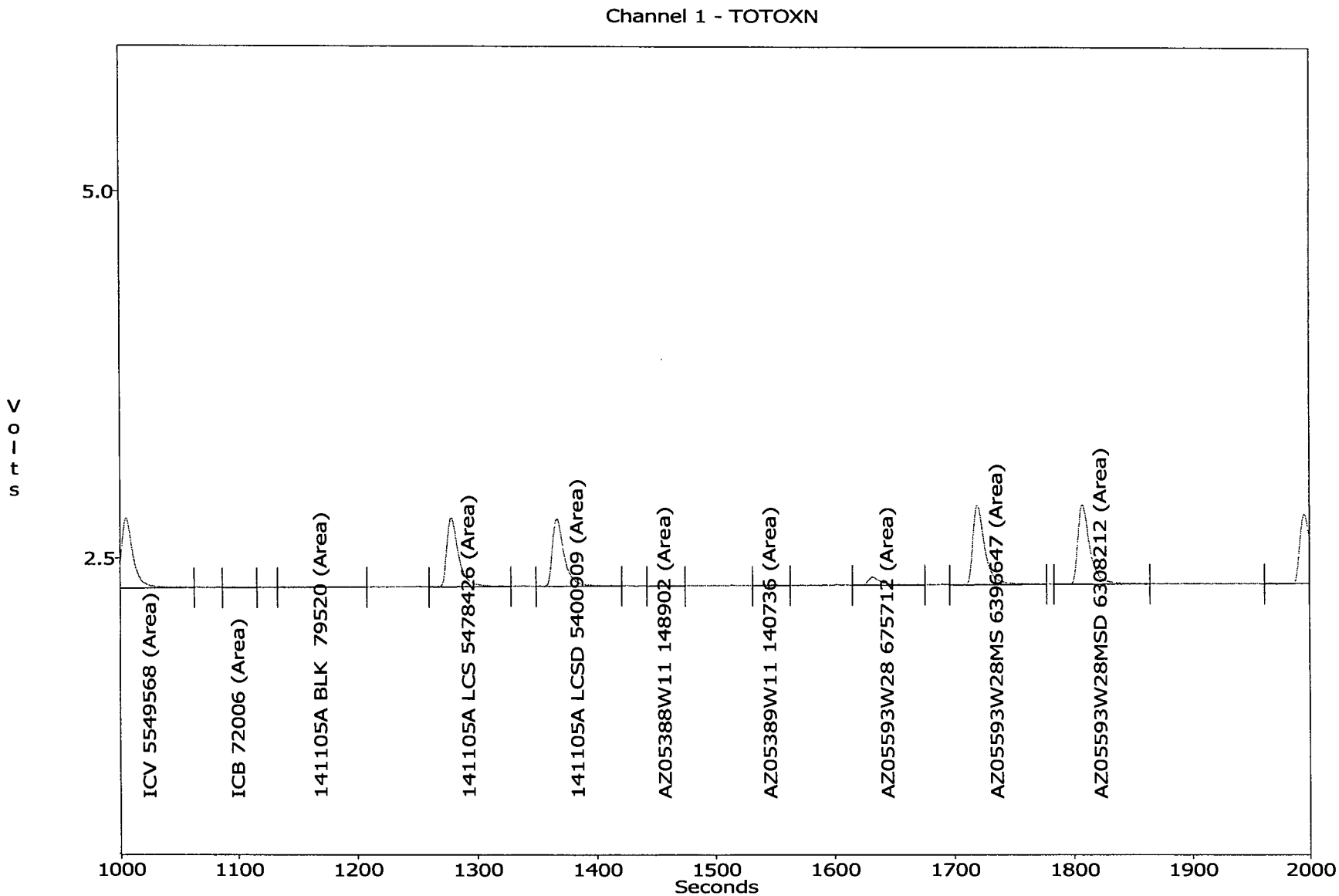
| | |
|---|---|
| OPERATOR: | Aileen |
| ACQ. TIME: | Nov 5, 2014 14:29:17 |
| DATA FILENAME: | I:\LACHAT\OMNION\141105NB.FDT |
| METHOD FILENAME: | I:\LACHAT\METHODS\TOTOXN1.MET |
| TRAY FILENAME: | I:\LACHAT\TRAYS\141105NA.TRA |



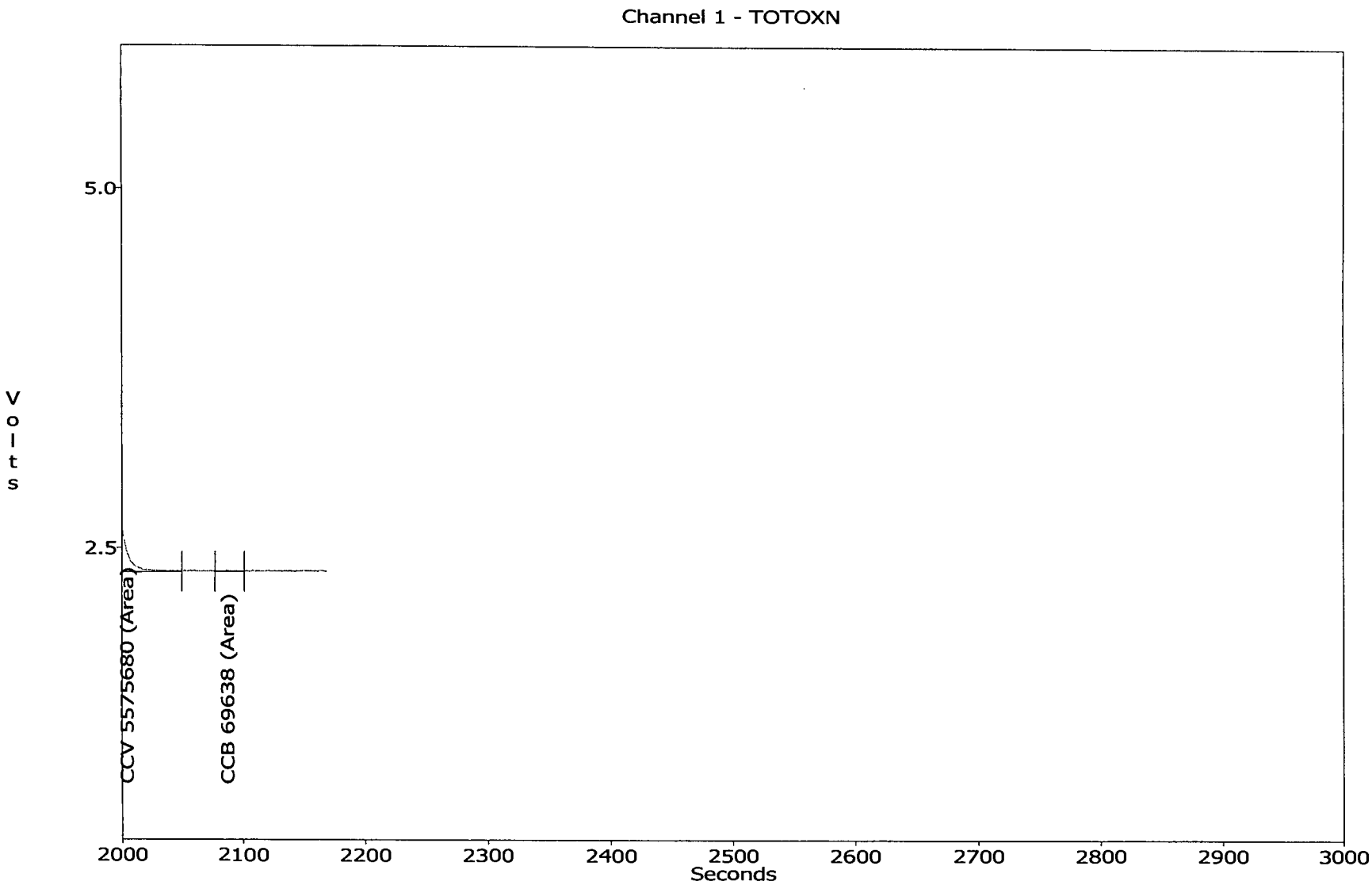
OPERATOR: Aileen
ACQ. TIME: Nov 5, 2014 14:29:17
DATA FILENAME: I:\LACHAT\OMNION\141105NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\141105NA.TRA



**OPERATOR:** Aileen
**ACQ. TIME:** Nov 5, 2014 14:29:17
**DATA FILENAME:** I:\LACHAT\OMNION\141105NB.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141105NA.TRA



| | |
|---|---|
| OPERATOR: | Aileen |
| ACQ. TIME: | Nov 5, 2014 14:29:17 |
| DATA FILENAME: | I:\LACHAT\OMNION\141105NB.FDT |
| METHOD FILENAME: | I:\LACHAT\METHODS\TOTOXN1.MET |
| TRAY FILENAME: | I:\LACHAT\TRAYS\141105NA.TRA |



# Metrohm 814/809 Titrando Data

| Sample ID | Analysis Date/Time | Method | Titration Volume (to 8.3) | Titration Volume (total) | OH | CO3 | HCO3 | Total Alk | Unit | Sample Vol | N | Batch | Initials |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AZ05593W32 msd | 2014-11-03 14:34:40 UTC-8 | Alkalinity | 0.000 | 8.912 | 0.00 | 0.00 | 377.87 | 377.87 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| AZ05593W32 ms | 2014-11-03 14:19:47 UTC-8 | Alkalinity | 0.000 | 8.908 | 0.00 | 0.00 | 377.70 | 377.70 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| AZ05593W32 | 2014-11-03 14:09:17 UTC-8 | Alkalinity | 0.000 | 2.776 | 0.00 | 0.00 | 117.70 | 117.70 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| 141103a lcsd | 2014-11-03 12:42:19 UTC-8 | Alkalinity | 0.248 | 5.998 | 0.00 | 21.03 | 233.28 | 254.32 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| 141103a lcs | 2014-11-03 12:31:00 UTC-8 | Alkalinity | 0.246 | 5.960 | 0.00 | 20.86 | 231.84 | 252.70 | mg/L | 25 mL | 0.0212 | a141103 | bb |
| 141103a blk | 2014-11-03 12:13:54 UTC-8 | Alkalinity | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | mg/L | 25 mL | 0.0212 | a141103 | bb |

Standards Prep Log Book# 62 page #

10/31/14 AP
Exp 11/7/14

AP 10/31/14

| NH4 STDS | STD / STOCK | PREP DATE / LOT | OPEN / EXP DATE | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. DI (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| NH3-N CCV | O2SI | 6/18/13 | 12/8/14 | 1000 | 5 | 50 | 100 |
| | | Lot 1047250 | | | | | |
| 1 | 100mg/L NH4 STOCK | 10/31/14 | 11/7/14 | 100 | 0.0 | 100 | 0.0 |
| 2 | | | | | | | |
| 3 | | | | | 0.5 | 100 | 0.5 |
| 4 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 6 | | | | | 10.0 | 100 | 10.0 |
| 7 | | | | | 20.0 | 100 | 20.0 |
| | | Lot 011714 | | | | | |
| NH3-N ICV | Absolute | 2/21/14 | 1/17/16 | 1000 | 0.25 | 50 | 5.00 |

10-31-14 EK
exp 11-1-14

MBAS

2 ml X 1000 ppm LAS Absolute Stds Lot 071913-33718 / 200 ml DI
= 10 ppm LAS

10 ml X 10 ppm LAS (10-31-14) / 100 ml DI = 1 ppm LAS EK 10-31-14

CCV1 (0.8): 8 ml X 1 ppm LAS (10-31-14) / 100 ml DI EK 10-31-14

CCV2 / LCS: 5 ml X 10 ppm LAS (10-31-14) / 100 ml DI

MS: 5 ml X 10 ppm LAS (10-31-14) / 400 ml sample

11-3-14 EK
exp
11-4-14

**$OPO_4$-P For Method SM4500PE exp 11-4-14**

1mL X 1000ppm $PO_4$-P CPI LOT 12G005-32026 / 100mL DI → 10ppm $PO_4$-P
10ppm $PO_4$-P (11-3-14) X 10mL / 100mL DI → 1ppm $PO_4$-P
1ppm $PO_4$-P (11-3-14) X 2.5mL / 50mL → 0.05ppm $PO_4$-P
↓ X5mL / ↓ → 0.10ppm $PO_4$-P
↓ X 10mL / ↓ → 0.20ppm $PO_4$-P
↓ X 25mL / ↓ → 0.50ppm $PO_4$-P

**ICV $PO_4$-P**

1000 PO4-P O2SI Lot 1049001-32799X 1mL / 100mL DI → 10ppm $PO_4$-P
10ppm $PO_4$-P (11-3-14)X 0.75mL / 50mL DI → 0.15ppm $PO_4$-P
LCS: 0.75mL X 10ppm $PO_4$-P (11-3-14 / 50mL DI → 0.15ppm $PO_4$-P
MS: 0.75mL X 10ppm $PO_4$-P (11-3-14) / 50mL sample → 0.15ppm $PO_4$-

11/3/14 BB
Book 1 of 10/29/14
exp. 8/26/15

0.02N $H_2SO_4$ Titrant for Alkalinity
200 mL 0.1 N $H_2SO_4$ (exp 8/26/14)
Final vol 1L 434 I water

9/10/14 AP
Exp 9/17/14

AP 9/10/14

| NH4 STDS | STD / STOCK | PREP DATE / LOT | OPEN / EXP DATE | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. DI (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| NH3-N CCV | O2SI | 6/18/13 | 12/8/14 | 1000 | 5 | 50 | 100 |
| | | Lot 1047250 | | | | | |
| 1 | 100mg/L NH4 STOCK | 9/10/14 | 9/17/14 | 100 | 0.0 | 100 | 0.0 |
| 2 | | | | | | | |
| 3 | | | | | 0.5 | 100 | 0.5 |
| 4 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 6 | | | | | 10.0 | 100 | 10.0 |
| 7 | | | | | 20.0 | 100 | 20.0 |
| | | Lot 011714 | | | | | |
| NH3-N ICV | Absolute | 2/21/14 | 1/17/16 | 1000 | 0.25 | 50 | 5.00 |

9/10/14 BB — $NaHCO_3$ Inorganic Spiking Solution
exp 3/10/15 — 7.0007g $NaHCO_3$ BDH Lot # 183064
Final Vol 1L w/DI water

9/12/14 BB — 0.02N $H_2SO_4$ Titrant for Alkalinity
exp 8/24/15 — 200 mL 0.1N $H_2SO_4$ (exp 8/24/14)
Final vol 1L w/DI water

9-12-14 CK — 7199
exp 9-13-14 — 1mL x 100ppm $Cr^{+6}$ (9-9-14)/100mL DI = 1000 ppb $Cr^{+6}$
1mL x 1000ppb $Cr^{+6}$ (9-12-14)/100mL DI = 10ppb $Cr^{+6}$ (CCV)
LCS, MS: 0.25mL x 1000 ppb $Cr^{+6}$ (9-12-14)/25mL DI or sample

9/13/14 MM — 1mL x 100ppm $Cr^{6+}$ (9-9-14)/100mL DI = 1000ppb $Cr^{6+}$ Std
exp 9/14/14 — 1mL x 1000 $Cr^{6+}$ ppb (9/13/14)/100mL DI = 10ppb $Cr^{6+}$ (CCV)
1mL x 100ppm $Cr^{6+}$ (9/10/14)/100mL DI = 1000ppb $Cr^{6+}$ ICV
1mL x 1000ppb $Cr^{6+}$ (9/13/14)/100mL DI = 10ppb $Cr^{6+}$ (LCS)
MS: 0.25mL x 1000ppb $Cr^{6+}$ ICV (9/13/14)/25mL sample = 10ppb

9-16-14 CK — 3060A Digestion
exp 9-17-14 — 1mL x 100ppm $Cr^{+6}$ (9-9-14)/100mL DI = 1ppm $Cr^{+6}$

BB 10/28/14

BB 10/28/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.83

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02113

BB 10/30/14

BB10/30/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.77

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02124

Standards Prep Log Book# 62 page# 025

| FINAL CONC. (mg/L) |
|---|
| |
| 100 |
| |
| 0.0 |
| |
| 0.5 |
| 1.0 |
| 5.0 |
| 10.0 |
| 20.0 |
| |
| 5.00 |

CKD 11-4-14

11-4-14 CK $I_2$ 0.025N Thiosulfate (for $S^=$)
exp 3.20 g $I_2$ EMD LOT 20111212 40-03046 1 l
5-4-15 +25.00 KI BDH LOT 0273C515-03219 DI

11-4-14 CK 0.025N Thiosulfate
exp 5-4-15 6.205 g $Na_2S_2O_3 5H_2O$ Macron LOT 0000024050-03097
+9 ml NaOH 1N (7-29-14)
bring to vol 1 l with DI

AP 11/5/14

11/5/14 AP
Exp 11/12/14

| NO3-N STDS | STD / STOCK | PREP DATE / LOT# | EXP. | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. W/DI H2O (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 100mg/L STOCK | O2SI | 2/28/14 | 8/30/15 | 1000 | 5 | 50 | 100 |
| | | 1057207 | | | | | |
| 0.1 | 100mg/L NO3-N STOCK | 11/5/14 | 11/12/14 | | 0.1 | 100 | 0.1 |
| 0.2 | | | | | 0.2 | 100 | 0.2 |
| 0.5 | | | | | | | |
| 1 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 10 | | | | | 10.0 | 100 | 10.0 |
| 20 | | | | | 20.0 | 100 | 20.0 |
| | | | | | | | |
| NO3-N ICV | CPI | 13L102 | 11/22/15 | 1000 | 0.25 | 50 | 5.00 |
| | | 5/27/14 | | | | | |
| **LCS /MS /MSD** | **STOCK** | **LOT# 13L102** | **EXP.** | **CONC STOCK [mg/L]** | **STD (mL)** | **FINAL VOL.** | **FINAL CONC. (mg/L)** |
| LCS | CPI | 11/22/15 | 11/12/14 | 1000 | 0.25 | 50 mL | 5 |
| MS / MSD | CPI | 11/22/15 | 11/12/14 | 1000 | 0.25 | 50 mL | 5 |

7/8/20 DI 20 ml
31-14
~LAS
E
ple

| | |
|---|---|
| 09/13/14 mm<br>exp 09/14/14 | Anion LCS, MS/MSD made as per page 48. |
| 09/15/14 mm | Anion eluent made as per page 42 |
| 09/15/14 mm<br>exp 09/16/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 09/16/14 mm<br>exp | Anion ICAL stock, curve, and ICV made as per page 47. |
| 09/16/14 mm<br>exp 09/17/14 | Anion LCS, MS/MSD made as per page 48. |

made as per p. 29

per p. 29

as per p. 29

22.

| METHOD 300 / 9056 | | ANION STOCK | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| O2SI | F- | 1,000 | 1037642-31166 | 01/04/14 | 0.25 | 5 |
| O2SI | Cl- | 5,000 | 1045796-32404 | 11/08/14 | 0.5 | 50 |
| O2SI | NO2-N | 1,000 | 1040585-31592 | 04/26/14 | 0.25 | 5 |
| Ultra Scientific | Br- | 1,000 | L00953-31570 | 09/30/14 | 1.25 | 25 |
| O2SI | NO3-N | 1,000 | 1040587-31591 | 04/26/14 | 0.5 | 10 |
| O2SI | PO4-P | 1,000 | 1040570-31590 | 04/26/14 | 0.5 | 10 |
| Ultra Scientific | SO4 | 5,000 | P00075-30305 | 02/28/14 | 0.5 | 50 |
| Brought up with milipore water to Final Volume of: | | | | | | 50 |

| METHOD 300 / 9056 | | | | ANION CAL CURVE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ICAL #1 | ICAL#2 | ICAL#3 | ICAL #4 | ICAL #5 | ICAL #6 | ICAL #7 |
| ID# | mg/L | Prep Date | EXP. DATE | mL | mL | mL | mL | mL | mL | mL |
| ANION STOCK | 100 | | | 0.4 | 2 | 10 | 2 | 5 | 7 | 10 |
| Brought up w/ Milipore Water to final volume of (mL): | | | | 100 | 100 | 100 | 10 | 10 | 10 | na |
| Final Conc F (mg/L): | | | | 0.04 | 0.1 | 0.5 | 1 | 2.5 | 3.5 | 5 |
| Final Conc Cl (mg/L): | | | | 0.4 | 1 | 5 | 10 | 25 | 35 | 50 |
| Final Conc NO2-N (mg/L): | | | | 0.04 | 0.1 | 0.5 | 1 | 2.5 | 3.5 | 5 |
| Final Conc Br (mg/L): | | | | 0.2 | 0.5 | 2.5 | 5 | 12.5 | 17.5 | 25 |
| Final Conc NO3-N (mg/L): | | | | 0.08 | 0.2 | 1 | 2 | 5 | 7 | 10 |
| Final Conc PO4-P (mg/L): | | | | 0.08 | 0.2 | 1 | 2 | 5 | 7 | 10 |
| Final Conc SO4 (mg/L): | | | | 0.4 | 1 | 5 | 10 | 25 | 35 | 50 |

| METHOD 300 / 9056 | | ANION ICV / LCS | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.625 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | |

| | |
|---|---|
| 10/16/14 MM<br>exp 10/17/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 10/17/14 MM<br>exp 10/18/14 | Anion CCV, MS/MSD made as per page 48. |
| 10/20/14 MM | Anion Eluent made as per page 22. |
| 10/20/14 MM<br>exp 10/21/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 10/22/14 MM<br>exp 10/23/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 10/23/14 MM<br>exp 10/24/14 | Anion CCV, MS/MSD made as per page 48 |
| 10/24/14 MM<br>exp 10/25/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 10/27/14 MM | Anion Eluent made as per page 22. |
| 10/27/14 MM<br>exp 10/28/14 | Anion CCV, LCS, MS/MSD made as per page 48 |
| 10/29/14 MM<br>exp 10/30/14 | Anion CCV, LCS, MS/MSD made as per page 48 |
| 10/30/14 MM<br>exp 10/31/14 | Anion CCV, MS/MSD made as per page 48. |
| 10/31/14 MM<br>exp 11/1/14 | Anion LCS, MS/MSD made as per page 48. |

| | |
|---|---|
| 11/03/14 MM exp 11/04/14 | Anion CCV, LCS, MS/MSD made as per page 48 |
| 11/04/14 MM exp | Anion Eluent made as per page 22. |
| 11/04/14 MM exp 11/05/14 | Anion LCS, MS/MSD made as per page 48. |

11·11·13
exp 11·12·13

| | | ANION CCV | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| O2SI | F- | 1,000 | 1037642-31166 | 01/04/14 | 0.125 | 2.50 |
| O2SI | Cl- | 5,000 | 1045796-32404 | 11/08/14 | 0.25 | 25.0 |
| O2SI | NO2-N | 1,000 | 1040585-31592 | 04/26/14 | 0.125 | 2.5 |
| Ultra Scientific | Br- | 1,000 | L00953-31570 | 09/30/14 | 0.625 | 12.50 |
| O2SI | NO3-N | 1,000 | 1040587-31591 | 04/26/14 | 0.25 | 5.0 |
| O2SI | PO4-P | 1,000 | 1040570-31590 | 04/26/14 | 0.25 | 5.0 |
| Ultra Scientific | SO4 | 5,000 | P00075-30305 | 02/28/14 | 0.25 | 25.0 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | |

11·11·13

11·11·13
exp 11·12·13

| METHOD 300 / 9056 | | ANION LCS | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.63 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | |

11·11·13

11·11·13
exp 11·12·13

| METHOD 300 / 9056 | | ANION MS/MSD | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.63 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Final Volume of Sample: (mL) | | | | | 50 | |

11·11·13

# 353.2 Injection Log

Directory: I:\Lachat\UPLOAD\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 1 | 05 Nov 2014 | 14:29 | NO3 CALSTD (20.0) | | 141105NB | 1. |
| 2 | 05 Nov 2014 | 14:30 | NO3 CALSTD (10.0) | | 141105NB | 1. |
| 3 | 05 Nov 2014 | 14:32 | NO3 CALSTD (5.0) | | 141105NB | 1. |
| 4 | 05 Nov 2014 | 14:33 | NO3 CALSTD (1.0) | | 141105NB | 1. |
| 5 | 05 Nov 2014 | 14:35 | NO3 CALSTD (0.20) | | 141105NB | 1. |
| 6 | 05 Nov 2014 | 14:36 | NO3 CALSTD (0.10) | | 141105NB | 1. |
| 7 | 05 Nov 2014 | 14:38 | NO3 CALSTD (0.00) | | 141105NB | 1. |
| 8 | 05 Nov 2014 | 14:41 | CCV | | 141105NB | 1. |
| 9 | 05 Nov 2014 | 14:42 | CCB | | 141105NB | 1. |
| 10 | 05 Nov 2014 | 14:44 | ICV | | 141105NB | 1. |
| 11 | 05 Nov 2014 | 14:45 | ICB | | 141105NB | 1. |
| 12 | 05 Nov 2014 | 14:47 | 141105A BLK | | 141105NB | 1. |
| 13 | 05 Nov 2014 | 14:49 | 141105A LCS | | 141105NB | 1. |
| 14 | 05 Nov 2014 | 14:50 | 141105A LCSD | | 141105NB | 1. |
| 17 | 05 Nov 2014 | 14:54 | AZ05593W28 | | 141105NB | 1. |
| 18 | 05 Nov 2014 | 14:56 | AZ05593W28MS | | 141105NB | 1. |
| 19 | 05 Nov 2014 | 14:57 | AZ05593W28MSD | | 141105NB | 1. |
| 20 | 05 Nov 2014 | 15:00 | CCV | | 141105NB | 1. |
| 21 | 05 Nov 2014 | 15:02 | CCB | | 141105NB | 1. |

# 300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 2 | 16 Sep 2014 | 13:01 | CAL STD #1 9/16/14 | | 140916a | 1. |
| 3 | 16 Sep 2014 | 13:12 | CAL STD #2 | | 140916a | 1. |
| 4 | 16 Sep 2014 | 13:23 | CAL STD #3 | | 140916a | 1. |
| 5 | 16 Sep 2014 | 13:35 | CAL STD #4 | | 140916a | 1. |
| 6 | 16 Sep 2014 | 13:46 | CAL STD #5 | | 140916a | 1. |
| 7 | 16 Sep 2014 | 13:57 | CAL STD #6 | | 140916a | 1. |
| 8 | 16 Sep 2014 | 14:08 | CAL STD #7 | | 140916a | 1. |
| 9 | 16 Sep 2014 | 14:20 | 140916A ICV | | 140916a | 1. |
| 0 | 16 Sep 2014 | 14:31 | ICB | | 140916a | 1. |

# 300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 4 | 28 Oct 2014 | 08:31 | CCV 141027 | | 141103a | 1. |
| 5 | 28 Oct 2014 | 08:42 | CCB | | 141103a | 1. |
| 6 | 28 Oct 2014 | 08:53 | 141028A LCS | | 141103a | 1. |
| 8 | 28 Oct 2014 | 11:30 | AZ05593W32 DF2 | | 141103a | 2. |
| 15 | 28 Oct 2014 | 12:49 | AZ05593W32 DF2 MS | | 141103a | 2. |
| 16 | 28 Oct 2014 | 13:00 | CCV 141027 | | 141103a | 1. |
| 17 | 28 Oct 2014 | 13:12 | CCB | | 141103a | 1. |
| 18 | 28 Oct 2014 | 13:23 | AZ05593W32 DF2 MSD | | 141103a | 2. |
| 28 | 28 Oct 2014 | 15:16 | CCV 141027 | | 141103a | 1. |
| 29 | 28 Oct 2014 | 15:27 | CCB | | 141103a | 1. |

# 300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 62 | 03 Nov 2014 | 11:16 | CCV 141103 | | 141103a | 1. |
| 63 | 03 Nov 2014 | 11:28 | CCB | | 141103a | 1. |
| 64 | 03 Nov 2014 | 11:39 | 141103A LCS | | 141103a | 1. |
| 68 | 03 Nov 2014 | 12:24 | AZ05593W33 DF10 | | 141103a | 10. |
| 69 | 03 Nov 2014 | 12:35 | AZ05593W33 DF10 MS | | 141103a | 10. |
| 70 | 03 Nov 2014 | 12:46 | AZ05593W33 DF10 MSD | | 141103a | 10. |
| 71 | 03 Nov 2014 | 12:57 | CCV 141103 | | 141103a | 1. |
| 72 | 03 Nov 2014 | 13:09 | CCB | | 141103a | 1. |

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

# Data Validatable Report

December 5, 2014

Parsons
10235 South Jordan Gateway, Suite 300
South Jordan, Utah 84095

Attn: Gene Wright

Title: Report of Data: Case 74924

Project: 749435 Red Hill Phase 1b TO 0068, Hawaii

Contract #: Prime contract for DoD: ESAT Contract N62583-11-D-0515 TO 0068
Battelle Purchase Order # US001-0000434917

Dear Mr. Wright:

Three water samples were received November 13, 2014, in good condition. Written results for the requested analyses are provided on this December 5, 2014.

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

If you have any questions or require further information, please contact your APPL Project Manager, Diane Anderson, danderson@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM v4.2. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/cm
Enclosure
cc: File

Number of pages in this report: 336

# Data Validation Package
# for

# 749435 Red Hill 1b TO 0068

# ARF 74924

# TABLE OF CONTENTS

LABORATORY NAME: *APPL, Inc.*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# SAMPLE RECEIPT INFORMATION

# Sample Receipt Information

ARF: 74924

Project: 749435 Red Hill Phase 1b TO 0068

State Certification Number: CA1312 (DW & WW)

NELAP Certification number: CA00046 (HW)

DoD-ELAP Certificate number: 74807

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

**Sample Receipt Information:**

The water samples were received November 13, 2014 at 4.0°C. The samples were assigned Analytical Request Form (ARF) number 74924. The sample numbers and requested analyses were compared to the chain of custody. No exception was noted.

**Sample Table**

| CLIENT ID | APPL ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| TRIP111214 | AZ07201 | WATER | 11/12/14 | 11/13/14 |
| HW111214-01 | AZ07202 | WATER | 11/12/14 | 11/13/14 |
| HW111214-02 | AZ07203 | WATER | 11/12/14 | 11/13/14 |

The samples and blanks were screened for J-value responses between the detection limit (DL) and limit of quantitation (LOQ).

APPL's laboratory control limits generated in house statistically do not meet the control limits listed in DoD QSM 4.2 for all analytes. Laboratory control spike recoveries for this project meet all control limits listed in the DoD QSM 4.2 except where noted. A copy of our in house generated control limits is available upon request. In addition, a copy of our LOQ control limits, established using 7 data points, are also available upon request.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request.

Measurement uncertainty can be reported upon request.

# CASE NARRATIVE

# EPA Method 8011

**Sample Preparation:**

The water samples were extracted according to EPA method 8011. All holding times were met.

**Sample Analysis Information:**

The samples were analyzed according to the method using an Agilent Gas Chromatograph with a flame ionization detector.

**Quality Control/Assurance**

**Calibrations:**

Initial and continuing calibrations were performed according to the method. All calibration criteria were met.

**Blanks:**

No target analyte was detected above one-half the limit of quantitation (LOQ) in the method blank.

**Spikes:**

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

**Surrogates**

The surrogate recoveries are summarized in the Form 2 & 8. All surrogate recoveries were within the control limits.

**Summary:**

No problem was encountered.

# EPA Method 8260C
# Volatile Organic Compounds

**Sample Preparation:**

The water samples were purged according to EPA method 5030B. All holding times were met.

**Sample Analysis Information:**

The samples were analyzed according to EPA method 8260C using an Agilent Gas Chromatograph with a mass spectrometer detector. The samples were received in unpreserved vials; they were analyzed within seven days of collection. All holding times were met.

**Quality Control/Assurance:**

**Spike Recovery:**

A Laboratory Control Spike (LCS) was used for quality assurance. A second-source standard was used for the LCS. All LCS recoveries were acceptable.

No sample was designated by the client for MS/MSD analysis.

**Surrogates:**

The surrogate recoveries are summarized in the Form 2 & 8. All surrogate recoveries were within the control limits.

**Method blanks:**

No target analyte was detected above one-half the limit of quantitation (LOQ) in the method blank.

**Calibration:**

Initial and continuing calibrations were analyzed according to the method. All calibration criteria were met.

**Tuning:**

The instrument was tuned using BFB. All method criteria were met.

**Internal Standards:**

The internal standard area counts were compared to the mid-point of the initial calibration according to method 8260C. All method criteria were met.

**Summary:**

No analytical exception is noted. All data generated are acceptable.

# Dissolved Methane
# RSK-175

**Sample Preparation and Analysis**

The water samples were analyzed with guidance from RSK-175. The samples were allowed to equilibrate for 10 minutes at 40°C and a portion of the headspace was analyzed using a Hewlett Packard Gas Chromatograph with a flame ionization detector. The samples were received in unpreserved vials; they were analyzed within seven days of collection. All holding times were met.

**Quality Control/Assurance**

**Spike Recovery**

A Laboratory Control Spike (LCS) was used for quality assurance. All acceptance criteria were met.

No sample was designated by the client for MS/MSD analysis.

**Method blanks**

The blank contained no target analyte above one-half the limit of quantitation (LOQ).

**Calibration**

The initial and continuing calibrations were performed with guidance from RSK-175. All acceptance criteria were met.

**Summary:**

No analytical exception is noted.

# Amended Page

# EPA Method 6020A
# Metals

## Sample Preparation Information

The water samples were filtered by laboratory personnel, acidified and digested according to EPA method 3015. No exception was encountered. All holding times were met.

## Analysis Information:

### Samples:

The samples were analyzed for dissolved lead according to EPA method 6020 using an Agilent 7700X ICP-MS.

### Calibrations:

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration acceptance criteria were met.

### Blanks:

No target metal was detected at or above one-half the LOQ in the method blank.

### Spikes:

Laboratory Control Spike (LCS), matrix spikes (MS/MSD), serial dilution test (DT), and post digestion spike (PDS) were used for quality assurance. All acceptance criteria were met in the LCS.

Sample HW111214-02 was selected by the laboratory as the QC sample for the analytical batch. The DT was not applicable. All acceptance criteria were met in the MS/MSD and PDS.

### Internal Standards:

All method criteria were met for the internal standards.

## Summary:

No analytical exception is noted. All data are acceptable.

# EPA Methods 353.2, 9056 and SM 2320B

# Nitrate-Nitrite-N, Sulfate, and Alkalinity

**Sample Preparation Information:**

The water samples were prepared according to the methods.

**Analysis Information:**

**Samples:**

The samples were analyzed according to the methods. A Dionex DX500 ion chromatograph was used for the EPA 9056 analysis. A Lachat was used for the EPA 353.2 analysis. All holding times were met.

**Calibrations:**

Calibrations were performed according to the methods for the initial calibration and the initial calibration verification. The initial calibration verification is prepared from a second source standard. All calibration criteria were met.

**Blanks:**

No target analyte was detected above one-half the LOQ in the method blanks.

**Spikes:**

Laboratory Control Spikes (LCS and/or LCS/LCSD) were used for quality assurance. All recoveries were within acceptance limits in the LCS and/or LCS/LCSD.

No sample was designated by the client for MS/MSD analysis.

**Summary:**

No analytical exception is noted. All data are acceptable.

# APPL Inc.
# Abbreviations and Flags

| FLAG | DESCRIPTION |
|---|---|
| # | Recovery or RPD outside control limits |
| * | Recovery or RPD outside control limits |
| B | Analyte detected in associated method blank |
| C1 | Reason for correction: wrote incorrect response |
| C2 | Reason for correction: calculated incorrectly |
| C3 | Reason for correction: needs to be rechecked |
| C4 | Reason for correction: data not usable |
| DO | Diluted out |
| E | Exceeds linear range |
| F | Estimated value |
| G1 | Includes a wide range of hydrocarbons which does not match our gasoline standard |
| G10 | Includes a match to hydrocarbon profiles within the range of mineral spirits |
| G11 | Includes a match to hydrocarbon profiles within the range of JP-4 |
| G12 | Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8 |
| G13 | Closely resembles the hydrocarbon profile of aviation gasoline |
| G14 | Analyte concentration may be biased due to carry over |
| G2 | Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline |
| G3 | Includes higher boiling hydrocarbons |
| G4 | Includes dominant peak(s) not indicative of petroleum hydrocarbons |
| G5 | Is mainly dominant peak(s) not indicative of petroleum hydrocarbons |
| G6 | Contains recognizable contaminant peak(s) which has been removed from quantitation |
| G7 | Is mainly a match to hydrocarbons within the range of gasoline |
| G8 | Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline |
| G9 | Includes hydrocarbons within the range of kerosene |
| J | Estimated value |
| M | Matrix effect |
| MI1 | Manual integration: integration does not follow baseline |
| MI2 | Manual integration: non-target peak interference |
| MI3 | Manual integration: to split a peak that was integrated as one peak by the computer. |
| MI4 | Manual integration: to integrate a split peak |
| MI5 | Manual integration: the whole peak or part of the peak was not integrated |
| MI6 | Manual integration: computer integrated wrong peak |
| MI7 | Manual integration: other – (See case narrative) |
| MDL | Method detection limit |
| ND | Not detected |
| NT | Non-target |
| Q | Acceptance criteria not met |
| T1 I | Includes wide range of hydrocarbons not indicative of diesel |
| T1 M | Is mainly wide range of hydrocarbons not necessarily indicative of diesel |
| T2 I | Includes lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas |
| T2 M | Is mainly lower boiling hydrocarbons, i.e. mineral spirits, kerosene, stoddard solvent, white gas |
| T3 I | Includes higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel |
| T3 M | Is mainly higher boiling hydrocarbons, i.e. asphaltene, waster oil, motor oil, or weathered diesel fuel |
| T4 I | Includes dominant peak(s) not indicative of hydrocarbons |
| T4 M | Is mainly dominant peak(s) not indicative of hydrocarbons |
| T5 | Contains recognizable contaminant peak(s) which has been removed from quantitation |
| T6 | Is mainly a match to hydrocarbons within range of diesel fuel |
| T7 | Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel |
| T8 | Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel |
| T9 I | Includes non-diesel hydrocarbons within boiling point range of diesel fuel |
| T9 M | Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel |
| U | Not detected |
| Y | Percent difference between primary and confirmation column > 40% |

# CHAIN OF CUSTODY,
# ARF, CRF, AND
# CLIENT COMMUNICATION

# APPL - Analysis Request Form

74924

Client: Parsons
Address: 10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095
Attn: Gene Wright
Phone: 801-553-3317 Fax:
Job: 749435 Red Hill Phase 1b TO 0068
PO #: PO#434917
Chain of Custody (Y/N): Y # 47921
RAD Screen (Y/N): Y pH (Y/N): Y
Turn Around Type: 2 WEEKS

Received by: YL
Date Received: 11/13/14 Time: 10:20
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -10
Chest Temp(s): 4.0°C
Color: VOA,C-BLK,R-ORGYEL
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Diane Anderson
QC Report Type: DVP4/NEDD/NIRIS/HI
Due Date: 11/27/14

Comments:
*pdf ARF and prelims to gene.wright@parsons.com & scalac@battelle.org*
*10 business days for form 1s; 21 calendar days for final DVP with Internal COC.*
*send 1 hardcopy DVP4 and PDF bookmarked on CD to Gene;*
*pdf via email or ftp to scalac@battelle.org*
*Guidance: DoD QSMv4.2; DoD forms U flag at LOD, LOD database*
*EDD: NEDD/NIRIS to gene.wright@parsons.com & scalac@battelle.org*
*8011 = EDB & DBCP only; RSK = Methane only*

Sample Distribution:
**GC: 2-$8011**
**Extractions: 2- MWE012**
**VOA: 3-$86CREDW, 2-$RSK50**
**Metals: 2-$62A14WD(Pb)**
**Wetlab: 2-$232W(ALK), 2-$35OF, 2-$9056DOD(SO4)**
**Other: 2- M3015L**

Charges:

Invoice To:
**BATTELLE MEMORIAL INSTITUTE**
**accountspayable@battelle.org**
**505 King Ave**
**Columbus OH 43201-2696**

| | Client ID | APPL ID | Sampled | Analyses Requested |
|---|---|---|---|---|
| 1. | TRIP111214 | AZ07201W | 11/12/14 09:30 | $86CREDW -- unpreserved VOA 7day HT; LL VOCs |
| 2. | HW111214-01 | AZ07202W | 11/12/14 10:00 | $232W(ALK), $35OF, $62A14WD(Pb), $8011, $86CREDW, $9056DOD(SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs |
| 3. | HW111214-02 | AZ07203W | 11/12/14 10:15 | $232W(ALK), $35OF, $62A14WD(Pb), $8011, $86CREDW, $9056DOD(SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs |

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -10 UTC

# APPL Sample Receipt Form

ARF# **74924**

| Sample | Container Type | Count | pH |
|---|---|---|---|
| **AZ07201** | 15 VOAs - NP | 3 | NA |
| **AZ07202** | 2 PL 500mL | 1 | NA |
| | 3 PL 250mL | 1 | NA |
| | 29 PL 125mL - H2SO4 | 1 | 1.7 |
| | 15 VOAs - NP | 9 | NA |
| **AZ07203** | 2 PL 500mL | 1 | NA |
| | 3 PL 250mL | 1 | NA |
| | 29 PL 125mL - H2SO4 | 1 | 1.7 |
| | 15 VOAs - NP | 9 | NA |

| Sample | Container Type | Count | pH |
|---|---|---|---|

74924
4.0

APPL LABS

APPL, Inc.
908 N Temperance Ave
Clovis, CA 93611

Phone: (559) 275-2175
Fax: (559) 275-4422

# CHAIN OF CUSTODY RECORD

C.O.C. 47921

Report to: PLEASE PRINT

Company Name: Battelle
Phone: 215-504-5003
Address: 301 South State St., Ste. N001
Newtown, PA 18940
Fax: 614-458-6620
Attn: Carolyn Scala

Invoice to: PLEASE PRINT

Company Name: Battelle
Phone: 215-504-5003
Address: 301 South State St., Ste. N001
Newtown, PA 18940
Fax: 614-458-6620
Attn: Carolyn Scala

Project Name/Number: Red Hill Phase 1b
Purchase Order Number:
Sampler (Print): James Terry
Sampler (Signature): James Terry

Date Shipped: 11/12/14
Carrier: FEDEX
Waybill No.:
Comments:

| Sample Identification | Location | Date Collected | Time Collected | Time Zone | No. of Containers | Matrix: Aq | Matrix: Sed. | Matrix: Soil | | Analysis Requested/Method Number: VOCs (SW 8260B) | EDB (SW8011) | Methane (RSK 175) | Alkalinity and Bicarbonate | Nitrate/Nitrite as N (EPA 353.2) | Dissolved Lead (SW6020) | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRIP111214 | | 11/12/14 | 0930 | Hi | 3 | X | | | | X | | | | | | | | | | | * dissolved lead |
| HW111214-01 | 99-048 Kaahumanu Hwy Fire Hydrant | ↓ | 1000 | ↓ | 11 | X | | | | X | X | X | X | X | X | | | | | | sample not field |
| HW111214-02 | ↓ | ↓ | 1015 | ↓ | 11 | X | | | | X | X | X | X | X | X | | | | | | filtered. |

Shuttle Temperature:

Turnaround Requested: Check one
☒ Standard 2-3 wk ☐ One week ☐ 24/48 Hrs. ☐ Other

Sample Disposal:
☐ Return to client ☒ Disposal by Lab (30-day retention)

| Relinquished by: | Date | Time | Received by: | Relinquished by: | Date | Time | Received by: |
|---|---|---|---|---|---|---|---|
| James Terry / James Terry | 11/12/14 | 1400 | | | | | |
| Relinquished by: | Date | Time | Received by: | Relinquished by: | Date 11/13/14 | Time 10:20 | Received at lab by: Yang |

White: Return to client with report  Yellow: Laboratory Copy  Pink: Sampler

*See reverse side for Container Preservative and Sampling Information*

**COOLER RECEIPT FORM** **ARF: 74924**

1) Project: Red Hill Phase 1b Date Received: 11/13/14

**2) Coolers:** Number of Coolers: 1

3) YES Were custody seals present and intact?
How many? 2 Name/Date on seal? SEE BELOW

4) YES Was there a shipping slip? Carrier name: FED EX

5) Type of packing in cooler: X bubble wrap __ popcorn __ foam X plastic bags
X wet ice __ dry ice __ no ice __ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use A39267

8) Cooler temp(s): In °C
1: 4.0 2: ____ 3: ____ 4: ____ 5: ____ 6: ____
7: ____ 8: ____ 9: ____ 10: ____ 11: ____ 12: ____

**Chain of custody:**

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

**Sample Labels:**

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

**Sample Containers:**

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) Yes Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea: ____
Smaller than a pea: AZ07201W03

**Preservation Hold time:**

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) Yes Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) Yes Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) Yes Were unpreserved VOA Vials received? RS 11/14/15

23) Yes Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: 90B2031
Lab notified if pH was not adequate: METALS FILTER & PRESERVE. JR 11-13-14

CUSTODY SEAL
APPL, Inc. (209) 275-2175
Initials JT Date 11/12/14

Notes/Deficiencies:

Personnel receiving samples: BB Second reviewer: RBP
Personnel labeling samples: ____
Project manager notified: ____ Date/Time of notification ____
Name of client notified: ____ Date/Time of notification ____

# 8011
# for
# DBCP & EDB Fumigants

APPL, INC.

# 8011
# for
# DBCP & EDB Fumigants
# QC Summary

APPL, INC.

# Method Blank
## EPA 8011

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141118W-07202 - 192306**
Batch ID: #8011-141118A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 11/18/14 | 11/19/14 |
| BLANK | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 11/18/14 | 11/19/14 |
| BLANK | SURROGATE: 1,3-DIBROMOPRO | 94.6 | 70-132 | | | % | 11/18/14 | 11/19/14 |

Quant Method:80111118.M
Run #:1111350
Instrument:Herbie
Sequence:141111
Initials:MA

*GC SC-Blank-REG MDLs*
*Printed: 11/25/14 12:08:19 PM*

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 74924
Matrix: WATER

SDG No: 74924
Date Analyzed: 11/19/14
Instrument: Herbie

| APPL ID. | Client Sample No. | SURROGATE: 1,3-DIBROMOPROPANE (S) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141118A-BLK | Blank | 70-132 | 94.6 | | | | |
| 141118A-LCS | Lab Control Spike | 70-132 | 105 | | | | |
| AZ07202 | HW111214-01 | 70-132 | 83.0 | | | | |
| AZ07203 | HW111214-02 | 70-132 | 76.1 | | | | |

Comments: Batch: #8011-141118A

*Printed: 11/25/14 12:08:19 PM*
*Form 2 & 8, Surrogate Recovery Summary*

# Laboratory Control Spike Recovery
## EPA 8011

APPL ID: **141118W-07202 LCS - 192306**
Batch ID: #8011-141118A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| DBCP | 0.482 | 0.572 | 119 | 60-140 |
| EDB | 0.482 | 0.524 | 109 | 60-140 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | 0.368 | 105 | 70-132 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | 80111118.M |
| Extraction Date : | 11/18/14 |
| Analysis Date : | 11/19/14 |
| Instrument : | Herbie |
| Run : | 1111351 |
| Initials : | MA |

*Printed: 11/25/14 12:08:20 PM*
*APPL Standard LCS*

# 8011

Form 4

## Blank Summary

Lab Name: APPL, Inc.
Case No: 74924
Matrix: WATER
Blank ID: 141118A-BLK

SDG No: 74924
Date Analyzed: 11/19/14
Instrument: Herbie
Time Analyzed: 1043

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141118A-BLK | Blank | 1111350 | 11/19/14 1043 |
| 141118A-LCS | Lab Control Spike | 1111351 | 11/19/14 1103 |
| AZ07202 | HW111214-01 | 1111353 | 11/19/14 1143 |
| AZ07203 | HW111214-02 | 1111354 | 11/19/14 1203 |

Comments: Batch: #8011-141118A

*Printed: 11/25/14 12:08:23 PM*
*Form 4, Blank Summary*

# 8011
# for
# DBCP & EDB Fumigants
# Sample Data

APPL, INC.

# EPA 8011

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-01**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07202**
QCG: #8011-141118A-192306

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| 8011 | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 11/18/14 | 11/19/14 |
| 8011 | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 11/18/14 | 11/19/14 |
| 8011 | SURROGATE: 1,3-DIBROMOPROPANE | 83.0 | 70-132 | | | % | 11/18/14 | 11/19/14 |

Quant Method: 80111118.M
Run #: 1111353
Instrument: Herbie
Sequence: 141111
Dilution Factor: 1
Initials: MA

*Printed: 11/25/14 12:08:24 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111353.D\ECD1A.CH Vial: 53
Signal #2 : G:\HERBIE\DATA\141111\1111353.D\ECD2B.CH
Acq On : 11-19-14 11:43:57 Operator:
Sample : AZ07202W07 2/34.01G Inst : Herbie
Misc : water Multiplr: 1.03
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:40 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 25 11:29:34 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

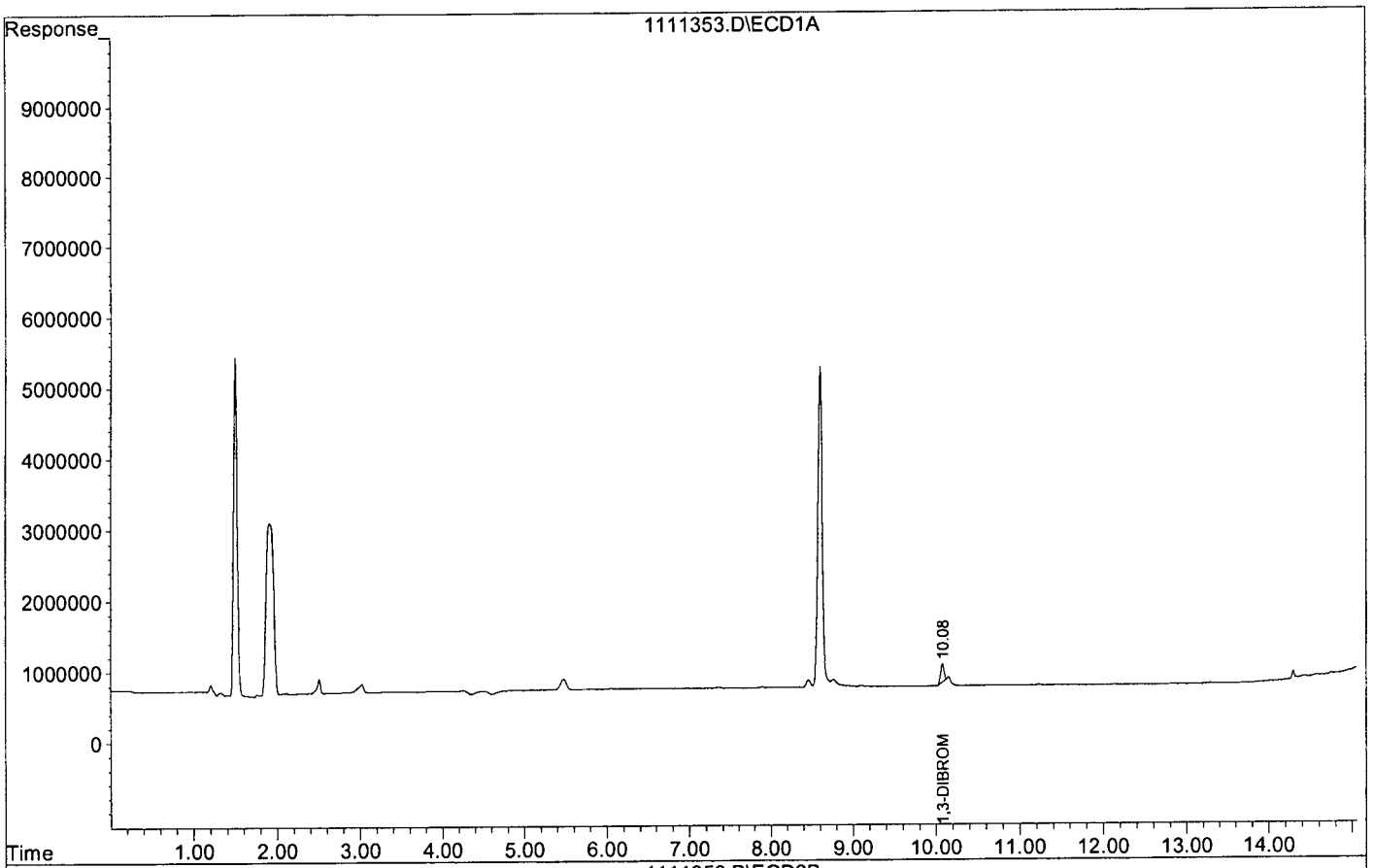
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 255694 | 383717 | 0.299 | 0.360 |
| Spiked Amount 0.360 | | | Recovery | = | 83.01% | 99.95% |
| Target Compounds | | | | | | |
| Target Compounds | | | | | | |
| 1) TM EDB | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |
| 2) TM 1,2,3-TCP | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |
| 4) TM DBCP | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |

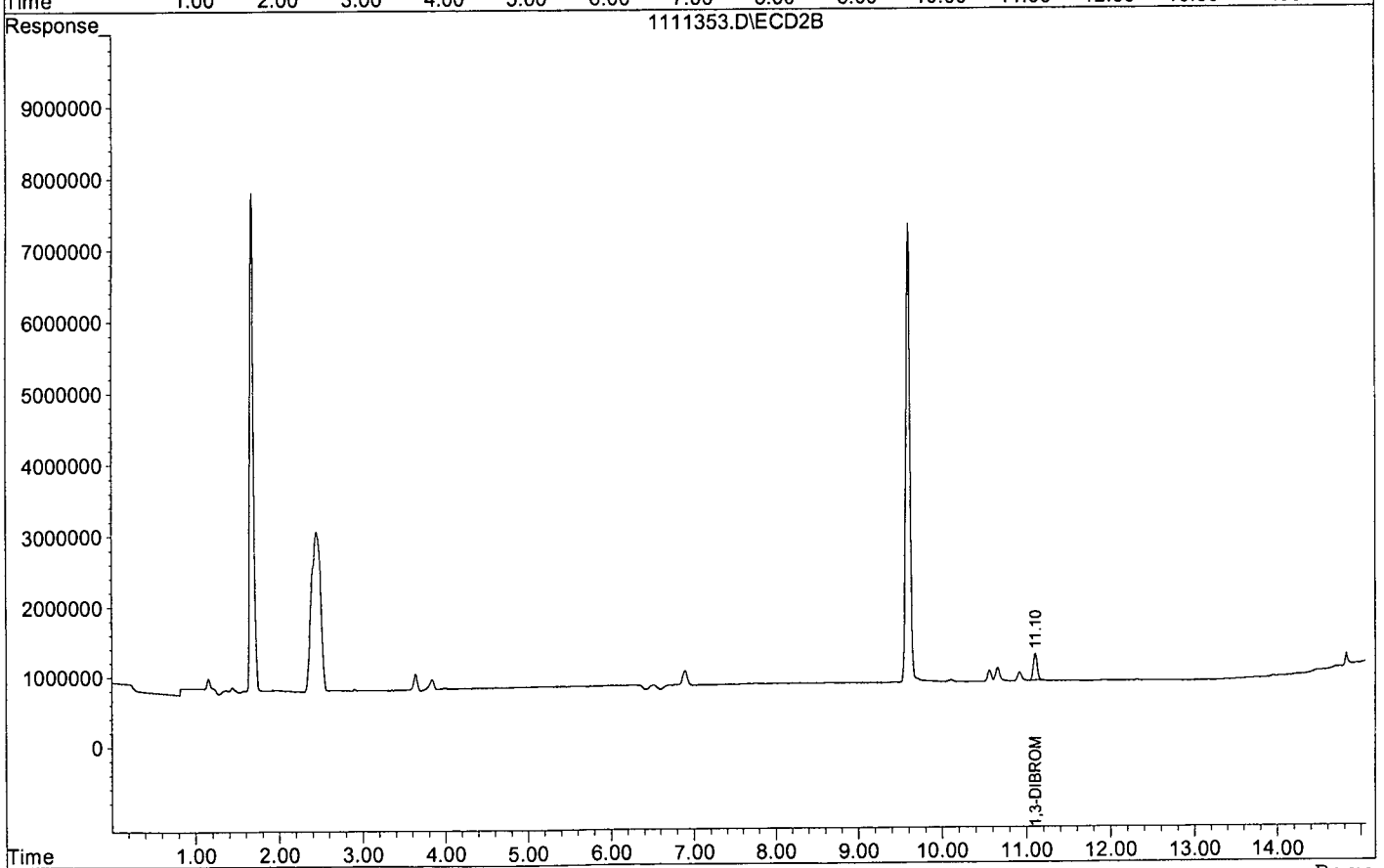
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\141111\1111353.D
Acq On : 11-19-14 11:43:57
Sample : AZ07202W07 2/34.01G
Misc : water
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 53
Operator:
Inst : Herbie
Multiplr: 1.03



# EPA 8011

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-02**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07203**
QCG: #8011-141118A-192306

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| 8011 | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 11/18/14 | 11/19/14 |
| 8011 | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 11/18/14 | 11/19/14 |
| 8011 | SURROGATE: 1,3-DIBROMOPROPANE | 76.1 | 70-132 | | | % | 11/18/14 | 11/19/14 |

Quant Method: 80111118.M
Run #: 1111354
Instrument: Herbie
Sequence: 141111
Dilution Factor: 1
Initials: MA

*Printed: 11/25/14 12:08:24 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111354.D\ECD1A.CH Vial: 54
Signal #2 : G:\HERBIE\DATA\141111\1111354.D\ECD2B.CH
Acq On : 11-19-14 12:03:56 Operator:
Sample : AZ07203W07 2/34.80G Inst : Herbie
Misc : water Multiplr: 1.01
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:40 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 25 11:29:34 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

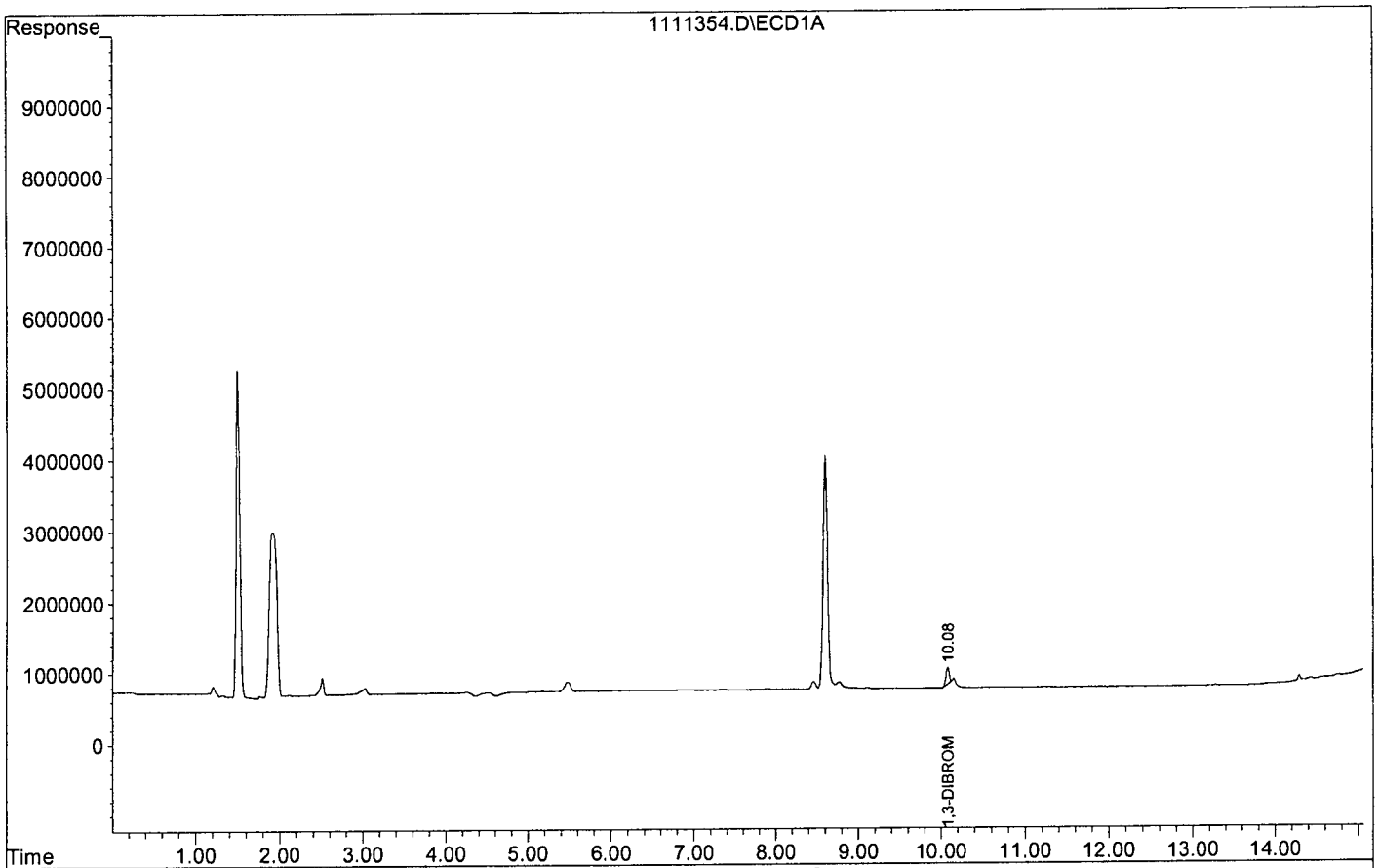
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 234482 | 349734 | 0.268 | 0.321 |
| Spiked Amount 0.352 | | | Recovery | = | 76.13% | 91.19% |
| Target Compounds | | | | | | |
| Target Compounds | | | | | | |
| 1) TM EDB | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |
| 2) TM 1,2,3-TCP | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |
| 4) TM DBCP | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |

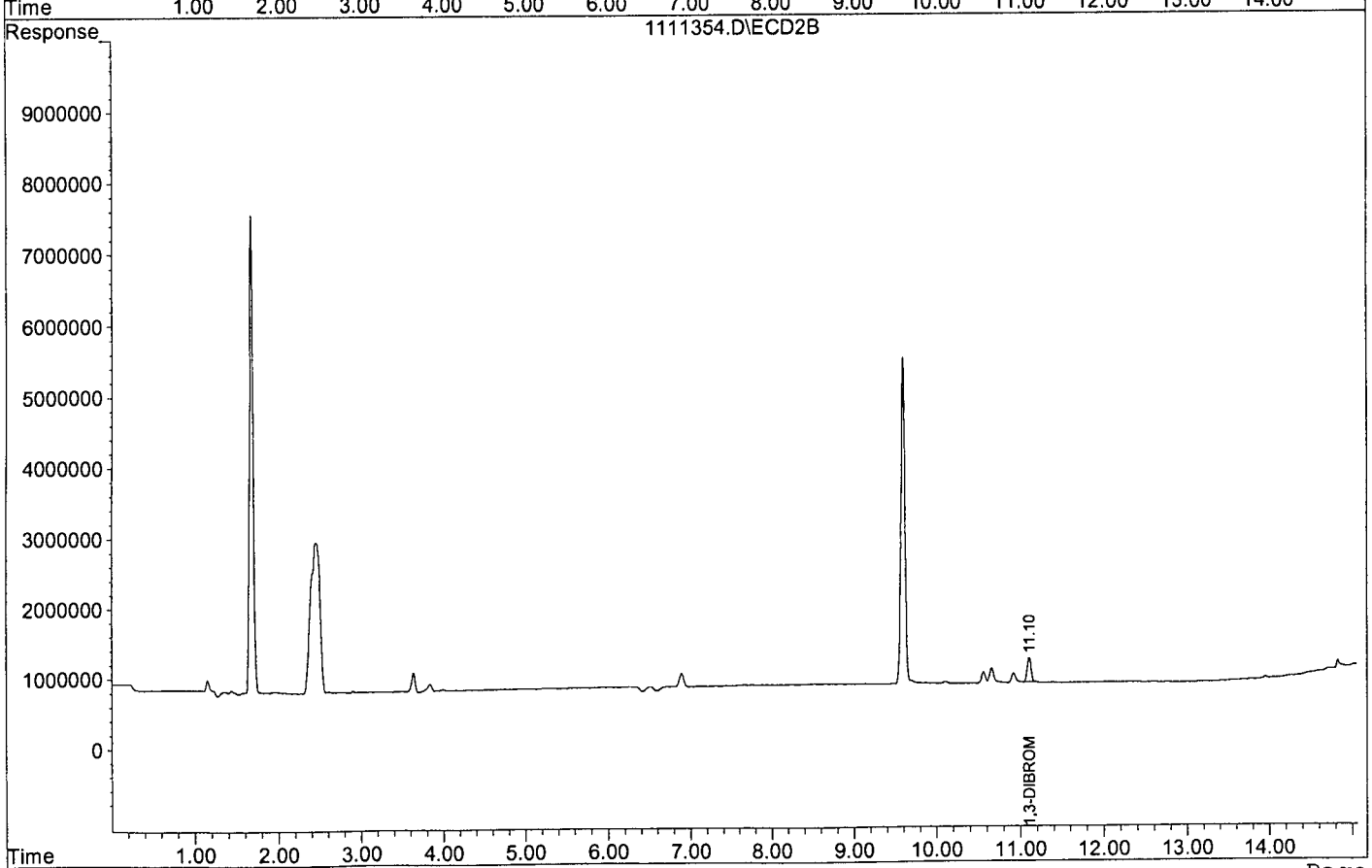
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\141111\1111354.D
Acq On : 11-19-14 12:03:56
Sample : AZ07203W07 2/34.80G
Misc : water
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 54
Operator:
Inst : Herbie
Multiplr: 1.01



# 8011
# for
# DBCP & EDB Fumigants
# Calibration Data

APPL, INC.

DBCP/EDB/1,2,3-TCP Analysis by
8011 1118

## Form 6
## Initial Calibration

Lab Name: APPL, Inc. SDG No: 74924
Case No: Initial Cal. Date: 11/19/14
Matrix: Water Instrument: Herbie Initials: MA

| | | Compound | 1 | 2 | 3 | 4 | 5 | 6 | | | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1111344.D | 1111345.D | 1111346.D | 1111347.D | 1111348.D | 1111349 D | | | | | | | | |
| 1 | TM | EDB | 674412 | 592279 | 543871 | 519088 | 516049 | 476287 | | | | | 553664 | 13 | TM | |
| 2 | TM | 1,2,3-TCP | 39765 | 127945 | 122916 | 117973 | 116062 | 108419 | | | | | 105513 | 31 | TM | NT |
| 3 | S | 1,3-DIBROMOPROPANE(S) | 506647 | 460485 | 440393 | 421149 | 424575 | 386762 | | | | | 440002 | 9.3 | S | |
| 4 | TM | DBCP | 1673235 | 1469307 | 1475613 | 1427234 | 1470234 | 1345545 | | | | | 1476861 | 7.3 | TM | |
| 5 | | Signal #2 | | | | | | | | | | | | | | |
| 6 | TM | EDB #2 | 994824 | 823822 | 791619 | 784595 | 784626 | 747574 | | | | | 821177 | 11 | TM | |
| 7 | TM | 1,2,3-TCP #2 | 181118 | 164237 | 159480 | 154664 | 155352 | 142949 | | | | | 159633 | 7.9 | TM | |
| 8 | S | 1,3-DIBROMOPROPANE(S) #2 | 534000 | 586283 | 544545 | 550081 | 556843 | 517593 | | | | | 548224 | 4.2 | S | |
| 9 | TM | DBCP #2 | 2352206 | 2585261 | 2589821 | 2644056 | 2692506 | 2523248 | | | | | 2564516 | 4.6 | TM | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | |

2.5145884

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111344.D\ECD1A.CH Vial: 44
Signal #2 : G:\HERBIE\DATA\141111\1111344.D\ECD2B.CH
Acq On : 11-19-14 8:44:20 Operator:
Sample : 504-1 2/33.88G 11/18/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:27 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Wed Nov 12 09:56:39 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

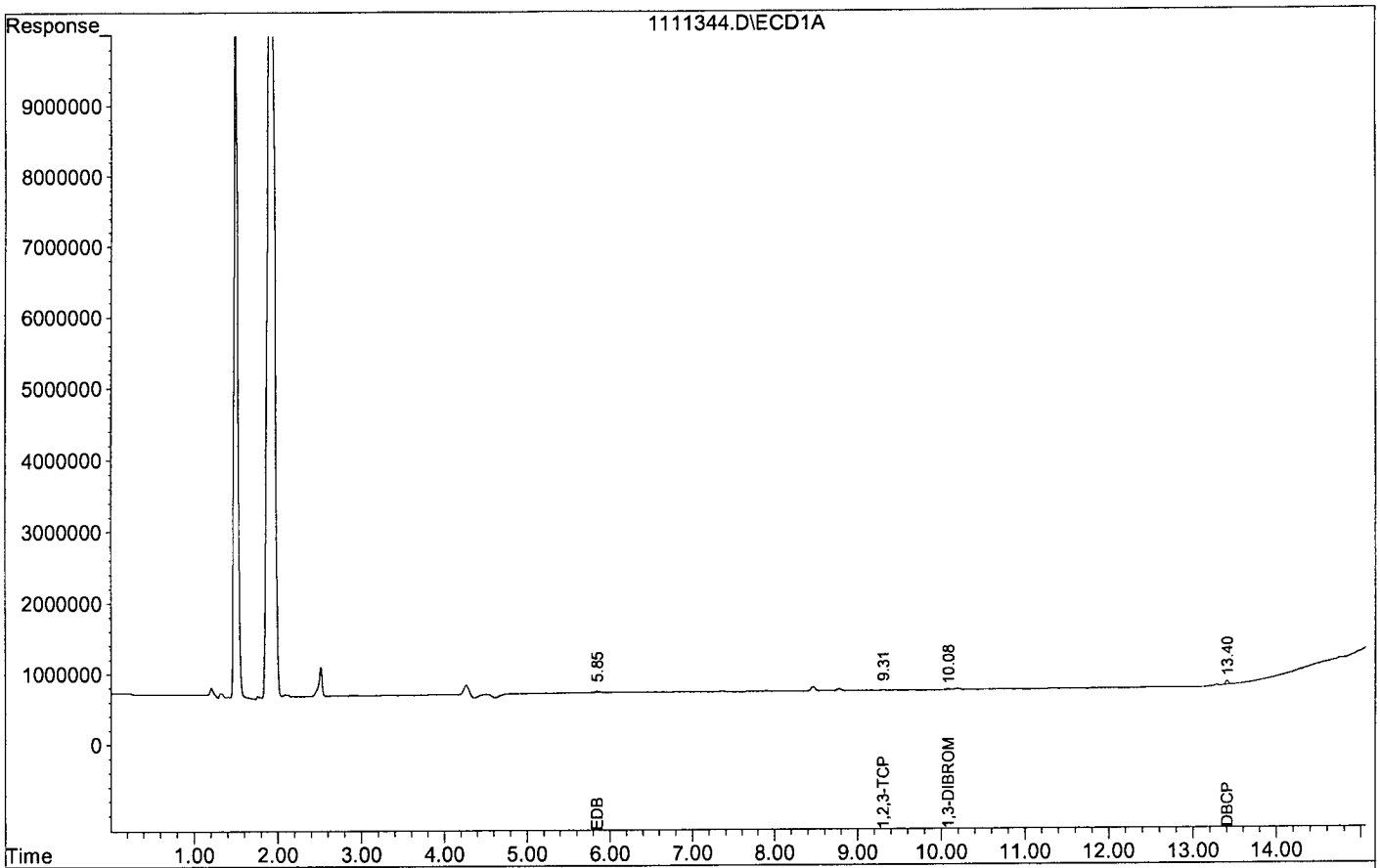
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 17226 | 18156 | 0.021 | 0.017 |
| Spiked Amount 0.350 | | | Recovery | = | 6.00% | 4.86% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.85 | 7.28 | 22930 | 33824 | 0.022 | 0.020 |
| 2) TM 1,2,3-TCP | 9.31 | 10.52 | 1352 | 6158 | 0.006 | 0.019 # |
| 4) TM DBCP | 13.40 | 14.13 | 56890 | 79975 | 0.020 | 0.014 # |
| Target Compounds | | | | | | |

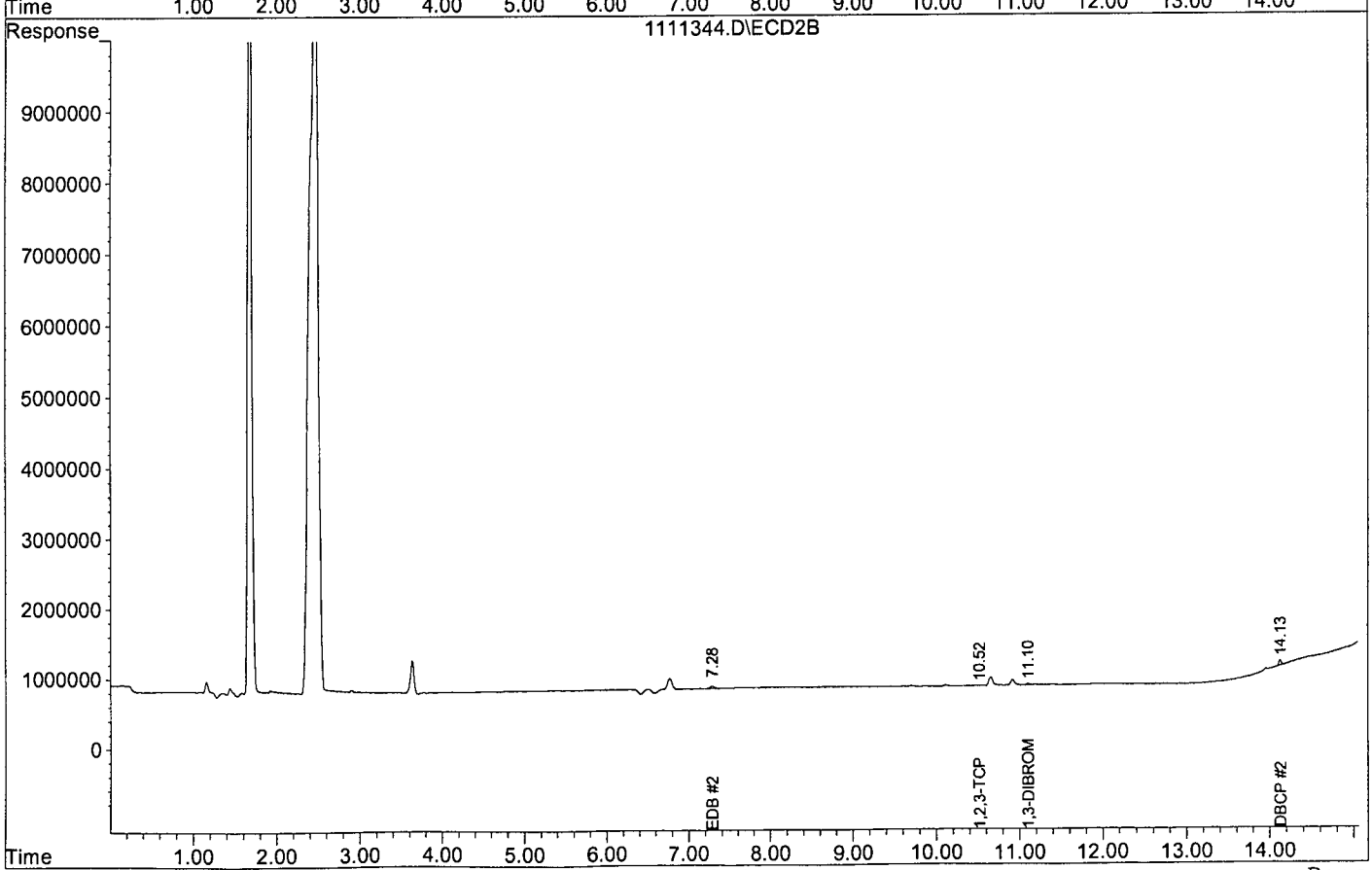
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\141111\1111344.D
Acq On : 11-19-14 8:44:20
Sample : 504-1 2/33.88G 11/18/14
Misc :
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 44
Operator:
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111345.D\ECD1A.CH Vial: 45
Signal #2 : G:\HERBIE\DATA\141111\1111345.D\ECD2B.CH
Acq On : 11-19-14 9:04:08 Operator:
Sample : 504-2 2/33.35G 11/18/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:27 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Wed Nov 12 09:56:39 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 209981 | 267345 | 0.253 | 0.251 |
| Spiked Amount 0.350 | | | Recovery | = | 72.29% | 71.71% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 270079 | 375663 | 0.254 | 0.228 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 58343 | 74892 | 0.257 | 0.229 |
| 4) TM DBCP | 13.40 | 14.13 | 670004 | 1178879 | 0.232 | 0.207 |

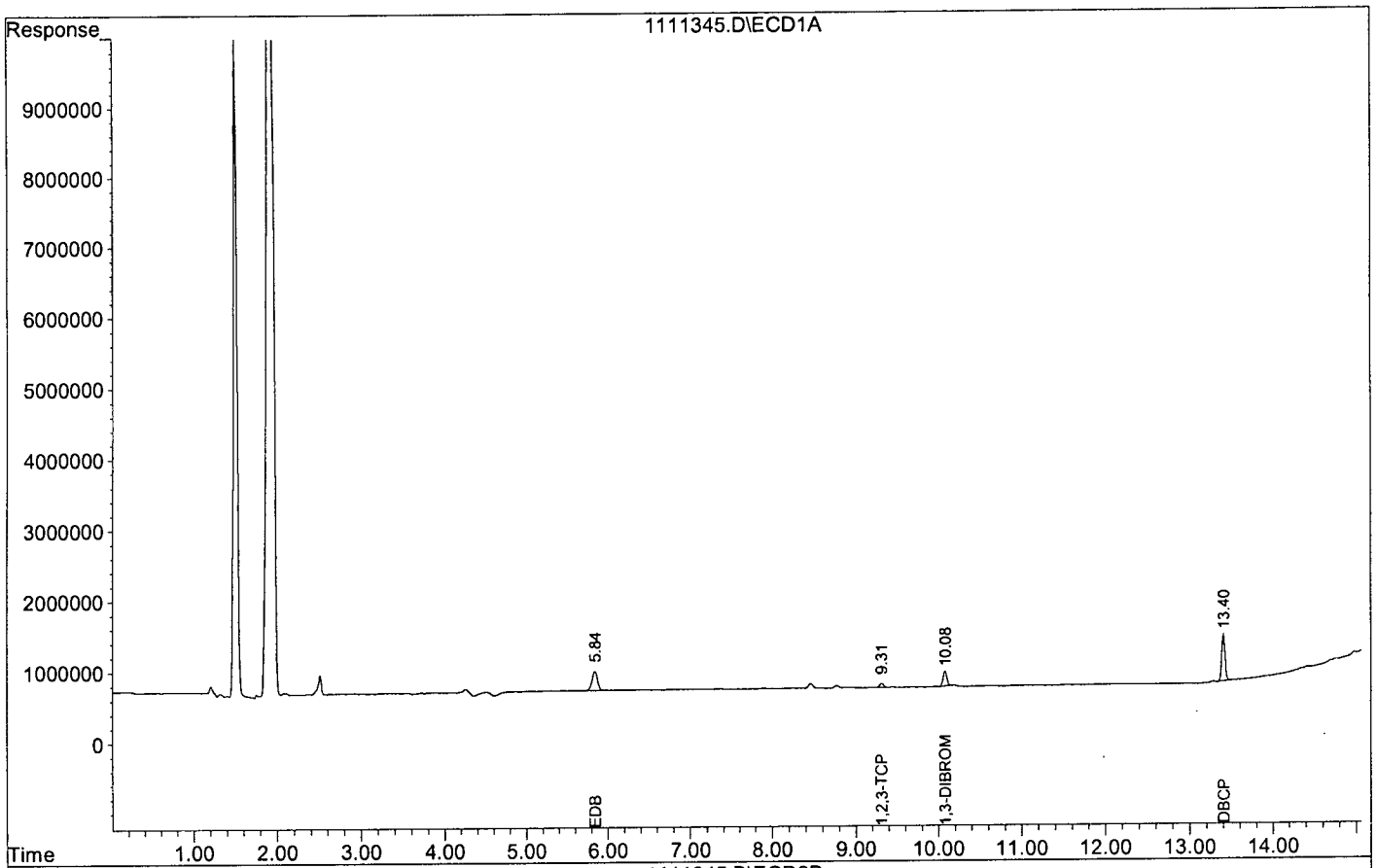
Target Compounds

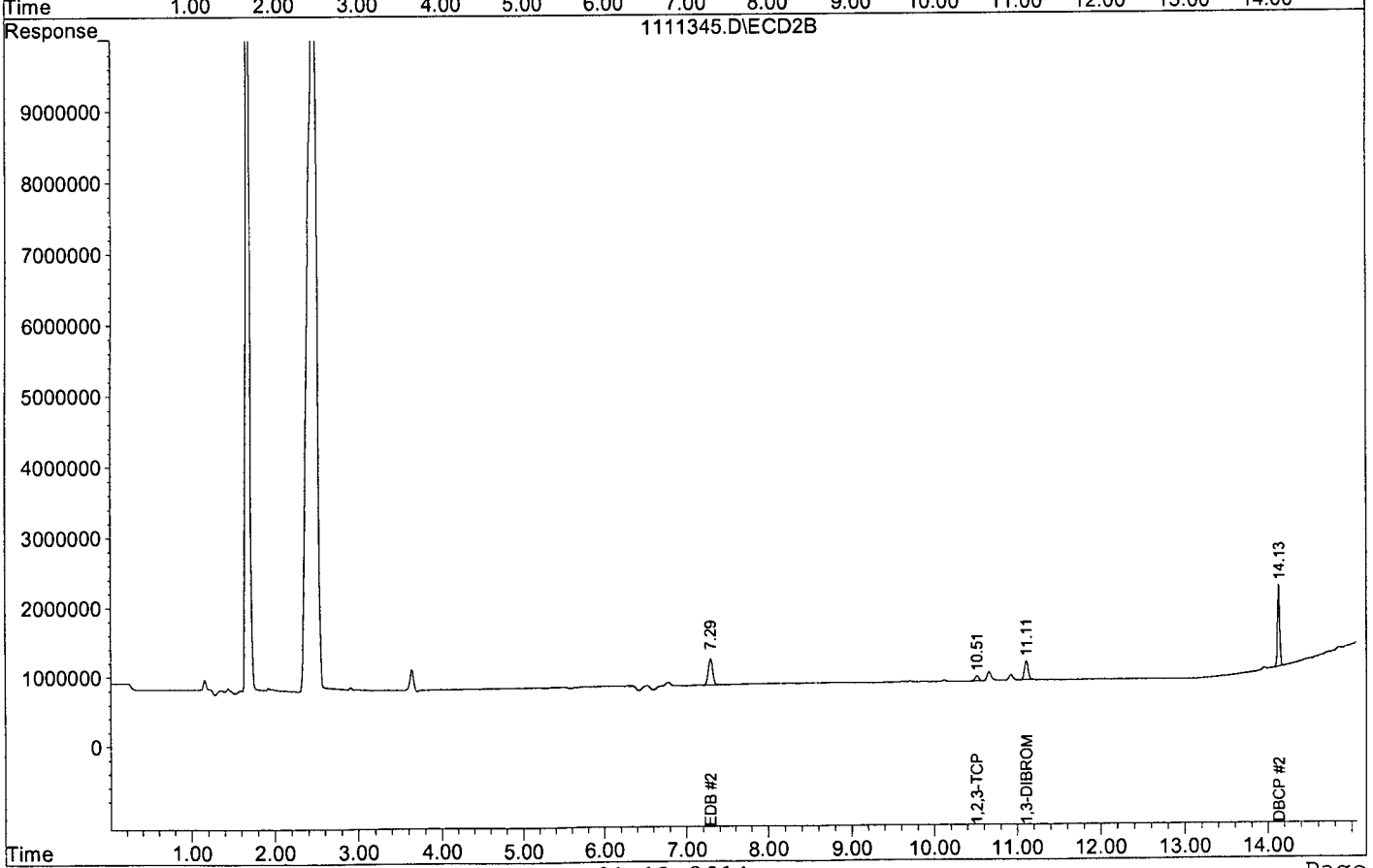
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111345.D
Acq On : 11-19-14 9:04:08
Sample : 504-2 2/33.35G 11/18/14
Misc :
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 45
Operator:
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111346.D\ECD1A.CH Vial: 46
Signal #2 : G:\HERBIE\DATA\141111\1111346.D\ECD2B.CH
Acq On : 11-19-14 9:24:00 Operator:
Sample : 504-3 2/33.09G 11/18/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:27 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Wed Nov 12 09:56:39 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

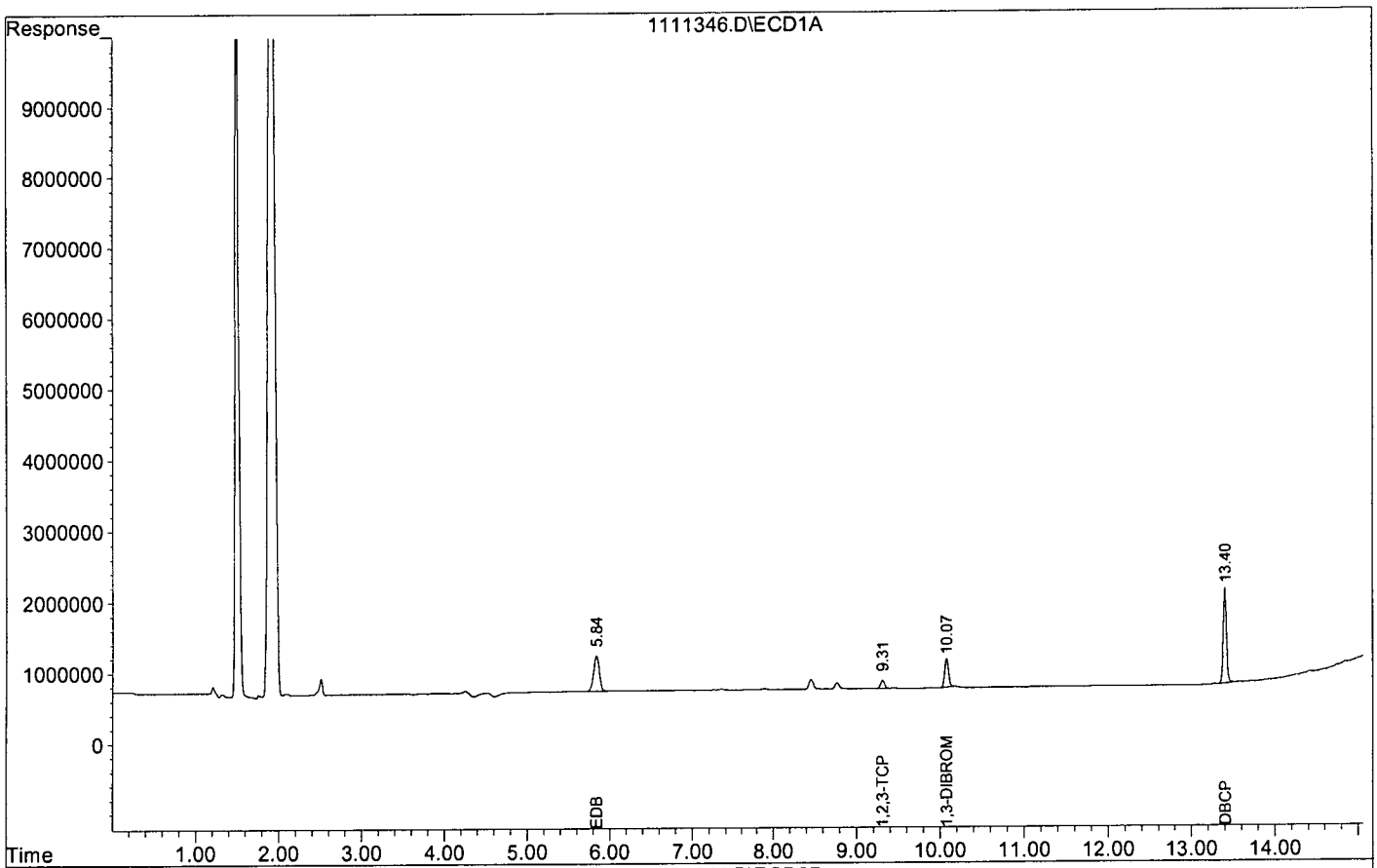
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.10 | 402519 | 497714 | 0.484 | 0.467 |
| Spiked Amount 0.350 | | | Recovery | = | 138.29% | 133.43% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 497098 | 723540 | 0.468 | 0.438 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 112345 | 145765 | 0.495 | 0.446 |
| 4) TM DBCP | 13.40 | 14.13 | 1348710 | 2367096 | 0.468 | 0.417 |
| Target Compounds | | | | | | |

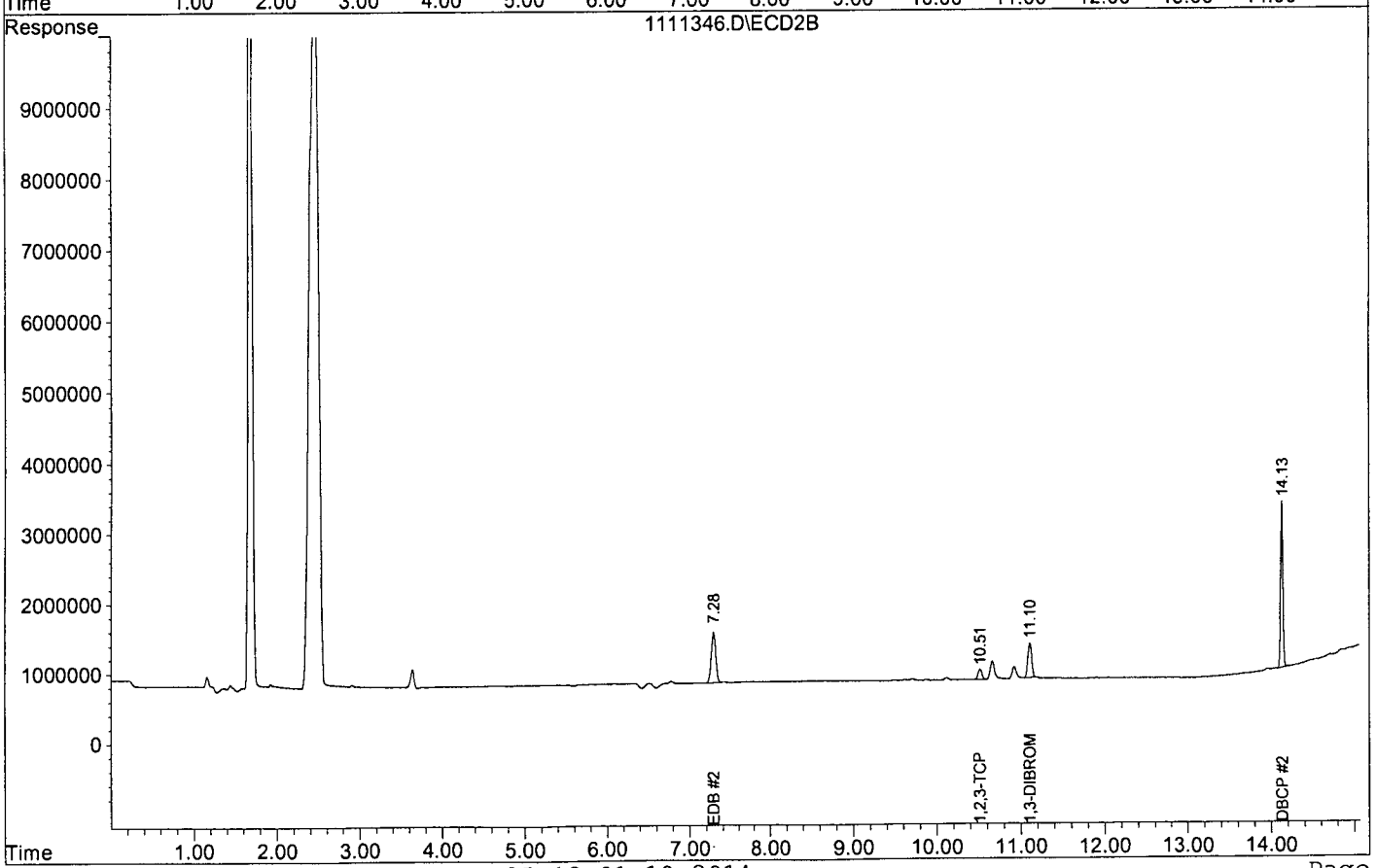
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111346.D
Acq On : 11-19-14 9:24:00
Sample : 504-3 2/33.09G 11/18/14
Misc :
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 46
Operator:
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111347.D\ECD1A.CH Vial: 47
Signal #2 : G:\HERBIE\DATA\141111\1111347.D\ECD2B.CH
Acq On : 11-19-14 9:43:56 Operator:
Sample : 504-4 2/30.81G 11/18/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:27 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Wed Nov 12 09:56:39 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.10 | 576974 | 753611 | 0.694 | 0.707 |
| Spiked Amount 0.350 | | | Recovery | = | 198.29% | 202.00% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 711150 | 1074895 | 0.670 | 0.651 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 161623 | 211889 | 0.712 | 0.648 |
| 4) TM DBCP | 13.40 | 14.13 | 1955311 | 3622357 | 0.678 | 0.638 |

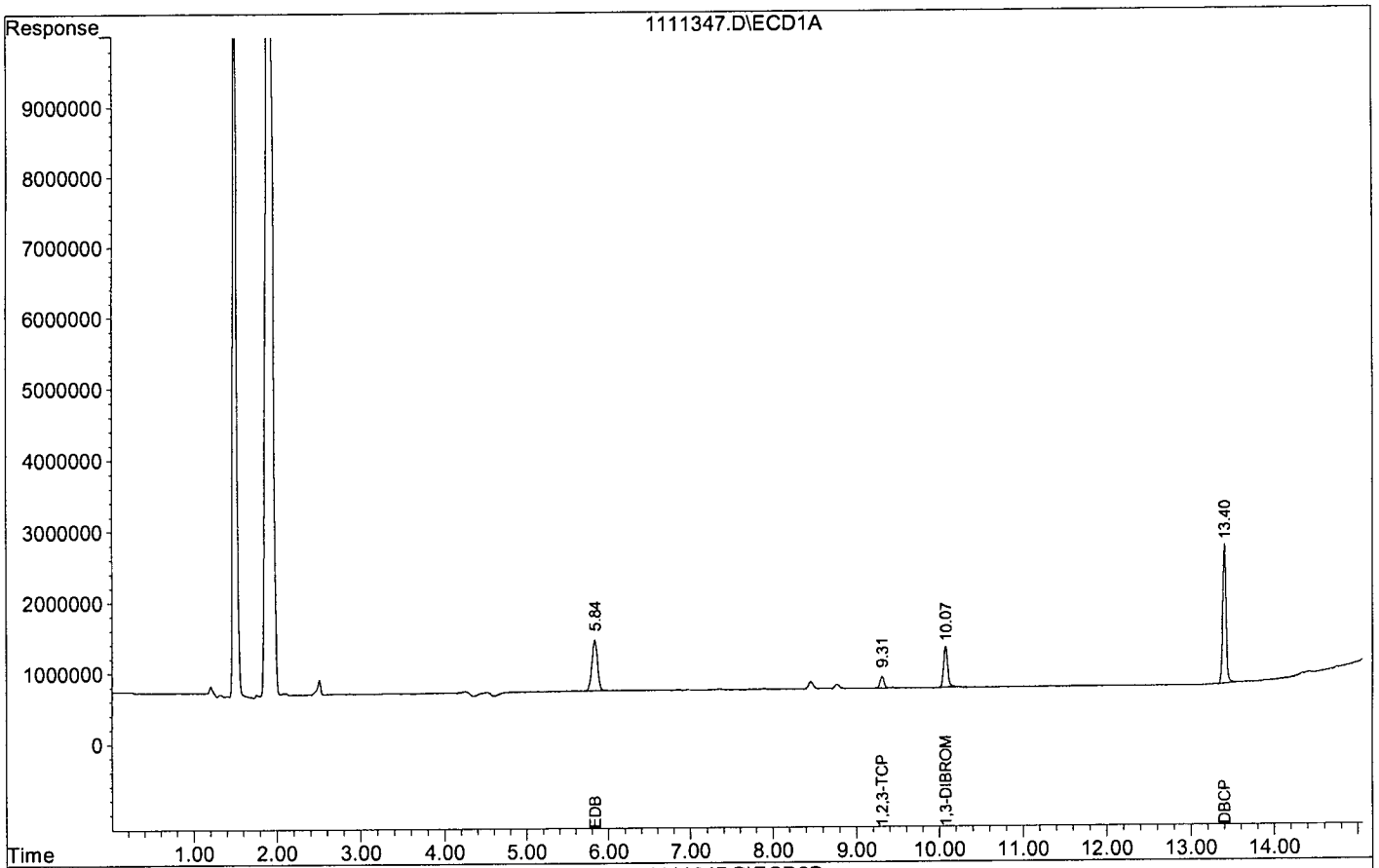
Target Compounds

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111347.D
Acq On : 11-19-14 9:43:56
Sample : 504-4 2/30.81G 11/18/14
Misc :
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 47
Operator:
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111348.D\ECD1A.CH Vial: 48
Signal #2 : G:\HERBIE\DATA\141111\1111348.D\ECD2B.CH
Acq On : 11-19-14 10:03:53 Operator:
Sample : 504-5 2/30.69G 11/18/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:27 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Wed Nov 12 09:56:39 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

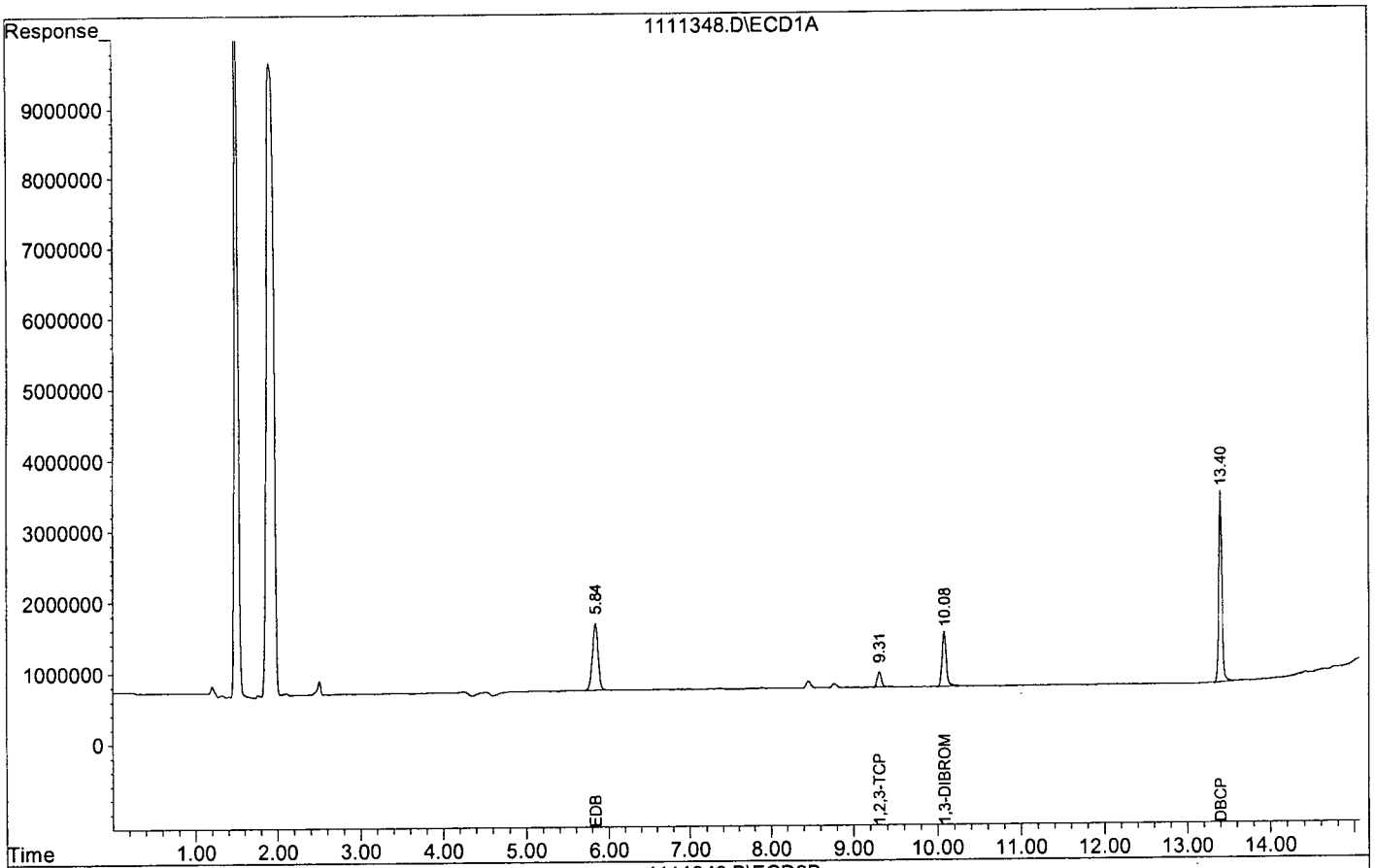
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 776124 | 1017909 | 0.934 | 0.955 |
| Spiked Amount 0.350 | | | Recovery | = | 266.86% | 272.86% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.28 | 943338 | 1434296 | 0.888 | 0.869 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 212161 | 283983 | 0.934 | 0.869 |
| 4) TM DBCP | 13.40 | 14.13 | 2687587 | 4921901 | 0.932 | 0.866 |
| Target Compounds | | | | | | |

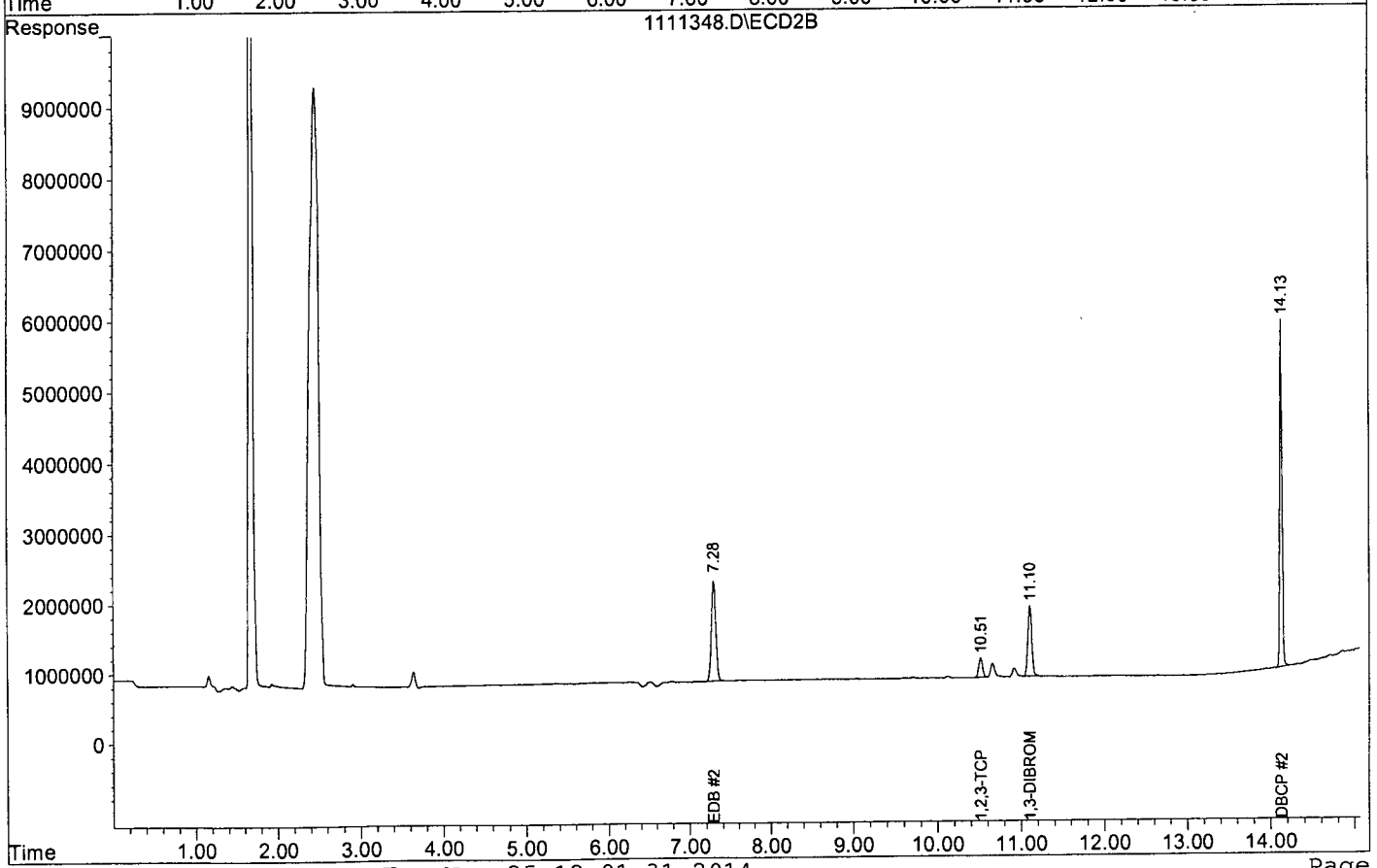
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111348.D
Acq On : 11-19-14 10:03:53
Sample : 504-5 2/30.69G 11/18/14
Misc :
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 48
Operator:
Inst : Herbie
Multiplr: 1.00



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111349.D\ECD1A.CH Vial: 49
Signal #2 : G:\HERBIE\DATA\141111\1111349.D\ECD2B.CH
Acq On : 11-19-14 10:23:52 Operator:
Sample : 504-6 2/33.48G 11/18/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:27 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Wed Nov 12 09:56:39 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

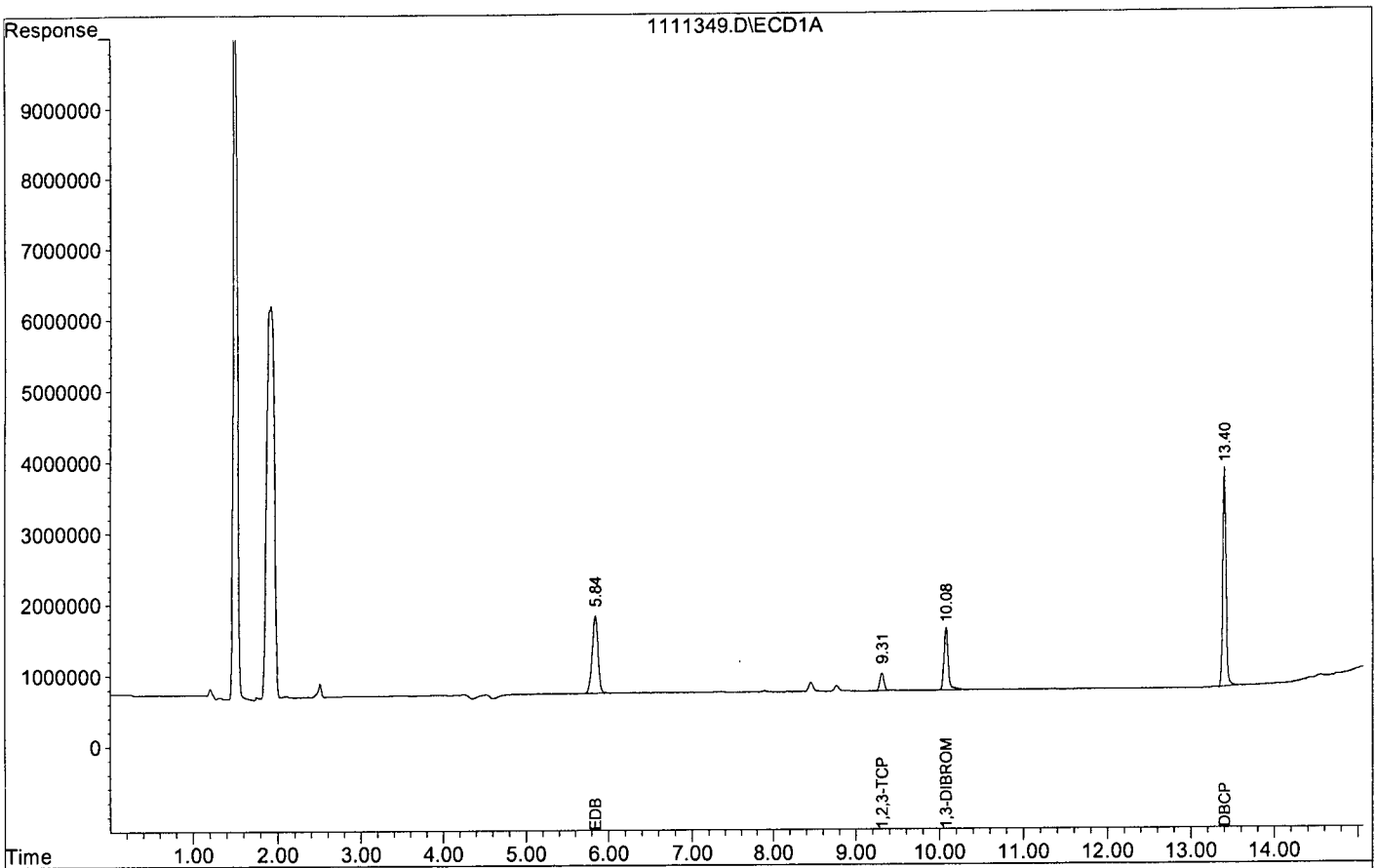
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 883365 | 1182182 | 1.063 | 1.109 |
| Spiked Amount 0.350 | | | Recovery | = | 303.71% | 316.86% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 1087840 | 1707459 | 1.024 | 1.035 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 247628 | 326495 | 1.091 | 0.999 |
| 4) TM DBCP | 13.40 | 14.13 | 3073225 | 5763098 | 1.066 | 1.014 |
| Target Compounds | | | | | | |

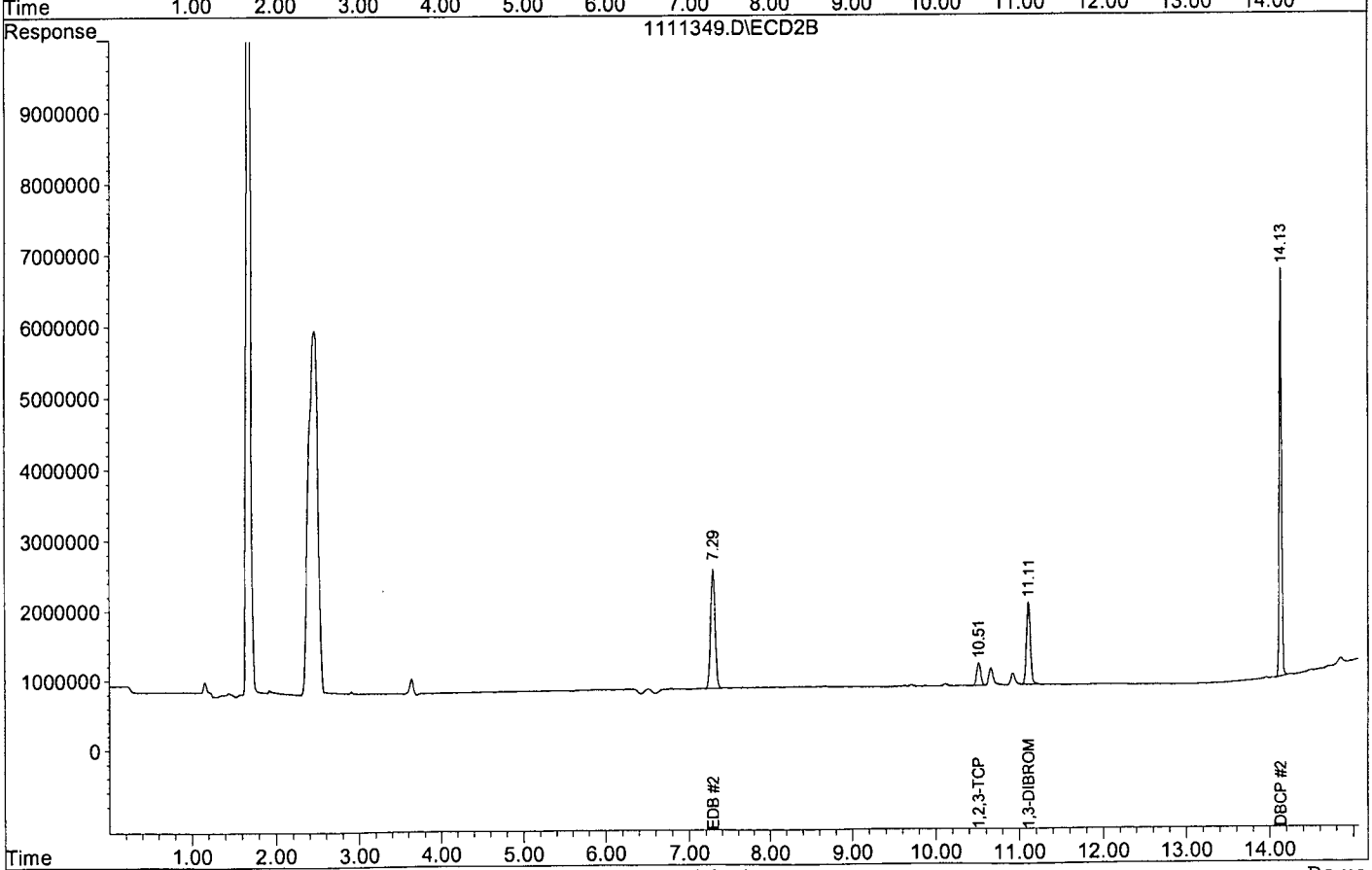
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111349.D
Acq On : 11-19-14 10:23:52
Sample : 504-6 2/33.48G 11/18/14
Misc :
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 49
Operator:
Inst : Herbie
Multiplr: 1.00



DBCP/EDB/1,2,3-TCP Analysis by
8011 1118

Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No: 74924
Date Analyzed: 11/19/14
Instrument: Herbie
Initial Cal. Date: 11/19/14
Data File: 1111352.D

| | | Compound | MEAN | CCRF | %D | %Drift | | |
|---|---|---|---|---|---|---|---|---|
| 1 | TM | EDB | 553664 | 602832 | 8.9 | TM | | |
| 2 | TM | 1,2,3-TCP | 105513 | 143515 | 36 | TM | | *NT |
| 3 | TM | DBCP | 1476860 | 1757050 | 19 | TM | | |
| 4 | signal #2 | | | | | | | |
| 5 | TM | EDB | 821177 | 893678 | 8.8 | TM | | |
| 6 | TM | 1,2,3-TCP | 159633 | 187922 | 18 | TM | | |
| 7 | TM | DBCP | 2564520 | 3126370 | 22 | TM | | * |
| 8 | | | | | | | | |
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| 39 | | | | | | | | |
| | | Average | | | 18.8 | | | |

DBCP/EDB/1,2,3-TCP Analysis by

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111352.D\ECD1A.CH Vial: 52
Signal #2 : G:\HERBIE\DATA\141111\1111352.D\ECD2B.CH
Acq On : 11-19-14 11:23:55 Operator:
Sample : 141118A LCS-2 2/33.26G Inst : Herbie
Misc : water Multiplr: 1.05
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:51 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 25 11:41:44 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 307383 | 375884 | 0.368 | 0.361 |
| Spiked Amount 0.368 | | | Recovery | = | 99.92% | 98.02% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 550988 | 816822 | 0.524 | 0.523 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 131173 | 171761 | 0.654 | 0.566 |
| 4) TM DBCP | 13.40 | 14.13 | 1605947 | 2857504 | 0.572 | 0.586 |

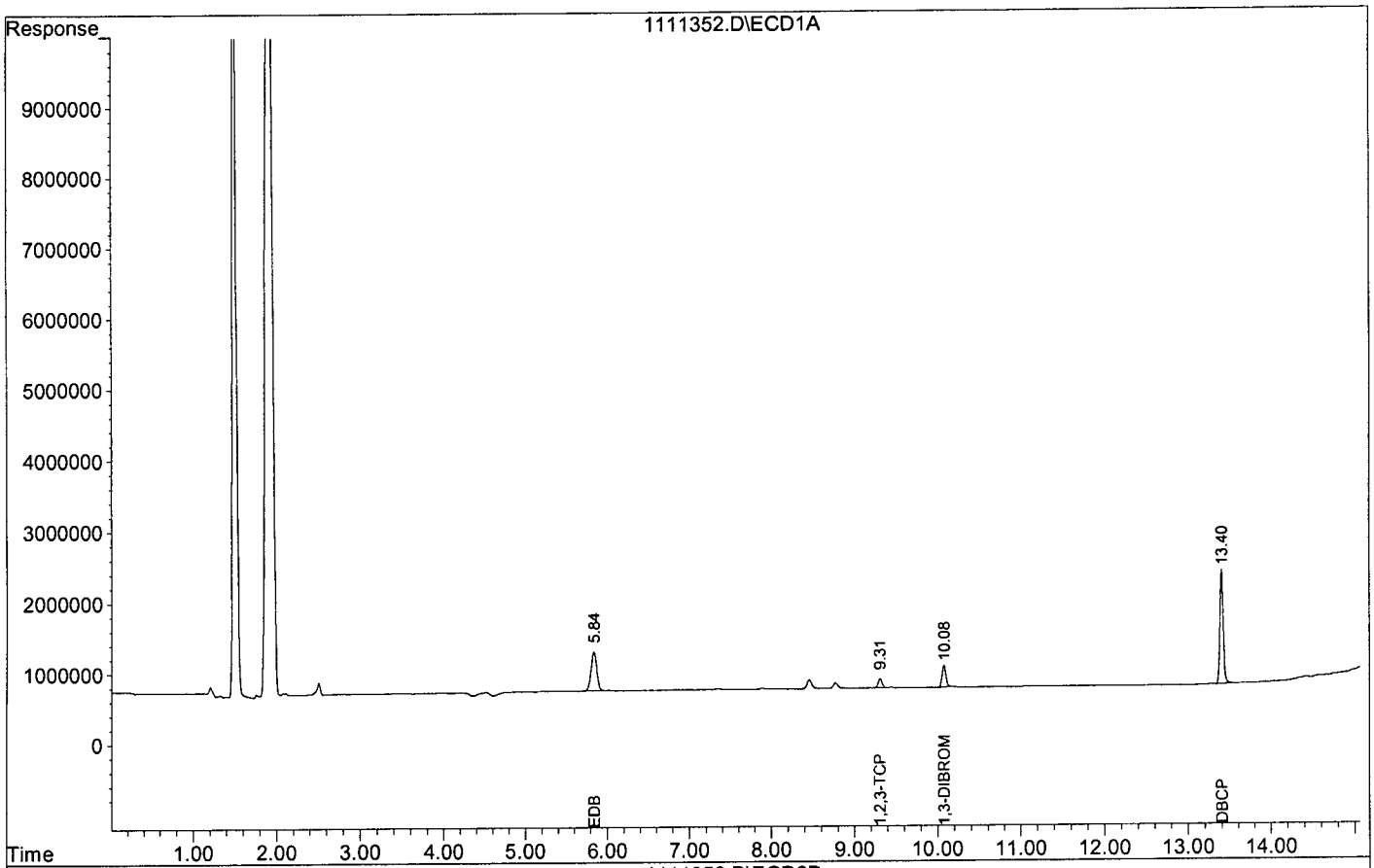
Target Compounds

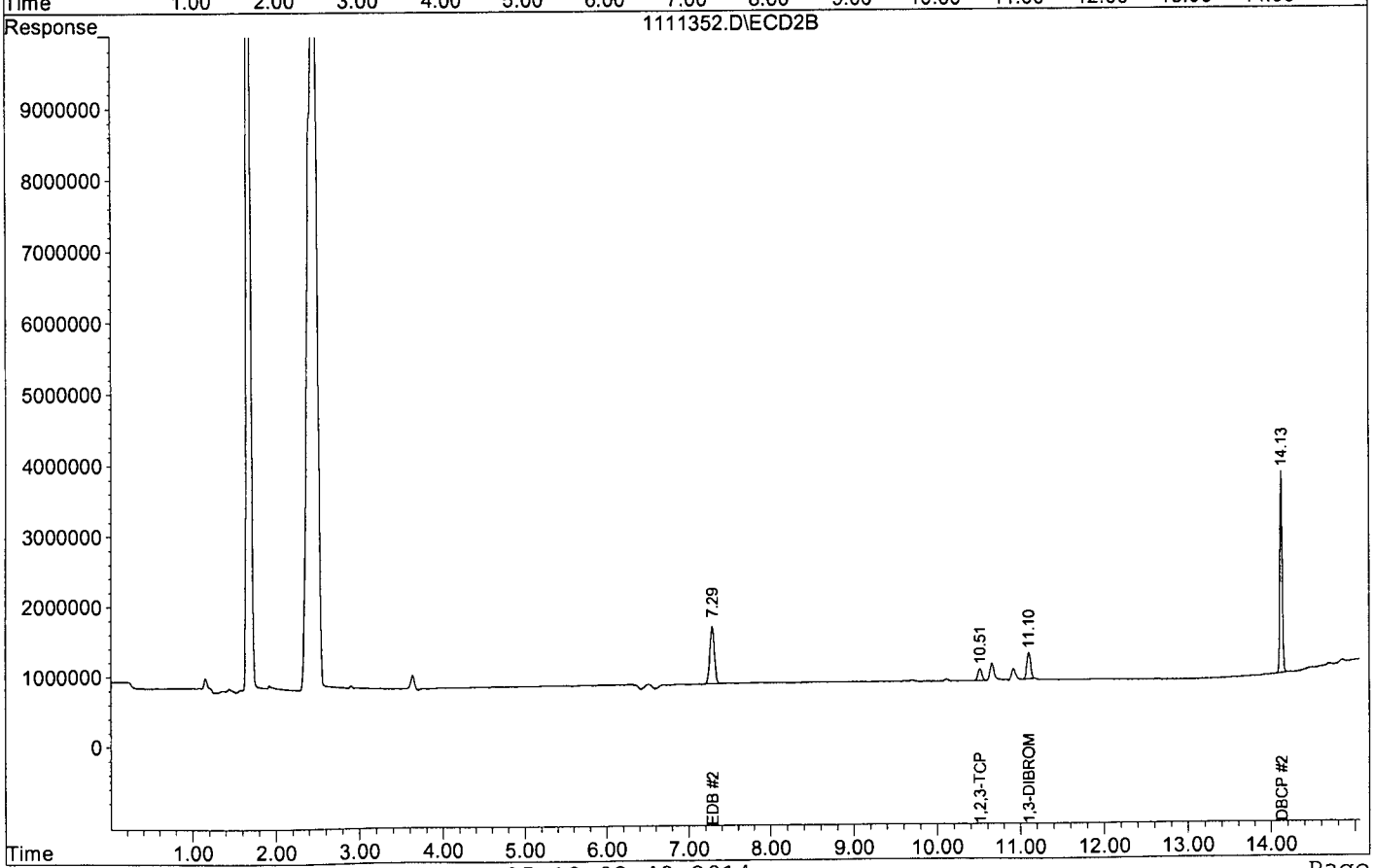
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111352.D
Acq On : 11-19-14 11:23:55
Sample : 141118A LCS-2 2/33.26G
Misc : water
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 52
Operator:
Inst : Herbie
Multiplr: 1.05



DBCP/EDB/1,2,3-TCP Analysis by
8011 1118

Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No: 74924
Date Analyzed: 11/19/14
Instrument: Herbie
Initial Cal. Date: 11/19/14
Data File: 1111357.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | TM | EDB | 553664 | 538567 | 2.7 | TM | |
| 2 | TM | 1,2,3-TCP | 105513 | 124190 | 18 | TM | |
| 3 | S | 1,3-DIBROMOPROPANE(S) | 440002 | 451891 | 2.7 | S | |
| 4 | TM | DBCP | 1476860 | 1527090 | 3.4 | TM | |
| 5 | signal #2 | | | | | | |
| 6 | TM | EDB | 821177 | 793945 | 3.3 | TM | |
| 7 | TM | 1,2,3-TCP | 159633 | 162545 | 1.8 | TM | |
| 8 | S | 1,3-DIBROMOPROPANE(S) | 548224 | 556350 | 1.5 | S | |
| 9 | TM | DBCP | 2564520 | 2732360 | 6.5 | TM | |
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| | | Average | | | #REF! | | |

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111357.D\ECD1A.CH Vial: 57
Signal #2 : G:\HERBIE\DATA\141111\1111357.D\ECD2B.CH
Acq On : 11-19-14 13:04:14 Operator:
Sample : 504-3 11/18/14 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:42 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 25 11:41:44 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

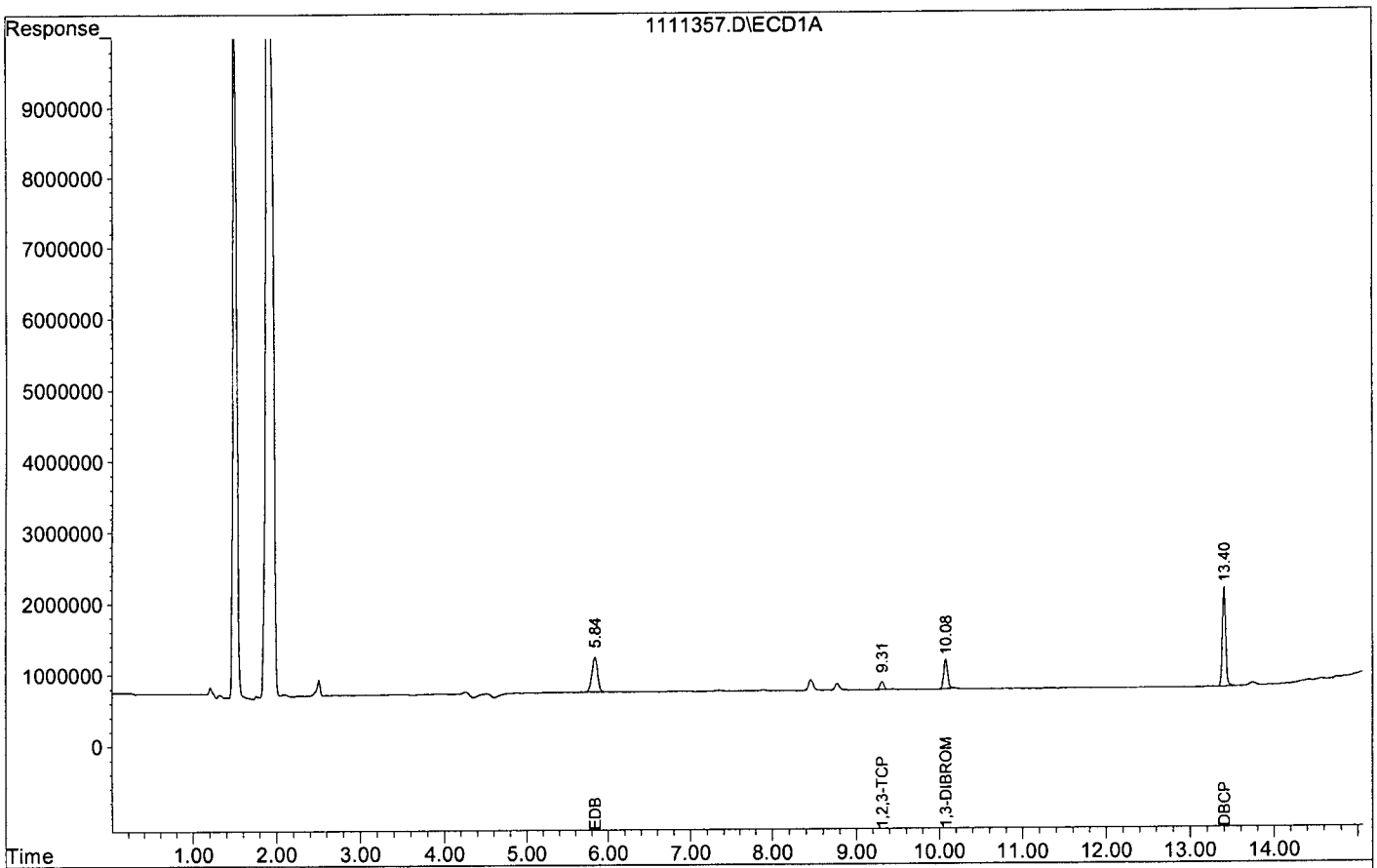
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 413028 | 508504 | 0.469 | 0.464 |
| Spiked Amount 0.350 | | | Recovery | = | 134.00% | 132.57% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 492250 | 725666 | 0.445 | 0.442 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 113510 | 148566 | 0.538 | 0.465 |
| 4) TM DBCP | 13.40 | 14.13 | 1395760 | 2497380 | 0.473 | 0.487 |
| Target Compounds | | | | | | |

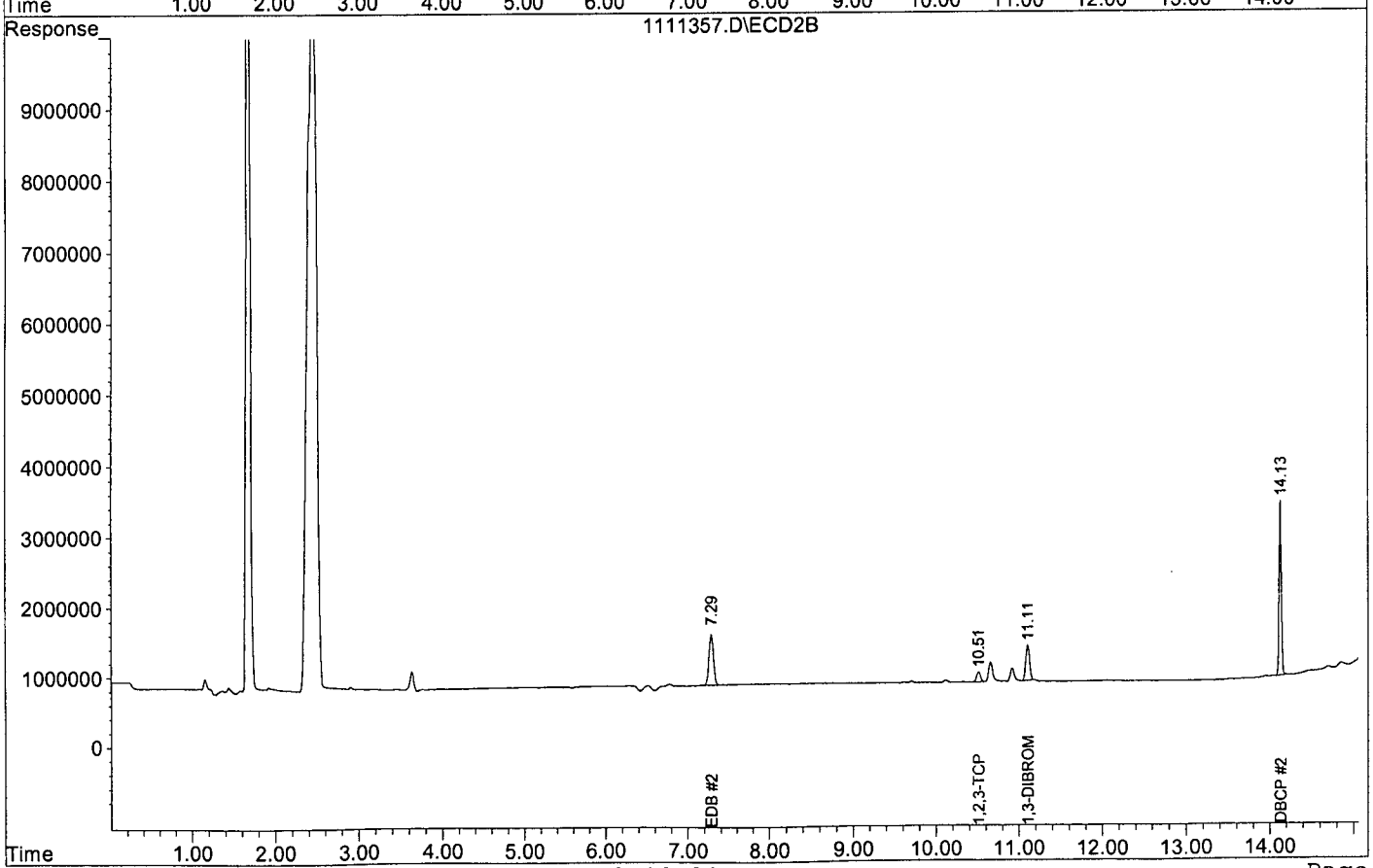
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111357.D
Acq On : 11-19-14 13:04:14
Sample : 504-3 11/18/14
Misc :
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 57
Operator:
Inst : Herbie
Multiplr: 1.00



# 8011
# for
# DBCP & EDB Fumigants
# Raw Data

APPL, INC.

# Method Blank
## EPA 8011

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141118W-07202 - 192306**
Batch ID: #8011-141118A

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | DBCP | 0.019 U | 0.02 | 0.019 | 0.007 | ug/L | 11/18/14 | 11/19/14 |
| BLANK | EDB | 0.020 U | 0.02 | 0.020 | 0.010 | ug/L | 11/18/14 | 11/19/14 |
| BLANK | SURROGATE: 1,3-DIBROMOPRO | 94.6 | 70-132 | | | % | 11/18/14 | 11/19/14 |

Quant Method: 80111118.M
Run #: 1111350
Instrument: Herbie
Sequence: 141111
Initials: MA

*GC SC-Blank-REG MDLs*
*Printed: 11/25/14 12:08:25 PM*

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111350.D\ECD1A.CH Vial: 50
Signal #2 : G:\HERBIE\DATA\141111\1111350.D\ECD2B.CH
Acq On : 11-19-14 10:43:51 Operator:
Sample : 141118A BLK 2/33.87G Inst : Herbie
Misc : water Multiplr: 1.03
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:36 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 25 11:29:34 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

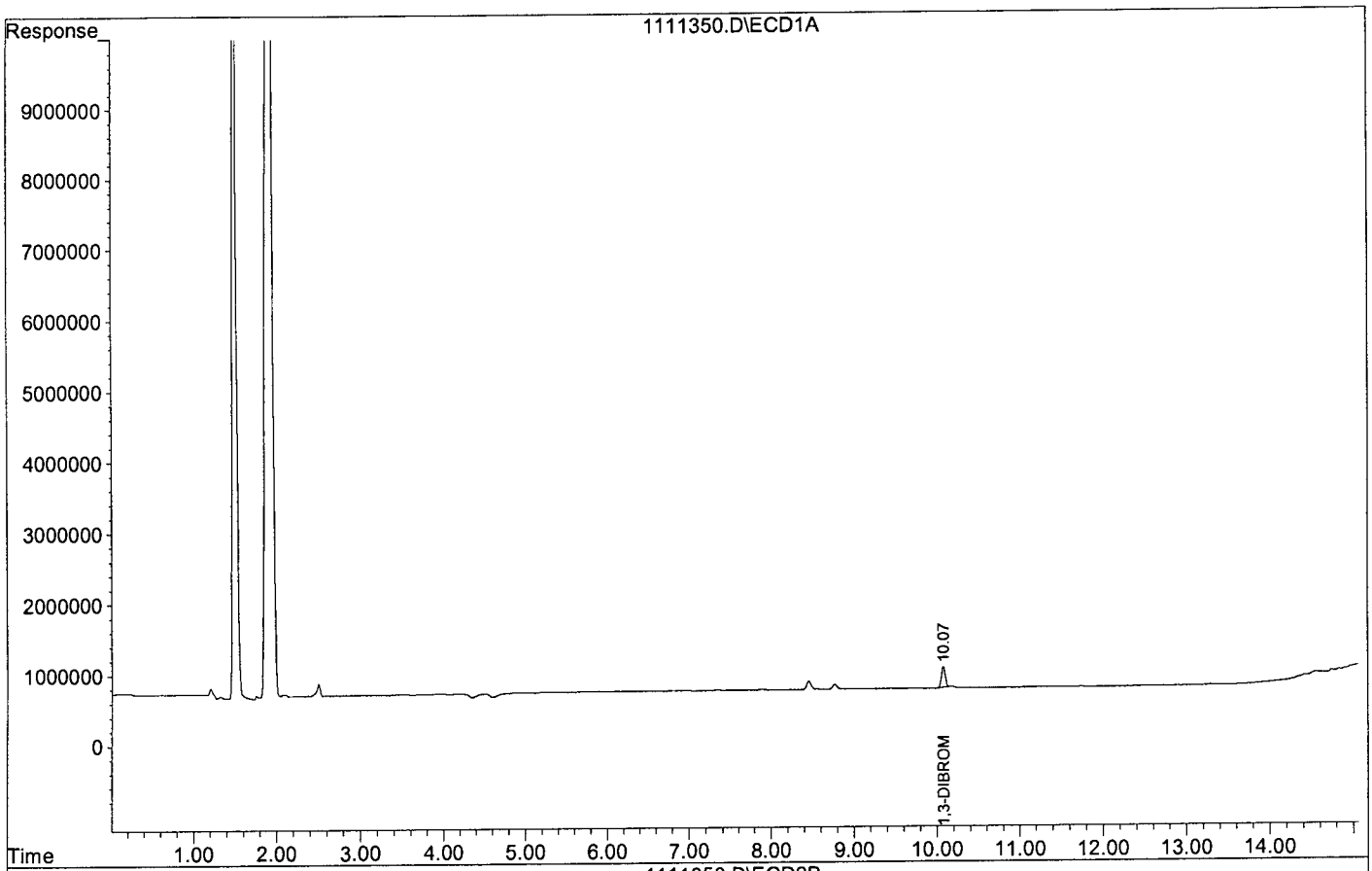
| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.07 | 11.10 | 291293 | 374263 | 0.342 | 0.353 |
| Spiked Amount 0.362 | | | Recovery | = | 94.56% | 97.60% |
| Target Compounds | | | | | | |
| Target Compounds | | | | | | |
| 1) TM EDB | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |
| 2) TM 1,2,3-TCP | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |
| 4) TM DBCP | 0.00 | 0.00 | 0 | 0 | N.D. d | N.D. d |

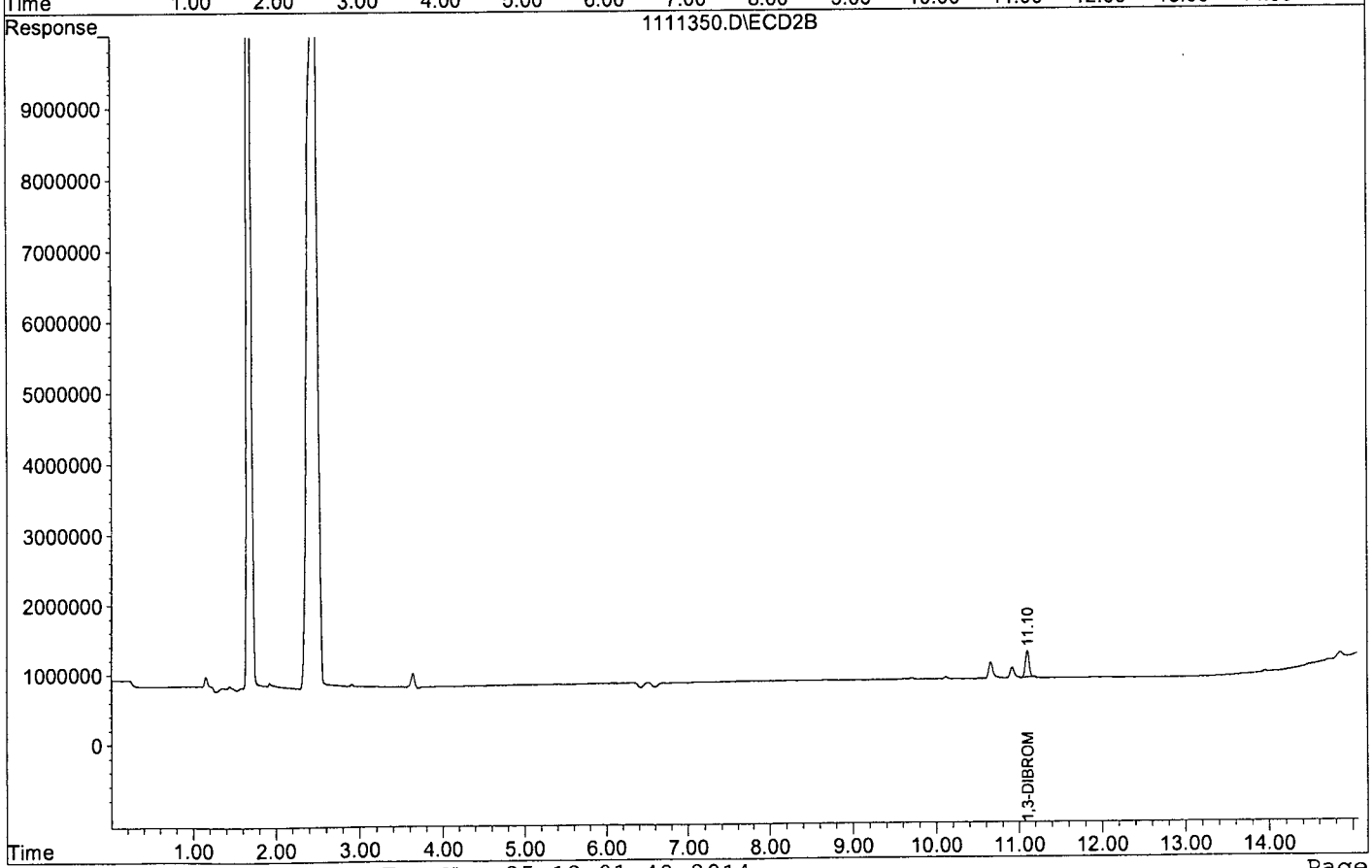
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\141111\1111350.D
Acq On : 11-19-14 10:43:51
Sample : 141118A BLK 2/33.87G
Misc : water
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 50
Operator:
Inst : Herbie
Multiplr: 1.03



# Laboratory Control Spike Recovery

## EPA 8011

APPL ID: **141118W-07202 LCS - 192306**
Batch ID: #8011-141118A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| DBCP | 0.482 | 0.572 | 119 | 60-140 |
| EDB | 0.482 | 0.524 | 109 | 60-140 |
| SURROGATE: 1,3-DIBROMOPROPANE ( | 0.350 | 0.368 | 105 | 70-132 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | 80111118.M |
| Extraction Date : | 11/18/14 |
| Analysis Date : | 11/19/14 |
| Instrument : | Herbie |
| Run : | 1111351 |
| Initials : | MA |

*Printed: 11/25/14 12:08:26 PM*
*APPL Standard LCS*

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111351.D\ECD1A.CH Vial: 51
Signal #2 : G:\HERBIE\DATA\141111\1111351.D\ECD2B.CH
Acq On : 11-19-14 11:03:53 Operator:
Sample : 141118A LCS-1 2/34.14G Inst : Herbie
Misc : water Multiplr: 1.03
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:44 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 25 11:41:44 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.11 | 301215 | 372311 | 0.351 | 0.348 |
| Spiked Amount 0.359 | | | Recovery | = | 97.82% | 96.99% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 28799 | 38254 | 0.027 | 0.024 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 4708 | 7349 | 0.023 | 0.024 |
| 4) TM DBCP | 13.40 | 14.13 | 71556 | 109987 | 0.025 | 0.022 |

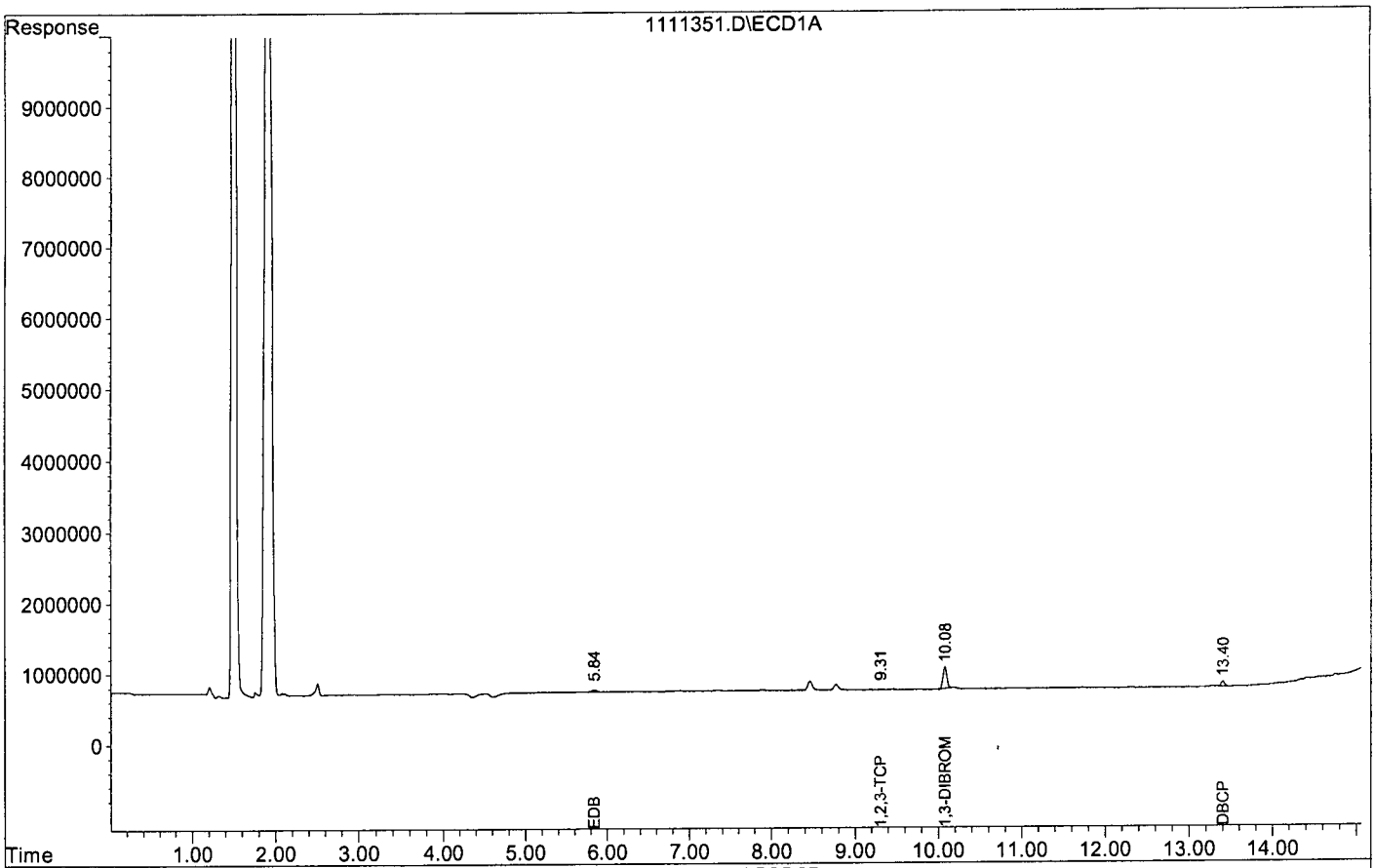
Target Compounds

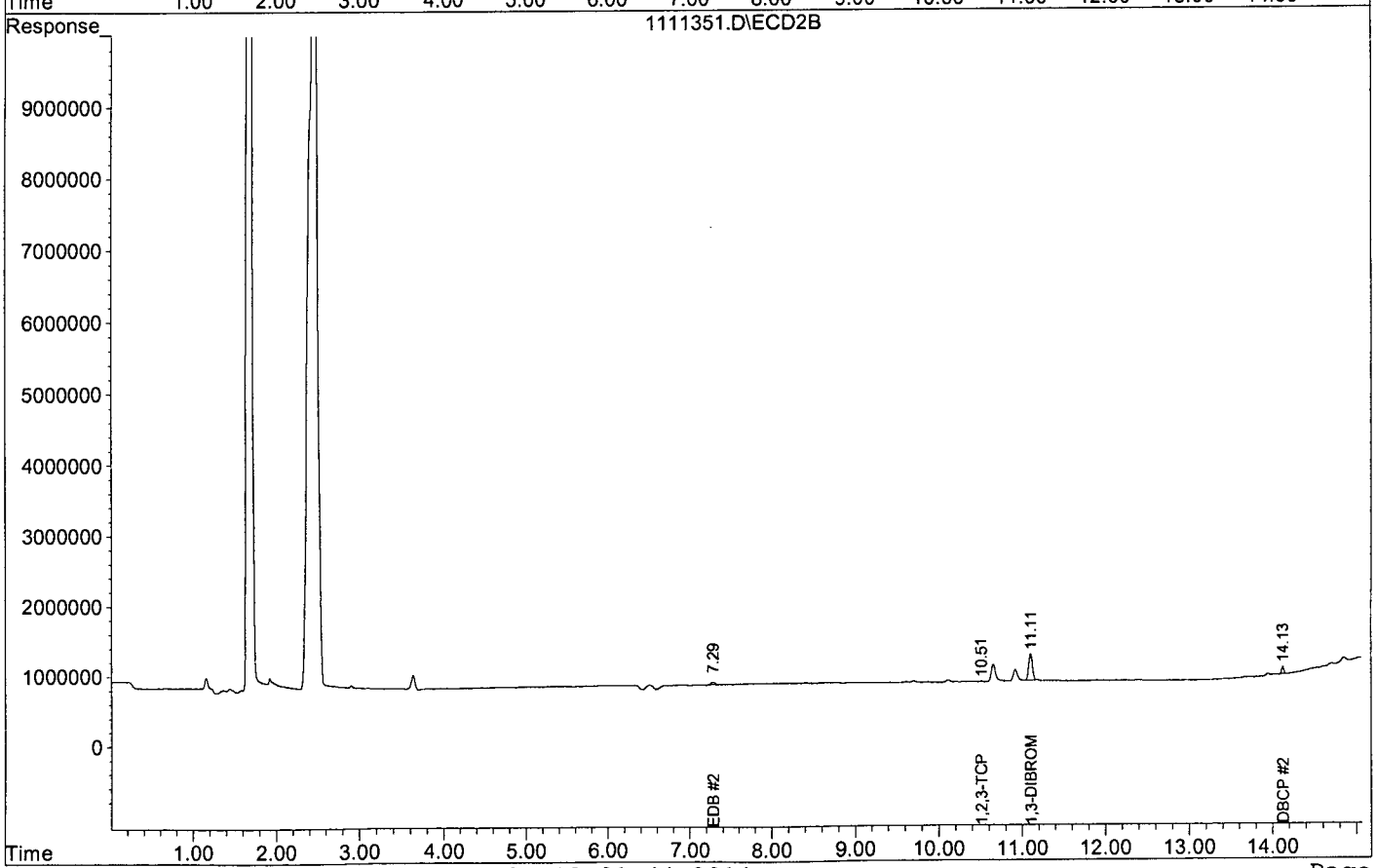
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111351.D
Acq On : 11-19-14 11:03:53
Sample : 141118A LCS-1 2/34.14G
Misc : water
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 51
Operator:
Inst : Herbie
Multiplr: 1.03



Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\141111\1111352.D\ECD1A.CH Vial: 52
Signal #2 : G:\HERBIE\DATA\141111\1111352.D\ECD2B.CH
Acq On : 11-19-14 11:23:55 Operator:
Sample : 141118A LCS-2 2/33.26G Inst : Herbie
Misc : water Multiplr: 1.05
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Nov 25 11:51 2014 Quant Results File: 80111118.RES

Quant Method : G:\HERBIE\DATA\141111\80111118.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Nov 25 11:41:44 2014
Response via : Initial Calibration
DataAcq Meth : DOHS504.M

Volume Inj. : 2µL
Signal #1 Phase : DB-35MS Signal #2 Phase: DB-XLB
Signal #1 Info : 0.25 Signal #2 Info : 0.50

| Compound | RT#1 | RT#2 | Resp#1 | Resp#2 | ug/L | ug/L |
|---|---|---|---|---|---|---|
| System Monitoring Compounds | | | | | | |
| 3) S 1,3-DIBROMOPROPA | 10.08 | 11.10 | 307383 | 375884 | 0.368 | 0.361 |
| Spiked Amount 0.368 | | | Recovery | = | 99.92% | 98.02% |
| Target Compounds | | | | | | |
| 1) TM EDB | 5.84 | 7.29 | 550988 | 816822 | 0.524 | 0.523 |
| 2) TM 1,2,3-TCP | 9.31 | 10.51 | 131173 | 171761 | 0.654 | 0.566 |
| 4) TM DBCP | 13.40 | 14.13 | 1605947 | 2857504 | 0.572 | 0.586 |

Target Compounds

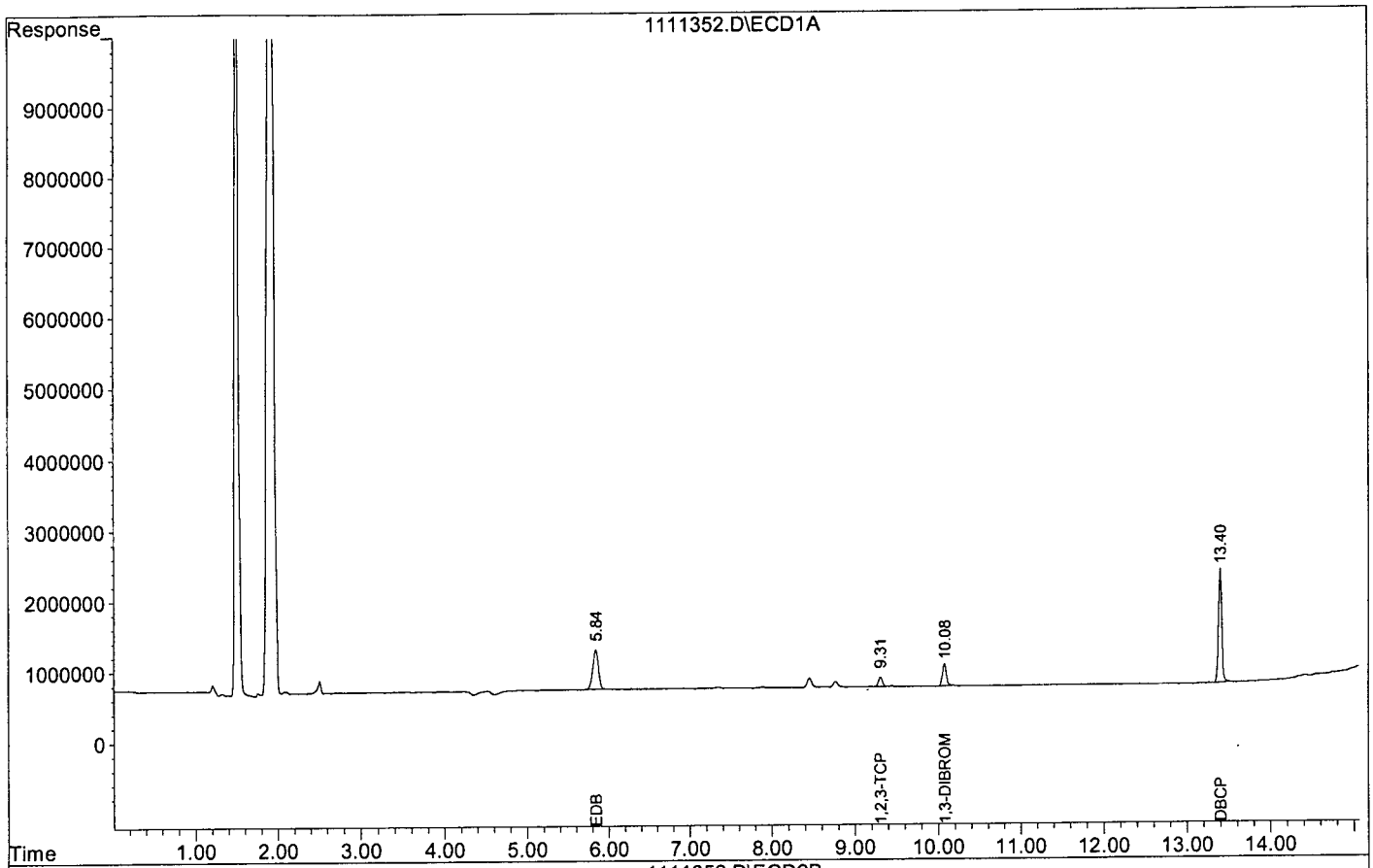
Algorithm = $\frac{550988 \times 1.052}{2 \times 553664}$ = 0.52 MA 11/25/14

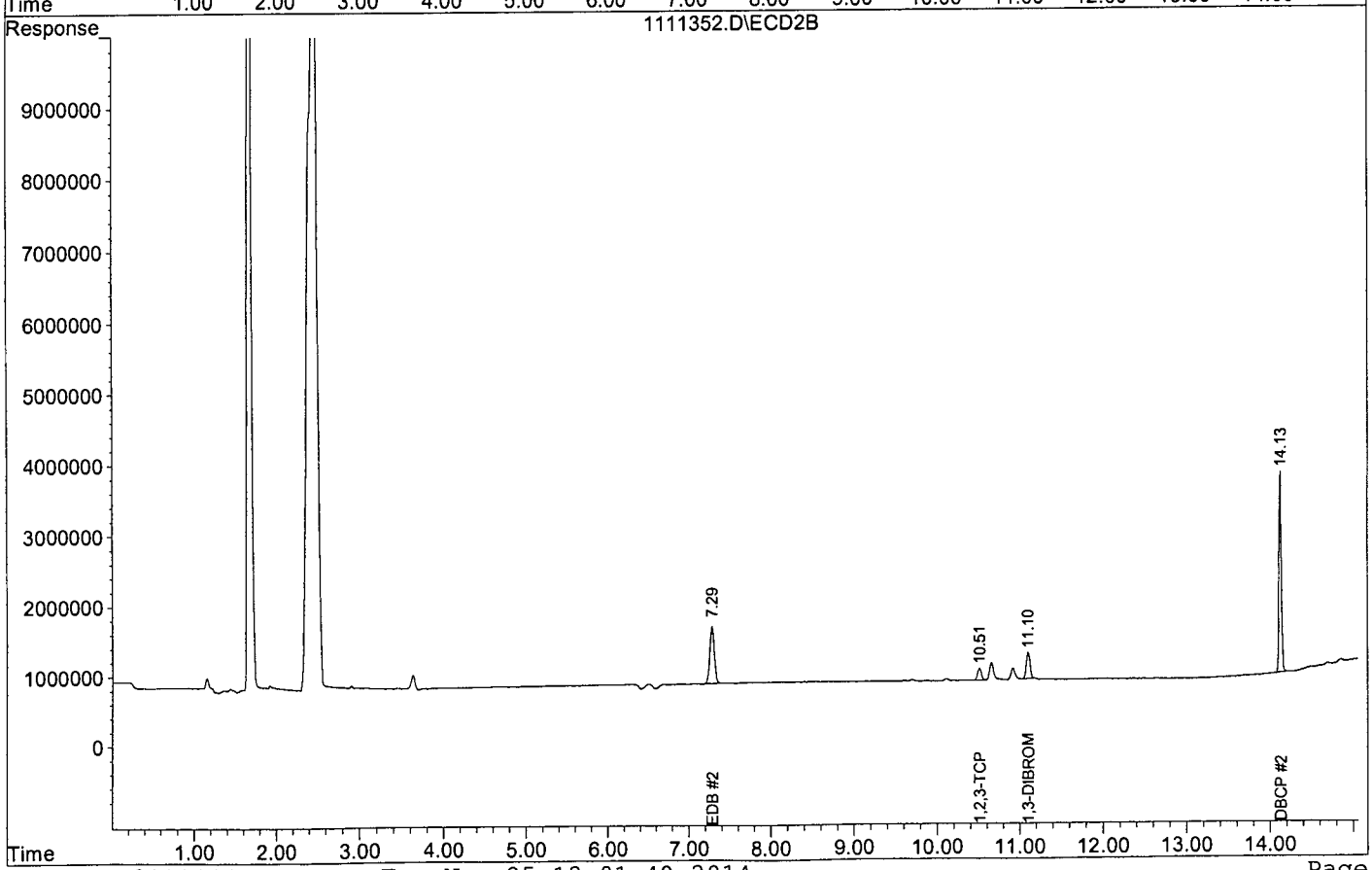
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\141111\1111352.D
Acq On : 11-19-14 11:23:55
Sample : 141118A LCS-2 2/33.26G
Misc : water
Quant Method : G:\HERBIE\DATA\141111\80111118.M

Vial: 52
Operator:
Inst : Herbie
Multiplr: 1.05



| STANDARD | INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | SOLVENT LOT # 081 | DATE INITIALS |
|---|---|---|---|---|---|---|---|

LOG BOOK #41

DIESEL SPIKE

Diesel Fuel #2 Composite
(Second Source), 50,000
mg/L, 2 x 5 ml
011598-01-SS
Lot # 207749 | Storage ≤ -10 Degrees C | Expiry 4/27/16
Solv: Methylene Chloride
For R&D only, not intended for consumption
Made in the USA

Open 7/28/14 — 7/28/14 MA
Ex 7/28/15 — Ex 7/28/15

Diesel Fuel #2 Composite (SS)
Lot #: 207749 - 32376
Rec: 4/25/13 MFR exp. 4/27/16

| | 504/8011 SURROGATE | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| 1,3 DBP | 100 | 1,3 DBP STOCK prep.02/17/14 exp. 02/1715 | 35ul | 10mL | 0.35ug/mL | Methanol 070913A |

~~CA 7/28/14~~ — CA 7/28/14 — 8/28/14

| | 504/8011 HIGH M STD | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| EDB TCP DBCP 1,3 DBP | 20ug/mL | 504/DOHS STOCK prep. 07/28/14 exp 07/28/15 | 500uL | 25mL | 0.4ug/mL | Methanol 070913A |
| | 100ug/mL | 1,3 DBP STOCK prep. 02/17/14 exp. 02/17/15 | 100uL | | | |

~~CA 7/28/14~~ — CA 7/28/14 — 8/28/14

| | 504/8011 LOW M STD | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| EDB TCP DBCP 1,3 DBP | 0.4ug/mL | 504/8011 HIGH M STD prep.07/28/14 exp: 08/28/14 | 750uL | 10mL | 0.03ug/mL | Methanol 070913A |

~~CA 7/28/14~~ — CA 7/28/14 — 8/28/14

| | 504/8011 HIGH SPIKE | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| EDB TCP DBCP | 200ug/mL | Absolute CAT 30096 Lot 080111-30272 open 1/29/14 exp 1/29/15 | 30uL | 25mL | 0.24ug/mL | Methanol 070913A |

~~CA 7/28/14~~ — CA 7/28/14 — 8/28/14

| | 504/8011 LOW SPIKE | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| EDB TCP DBCP | 0.24ug/mL | 504/8011 HIGH SPIKE prep. 07/28/14 Exp: 08/28/14 | 800uL | 10mL | 0.0192ug/mL | Methanol 070913A |

CA 7/28/14 — CA 7/28/14 — 8/28/14

| PAC ECD CURVE | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1a | 1b | 1 | 2 | 3 | 4 | 5 | 6 |
| | ID# | (µg/mL) | LOT # | DATE | EXP. DATE | µL | µL | µL | µL | µL | µL | µL | µL |
| | PAC ECD CAL STD | 6 | | 06/23/14 | 11/09/14 | 2 | 5 | 10 | 50 | 20 | 100 | 70 | 1000 |
| | | | | | | 998 | 995 | 990 | 950 | 80 | 100 | 30 | N/A |
| | Hexane | | 080613A | | Final VOL. | 1000 | 1000 | 1000 | 1000 | 100 | 200 | 100 | N/A |

~~CA 7/29/14~~ — CA 7/29/14 — 11/9/14

THC SURROGATE — open 7/29/14 — Ex. 7/29/15
CAT: 110316-05
lot: 216091-33700

Key 7/29/14 — EXP 7/29/15

| STANDARD | INITIAL CONC | SOURCE DATE | ALIQUOT | FINAL VOLUME | FINAL CONC | NOL TEN. LOT # | DATE INITIALS |
|---|---|---|---|---|---|---|---|

GC/MS INSTRUMENT MAINTENANCE LOG # 42 PAGE #

THC SURROGATE

open By: KY
on: 11/11/14
exp. 11/11/15

CAT NO: 110316-05
LOT NO: 229803-34068

open DATE: 11/11/14
Expire DATE: 11/11/15

HERB-3

| | | | | | | |
|---|---|---|---|---|---|---|
| Various | HERB STD 10/9/14 ex. 10/9/15 | 1mL | 10mL | Various | MTBE #50223 | LH 11/12/14 ex 5/12/15 |

| Technical Chlordane Calibration Curve | | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Stock Src. | Aliquot | Final Conc. | Solvent | Final Vol |
| Technical | 10µg/mL | Tech. Chld Stk | 1A- 25µL | 0.025 µg/mL | Hexane | 10 mL |
| Chlordane | | Prep: 10/29/14 | 1- 50uL | 0.05µg/mL | Lot# | 10 mL |
| | | Exp: 10/29/15 | 2- 100uL | 0.10µg/mL | 051914A | 10 mL |
| | | | 3- 250uL | 0.25µg/mL | | 10 mL |
| | | | 4- 500uL | 0.50µg/mL | | 10 mL |
| | | | 5- 750uL | 0.75µg/mL | | 10 mL |

GA 11/12/14 Exp 5/12/15

| Technical Chlordane 2nd Src | | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Stock Src. | Aliquot | Final Conc. | Final Vol. | Solvent |
| Technical | 10µg/mL | Tech Chld | 250µL | 0.25µg/mL | 10mL | Hexane |
| Chlordane | | 2nd Src Stk | | | | Lot: |
| | Prep: | 10/29/14 | | | | 051914A |
| | Exp: | 10/29/15 | | | | |

GA 11/12/14 exp 5/12/15

| | 504/8011 LOW M STD | | | | | |
|---|---|---|---|---|---|---|
| Compound | Initial Conc. | Source | Aliquot | Final Vol. | Final Conc. | Solvent |
| EDB<br>TCP<br>DBCP<br>1,3 DBP | 0.4ug/mL | 504/8011 HIGH M STD<br>prep.07/28/14<br>exp: 08/28/14 | 750uL | 10mL | 0.03ug/mL | Methanol<br>070913A |

LH 11/14/14 ex 12/14/14

| MITC CURVE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| SUPPLIER | ID# | ug/mL | LOT # | DATE | EXP. | mL | mL | mL | mL | mL | mL | mL |
| | | | | | Final Conc. | 0.02 | 0.125 | 0.25 | 1 | 2.5 | 3.5 | 5 |
| | MITC STD | 5 | | 09/05/14 | 03/05/15 | 4 | 25 | 50 | 20 | 100 | 70 | 100 |
| VWR | ETHYL ACETATE | | 10176249 | | | 996 | 975 | 950 | 80 | 200 | 30 | N/A |
| | | | | | Final VOL. | 1000 | 1000 | 1000 | 100 | 100 | 100 | 100 |

GA 11/14/14 exp 3/5/15

_MWE012

# Organic Extraction Worksheet

| Method | EPA Method 8011 DBCP/EDB | Extraction Set | 141118A | Extraction Method | MWE012 | Units | mL |
|---|---|---|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Spiked ID 1 | 504.1 Low Spike 7-28-14 | | Surrogate ID 1 | 504.1 Surrogate 7-28-14 |
| Spiked ID 2 | 504.1 High Spike 7-28-14 | | Surrogate ID 2 | |
| Spiked ID 3 | 504.1 Low Method Standard 11-14-14 | | Surrogate ID 3 | |
| Spiked ID 4 | 504.1 High Method Standard 7-28-14 | | Surrogate ID 4 | |
| Spiked ID 5 | | | Surrogate ID 5 | |
| Spiked ID 6 | | | Sufficient Vol for Matrix QC: | NO |
| Spiked ID 7 | | | Ext. Start Time: | 11/18/14 15:45 |
| Spiked ID 8 | | | Ext. End Time: | 11/18/14 16:15 |
| | | | GC Requires Extract By: | 11/27/14 0:00 |

| | | | | |
|---|---|---|---|---|
| pH1 | | | Water Bath Temp Criteria | |
| pH2 | | | | |
| pH3 | | | | |

**Spiked By:** IC **Date** 11/18/14 **Witnessed By:** KY **Date** 11/18/14

| | Sample | Sample Container | Spike Amount | Spike ID | Surrogate Amount | Surrogate ID | Extract Amount | Final Volume | pH | Extract Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 141118A Blk | | | | 0.035 | 1 equip | 33.87g | 2 | 7 | 11/18/14 15:45 | |
| 2 | 141118A LCS-1 | | 0.035 | 1 | 0.035 | 1 equip | 34.14g | 2 | 7 | 11/18/14 15:45 | |
| 3 | 141118A LCS-2 | | 0.070 | 2 | 0.035 | 1 equip | 33.26g | 2 | 7 | 11/18/14 15:45 | |
| 4 | AZ07202 | AZ07202W07 | | | 0.035 | 1 equip | 34.01g | 2 | 7 | 11/18/14 15:45 | 74924 RUSH 2 WEEKS |
| 5 | AZ07203 | AZ07203W07 | | | 0.035 | 1 equip | 34.80g | 2 | 7 | 11/18/14 15:45 | 74924 RUSH 2 WEEKS |
| 6 | AZ07331 | AZ07331W03 | | | 0.035 | 1 equip | 34.09g | 2 | 7 | 11/18/14 15:45 | 74950 |
| 7 | AZ07332 | AZ07332W03 | | | 0.035 | 1 equip | 34.40g | 2 | 7 | 11/18/14 15:45 | 74950 |
| 8 | M STD 1 | | 0.020 | 3 | NA | NA equip | 33.88g | 2 | 7 | 11/18/14 15:45 | |
| 9 | M STD 2 | | 0.020 | 4 | NA | NA equip | 33.35g | 2 | 7 | 11/18/14 15:45 | |
| 10 | M STD 3 | | 0.040 | 4 | NA | NA equip | 33.09g | 2 | 7 | 11/18/14 15:45 | |
| 11 | M STD 4 | | 0.060 | 4 | NA | NA equip | 30.81g | 2 | 7 | 11/18/14 15:45 | |
| 12 | M STD 5 | | 0.080 | 4 | NA | NA equip | 30.69g | 2 | 7 | 11/18/14 15:45 | |
| 13 | M STD 6 | | 0.100 | 4 | NA | NA equip | 33.48g | 2 | 7 | 11/18/14 15:45 | |

Kg 11/18/14

| Solvent and Lot# | |
|---|---|
| GC2 Hexane | dh772 |
| NaCL | wj11d |
| Sod. Thiosulfate | h15584 |

| Extraction COC Transfer | |
|---|---|
| Extraction lab employee Initials | KY |
| GC analyst's initials | LH |
| Date | 11/19/14 |
| Time | 8:15 |
| Refrigerator | Hobart |

| | Technician's Initials |
|---|---|
| Scanned By | IC |
| Sample Preparation | IC |
| Extraction | IC |
| Concentration | IC |

| Modified | 11/18/14 4:27:09 PM |
|---|---|

**Reviewed By:** Kg **Date** 11/18/14

# Injection Log

Directory: G:\HERBIE\DATA\141111\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 44 | 1111344.D | 1 | 504-1 2/33.88G 11/18/14 | | 11-19-14 8:44:20 |
| 2 | 45 | 1111345.D | 1 | 504-2 2/33.35G 11/18/14 | | 11-19-14 9:04:08 |
| 3 | 46 | 1111346.D | 1 | 504-3 2/33.09G 11/18/14 | | 11-19-14 9:24:00 |
| 4 | 47 | 1111347.D | 1 | 504-4 2/30.81G 11/18/14 | | 11-19-14 9:43:56 |
| 5 | 48 | 1111348.D | 1 | 504-5 2/30.69G 11/18/14 | | 11-19-14 10:03:53 |
| 6 | 49 | 1111349.D | 1 | 504-6 2/33.48G 11/18/14 | | 11-19-14 10:23:52 |
| 7 | 50 | 1111350.D | 1.03336 | 141118A BLK 2/33.87G | water | 11-19-14 10:43:51 |
| 8 | 51 | 1111351.D | 1.02519 | 141118A LCS-1 2/34.14G | water | 11-19-14 11:03:53 |
| 9 | 52 | 1111352.D | 1.05232 | 141118A LCS-2 2/33.26G | water | 11-19-14 11:23:55 |
| 10 | 53 | 1111353.D | 1.02911 | AZ07202W07 2/34.01G | water | 11-19-14 11:43:57 |
| 11 | 54 | 1111354.D | 1.00575 | AZ07203W07 2/34.80G | water | 11-19-14 12:03:56 |
| 12 | 57 | 1111357.D | 1 | 504-3 11/18/14 | | 11-19-14 13:04:14 |

# EPA METHOD 8260C
# Volatile Organic Compounds

APPL, INC.

# EPA METHOD 8260C
# Volatile Organic Compounds
# QC Summary

APPL, INC.

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141114W-07201 - 191955**
Batch ID: #86CRE-141114AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DIBROMO-3-CHLOROPROPA | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,3-DICHLOROPROPENE (TOTA | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L11
Instrument: Loki
Sequence: 141110
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/18/14 11:18:06 AM*

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141114W-07201 - 191955**
Batch ID: #86CRE-141114AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: 1,2-DICHLOROET | 103 | 70-120 | | | % | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: 4-BROMOFLUOR | 92.6 | 75-120 | | | % | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: DIBROMOFLUOR | 106 | 85-115 | | | % | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: TOLUENE-D8 (S) | 97.7 | 85-120 | | | % | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L11
Instrument: Loki
Sequence: 141110
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/18/14 11:18:07 AM*

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 74924

Case No: 74924 Date Analyzed: 11/14/14

Matrix: WATER Instrument: Loki

| APPL ID. | Client Sample No. | SURROGATE: 1,2-DICHLOROETHANE-D4 (S) | | | SURROGATE: 4-BROMOFLUOROBENZENE (S) | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141114AL-LCS | Lab Control Spike | 70-120 | 93.7 | | 75-120 | 113 | |
| 141114AL-BLK | Blank | 70-120 | 103 | | 75-120 | 92.6 | |
| AZ07201 | TRIP111214 | 70-120 | 106 | | 75-120 | 93.9 | |
| AZ07202 | HW111214-01 | 70-120 | 105 | | 75-120 | 92.7 | |
| AZ07203 | HW111214-02 | 70-120 | 103 | | 75-120 | 91.7 | |

Comments: Batch: #86CRE-141114AL

Form 2 & 8

# Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 74924

Case No: 74924 Date Analyzed: 11/14/14

Matrix: WATER Instrument: Loki

| APPL ID. | Client Sample No. | SURROGATE: DIBROMOFLUOROMETHANE (S) | | | SURROGATE: TOLUENE-D8 (S) | | |
|---|---|---|---|---|---|---|---|
| | | Limits | Result | Qualifier | Limits | Result | Qualifier |
| 141114AL-LCS | Lab Control Spike | 85-115 | 94.1 | | 85-120 | 102 | |
| 141114AL-BLK | Blank | 85-115 | 106 | | 85-120 | 97.7 | |
| AZ07201 | TRIP111214 | 85-115 | 113 | | 85-120 | 99.1 | |
| AZ07202 | HW111214-01 | 85-115 | 113 | | 85-120 | 98.4 | |
| AZ07203 | HW111214-02 | 85-115 | 110 | | 85-120 | 98.1 | |

Comments: Batch: #86CRE-141114AL

*Printed: 11/18/14 11:18:12 AM*

*Form 2 & 8, Surrogate Recovery Summary*

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141114W-07201 LCS - 191955**
Batch ID: #86CRE-141114AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | 9.64 | 96.4 | 80-130 |
| 1,1,1-TRICHLOROETHANE | 10.00 | 9.47 | 94.7 | 65-130 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | 10.8 | 108 | 65-130 |
| 1,1,2-TRICHLOROETHANE | 10.00 | 9.24 | 92.4 | 75-125 |
| 1,1-DICHLOROETHANE | 10.00 | 9.63 | 96.3 | 70-135 |
| 1,1-DICHLOROETHENE | 10.00 | 9.54 | 95.4 | 70-130 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | 9.96 | 99.6 | 75-125 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | 9.19 | 91.9 | 65-135 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | 8.95 | 89.5 | 50-130 |
| 1,2-DIBROMOETHANE | 10.00 | 9.25 | 92.5 | 80-120 |
| 1,2-DICHLOROBENZENE | 10.00 | 9.60 | 96.0 | 70-120 |
| 1,2-DICHLOROETHANE | 10.00 | 10.3 | 103 | 70-130 |
| 1,2-DICHLOROPROPANE | 10.00 | 10.0 | 100 | 75-125 |
| 1,3-DICHLOROBENZENE | 10.00 | 10.1 | 101 | 75-125 |
| 1,3-DICHLOROPROPENE (TOTAL) | 20.0 | 18.8 | 94.0 | 55-140 |
| 1,4-DICHLOROBENZENE | 10.00 | 9.55 | 95.5 | 75-125 |
| 2-BUTANONE | 10.00 | 9.63 | 96.3 | 30-150 |
| 4-METHYL-2-PENTANONE | 10.00 | 8.83 | 88.3 | 60-135 |
| ACETONE | 10.00 | 10.4 | 104 | 40-140 |
| BENZENE | 10.00 | 9.71 | 97.1 | 80-120 |
| BROMODICHLOROMETHANE | 10.00 | 9.73 | 97.3 | 75-120 |
| BROMOFORM | 10.00 | 8.81 | 88.1 | 70-130 |
| BROMOMETHANE | 10.00 | 8.60 | 86.0 | 30-145 |
| CARBON TETRACHLORIDE | 10.00 | 9.68 | 96.8 | 65-140 |
| CHLOROBENZENE | 10.00 | 9.69 | 96.9 | 80-120 |
| CHLOROETHANE | 10.00 | 10.2 | 102 | 60-135 |
| CHLOROFORM | 10.00 | 8.36 | 83.6 | 65-135 |
| CHLOROMETHANE | 10.00 | 8.77 | 87.7 | 40-125 |
| CIS-1,2-DICHLOROETHENE | 10.00 | 9.49 | 94.9 | 70-125 |
| DIBROMOCHLOROMETHANE | 10.00 | 9.66 | 96.6 | 60-135 |
| ETHYLBENZENE | 10.00 | 10.2 | 102 | 75-125 |

| Primary | SPK |
|---|---|
| Quant Method : | LCREDW.M |
| Extraction Date : | 11/14/14 |
| Analysis Date : | 11/14/14 |
| Instrument : | Loki |
| Run : | 1114L06 |
| Initials : | SV |

Comments:

*Printed: 11/18/14 11:18:22 AM*
*APPL Standard LCS*

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141114W-07201 LCS - 191955**
Batch ID: #86CRE-141114AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | 9.47 | 94.7 | 50-140 |
| METHYL TERT-BUTYL ETHER | 10.00 | 8.86 | 88.6 | 65-125 |
| METHYLENE CHLORIDE | 10.00 | 9.85 | 98.5 | 55-140 |
| STYRENE | 10.00 | 9.38 | 93.8 | 65-135 |
| TETRACHLOROETHENE | 10.00 | 9.72 | 97.2 | 45-150 |
| TOLUENE | 10.00 | 10.0 | 100 | 75-120 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | 9.52 | 95.2 | 60-140 |
| TRICHLOROETHENE | 10.00 | 9.27 | 92.7 | 70-125 |
| VINYL CHLORIDE | 10.00 | 8.65 | 86.5 | 50-145 |
| XYLENES (TOTAL) | 30.0 | 30.2 | 101 | 75-130 |
| SURROGATE: 1,2-DICHLOROETHANE- | 25.0 | 23.4 | 93.7 | 70-120 |
| SURROGATE: 4-BROMOFLUOROBENZ | 22.9 | 25.8 | 113 | 75-120 |
| SURROGATE: DIBROMOFLUOROMETH | 24.0 | 22.6 | 94.1 | 85-115 |
| SURROGATE: TOLUENE-D8 (S) | 24.9 | 25.5 | 102 | 85-120 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | LCREDW.M |
| Extraction Date : | 11/14/14 |
| Analysis Date : | 11/14/14 |
| Instrument : | Loki |
| Run : | 1114L06 |
| Initials : | SV |

*Printed: 11/18/14 11:18:22 AM*
*APPL Standard LCS*

# EPA 8260C^LL

Form 4

## Blank Summary

Lab Name: APPL, Inc.
Case No: 74924
Matrix: WATER
Blank ID: 141114AL-BLK

SDG No: 74924
Date Analyzed: 11/14/14
Instrument: Loki
Time Analyzed: 1233

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141114AL-LCS | Lab Control Spike | 1114L06 | 11/14/14 1012 |
| 141114AL-BLK | Blank | 1114L11 | 11/14/14 1233 |
| AZ07201 | TRIP111214 | 1114L14 | 11/14/14 1357 |
| AZ07202 | HW111214-01 | 1114L20 | 11/14/14 1645 |
| AZ07203 | HW111214-02 | 1114L21 | 11/14/14 1713 |

Comments: Batch: #86CRE-141114AL

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: ~~1107L34.D~~ 74924
Matrix: Water np 12-5-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: np12-5-14 ~~Loki~~ 74924
Date Analyzed: 11/08/14
Instrument: Loki
Time Analyzed: 2:17

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 0.1ug/L Vol Std 11-0 | 1107L35.D | 11/08/14 2:45 |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
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| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
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| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 18.1 |
| 75 | 30 - 60% of mass 95 | 46.8 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.6 |
| 173 | 0 - 2.09% of mass 174 | 0.4 |
| 174 | 50 - 100% of mass 95 | 91.9 |
| 175 | 5 - 9% of mass 174 | 8.5 |
| 176 | 94.9 - 101% of mass 174 | 98.3 |
| 177 | 5 - 9% of mass 176 | 6.6 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: ~~1110L01.D~~ 74924
Matrix: Water hp 12-5-14
ID: 25ug/mL BFB Std 09-30-14

hp 12-5-14
SDG No: ~~Loki~~ 74924
Date Analyzed: 11/10/14
Instrument: Loki
Time Analyzed: 16:17

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 0.5ug/L Vol Std 11-1 | 1110L06.D | 11/10/14 18:32 |
| 2 | | 1.0ug/L Vol Std 11-1 | 1110L07.D | 11/10/14 19:01 |
| 3 | | 5.0ug/L Vol Std 11-1 | 1110L08.D | 11/10/14 19:29 |
| 4 | | 10ug/L Vol Std 11-10 | 1110L09.D | 11/10/14 19:57 |
| 5 | | 20ug/L Vol Std 11-10 | 1110L10.D | 11/10/14 20:25 |
| 6 | | 40ug/L Vol Std 11-10 | 1110L11.D | 11/10/14 20:54 |
| 7 | | 100ug/L Vol Std 11-1 | 1110L12.D | 11/10/14 21:22 |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 19.1 |
| 75 | 30 - 60% of mass 95 | 49.5 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.7 |
| 173 | 0 - 2.09% of mass 174 | 0.0 |
| 174 | 50 - 100% of mass 95 | 86.7 |
| 175 | 5 - 9% of mass 174 | 7.7 |
| 176 | 94.9 - 101% of mass 174 | 95.6 |
| 177 | 5 - 9% of mass 176 | 6.5 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: ~~1111L02.D~~ 74924
Matrix: Water np 12-5-14
ID: 25ug/mL BFB Std 09-30-14

SDG No: np 12-5-14 ~~Loki~~ 74924
Date Analyzed: 11/11/14
Instrument: Loki
Time Analyzed: 12:31

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | Lab Control Spike | 141111A LCS-WL(SS) | 1111L04.D | 11/11/14 13:28 |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
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| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
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| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 17.6 |
| 75 | 30 - 60% of mass 95 | 49.1 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.9 |
| 173 | 0 - 2.09% of mass 174 | 1.7 |
| 174 | 50 - 100% of mass 95 | 93.5 |
| 175 | 5 - 9% of mass 174 | 7.6 |
| 176 | 94.9 - 101% of mass 174 | 95.6 |
| 177 | 5 - 9% of mass 176 | 5.7 |

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 74924
Matrix: Water
ID: 25ug/mL BFB Std 09-30-14

SDG No: 74924
Date Analyzed: 11/14/14
Instrument: Loki
Time Analyzed: 9:16

| | Client Sample No. | APPL ID. | File ID. | Date Analyzed |
|---|---|---|---|---|
| 1 | | 10ug/L Vol Std 11-14 | 1114L05.D | 11/14/14 9:44 |
| 2 | Lab Control Spike | 141114A LCS-WL | 1114L06.D | 11/14/14 10:12 |
| 3 | Blank | 141114A BLK-WL | 1114L11.D | 11/14/14 12:33 |
| 4 | TRIP111214 | AZ07201W01 | 1114L14.D | 11/14/14 13:57 |
| 5 | HW111214-01 | AZ07202W01 | 1114L20.D | 11/14/14 16:45 |
| 6 | HW111214-02 | AZ07203W01 | 1114L21.D | 11/14/14 17:13 |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |

| m/e | | |
|---|---|---|
| 50 | 15 - 40% of mass 95 | 19.6 |
| 75 | 30 - 60% of mass 95 | 50.2 |
| 95 | 100 - 100% of mass 95 | 100.0 |
| 96 | 5 - 9% of mass 95 | 6.7 |
| 173 | 0 - 2.09% of mass 174 | 0.0 |
| 174 | 50 - 100% of mass 95 | 89.6 |
| 175 | 5 - 9% of mass 174 | 7.7 |
| 176 | 94.9 - 101% of mass 174 | 95.2 |
| 177 | 5 - 9% of mass 176 | 6.5 |

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc.
Contract: Review
Lab Code:
SDG No.: 74924
Lab File ID (Standard): 1110L09.D
Date Analyzed: 11/10/14
Instrument ID: Loki
Time Analyzed: 19:57
GC Column:
ID:
Heated Purge: (Y/N)

| | | Fluorobenzene (IS) | | Chlorobenzene-D5 (IS) | | 1,4-Dichlorobenzene-D (IS) | |
|---|---|---|---|---|---|---|---|
| | | AREA # | RT # | AREA # | RT # | AREA # | RT # |
| | 12 HOUR STD | 626624 | 5.95 | 536256 | 9.18 | 326848 | 11.51 |
| | UPPER LIMIT | 1253248 | 6.45 | 1072512 | 9.68 | 653696 | 12.01 |
| | LOWER LIMIT | 313312 | 5.45 | 268128 | 8.68 | 163424 | 11.01 |
| | SAMPLE NO. | | | | | | |
| 01 | 0.1ug/L Vol Std 11-07-14 | 496448 | 5.95 | 438208 | 9.18 | 207296 | 11.51 |
| 02 | 0.5ug/L Vol Std 11-10-14 | 542848 | 5.95 | 465920 | 9.18 | 228480 | 11.51 |
| 03 | 1.0ug/L Vol Std 11-10-14 | 557888 | 5.95 | 495104 | 9.18 | 251392 | 11.51 |
| 04 | 5.0ug/L Vol Std 11-10-14 | 609024 | 5.95 | 515008 | 9.18 | 307776 | 11.51 |
| 05 | 10ug/L Vol Std 11-10-14 | 626624 | 5.95 | 536256 | 9.18 | 326848 | 11.51 |
| 06 | 20ug/L Vol Std 11-10-14 | 650240 | 5.95 | 558080 | 9.18 | 338304 | 11.51 |
| 07 | 40ug/L Vol Std 11-10-14 | 653952 | 5.95 | 571968 | 9.18 | 341312 | 11.51 |
| 08 | 100ug/L Vol Std 11-10-1 | 648384 | 5.95 | 570368 | 9.18 | 367936 | 11.51 |
| 09 | 141111A LCS-WL(SS) | 629696 | 5.95 | 524800 | 9.18 | 332160 | 11.51 |
| 10 | 10ug/L Vol Std 11-14-14 | 571072 | 5.95 | 474624 | 9.18 | 289472 | 11.51 |
| 11 | 141114A LCS-WL | 590400 | 5.95 | 483712 | 9.18 | 287488 | 11.51 |
| 12 | 141114A BLK-WL | 502848 | 5.95 | 441792 | 9.18 | 212544 | 11.51 |
| 13 | AZ07201W01 | 438592 | 5.95 | 396544 | 9.18 | 179712 | 11.51 |
| 14 | AZ07202W01 | 432512 | 5.95 | 393408 | 9.18 | 178112 | 11.51 |
| 15 | AZ07203W01 | 431168 | 5.95 | 389824 | 9.18 | 180608 | 11.51 |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

# EPA METHOD 8260C
# Volatile Organic Compounds
# Sample Data

APPL, INC.

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: TRIP111214**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07201**
QCG: #86CRE-141114AL-191955

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L14
Instrument: Loki
Sequence: 141110
Dilution Factor: 1
Initials: SV

*Printed: 11/18/14 11:18:32 AM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: TRIP111214**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07201**
QCG: #86CRE-141114AL-191955

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 106 | 70-120 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 93.9 | 75-120 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 113 | 85-115 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 99.1 | 85-120 | | | % | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L14
Instrument: Loki
Sequence: 141110
Dilution Factor: 1
Initials: SV

*Printed: 11/18/14 11:18:32 AM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141110\1114L14.D
Acq On : 14 Nov 14 13:57
Sample : AZ07201W01
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 13
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 11:02 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 438592 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 396544 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 179712 | 25.00000 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 270712 | 27.68967 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 115.317% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 297670 | 27.43542 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 109.809% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 775868 | 24.71634 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 99.270% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 249614 | 21.66016 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 94.566% | |

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

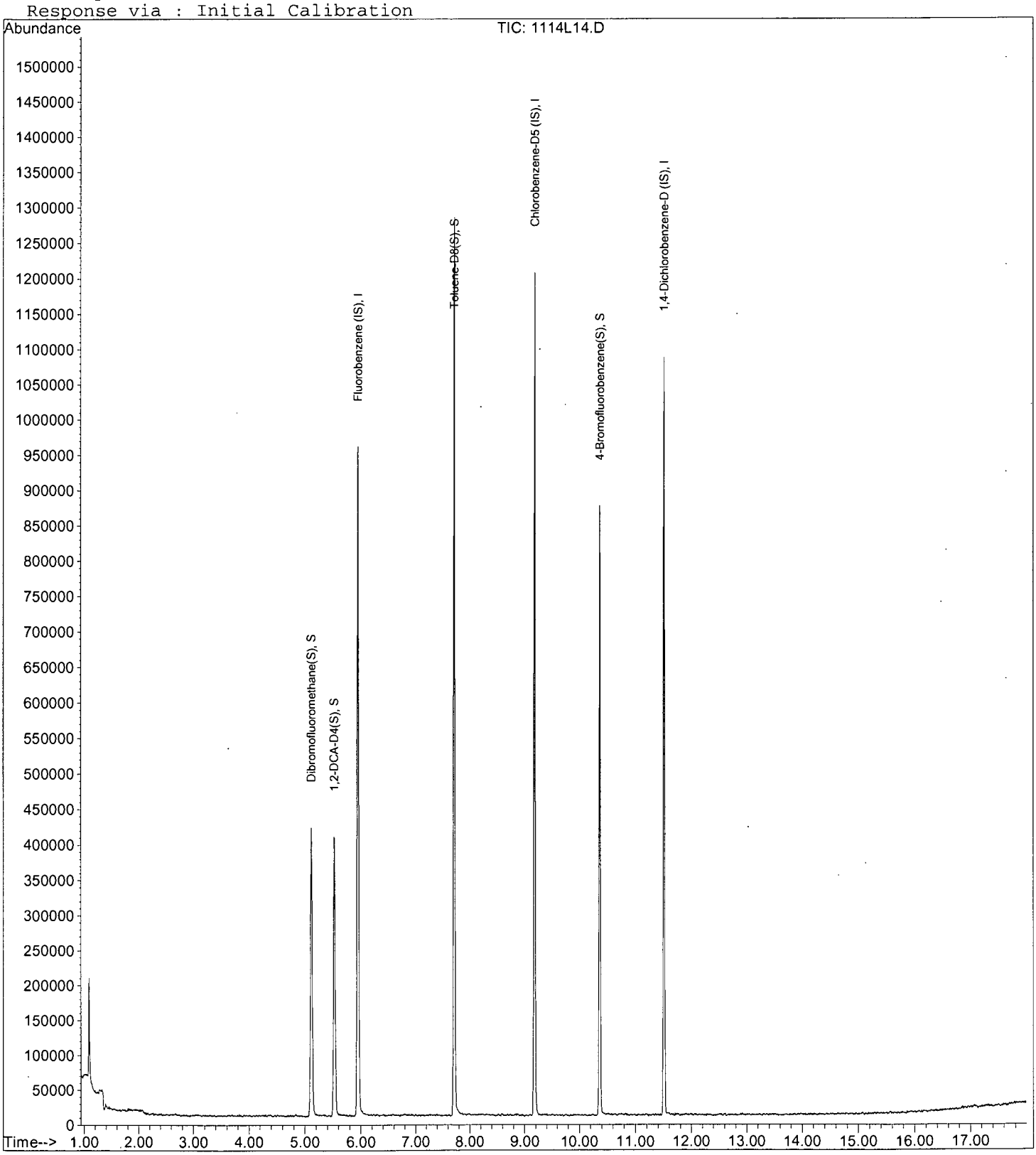
Quantitation Report

Data File : M:\LOKI\DATA\141110\1114L14.D
Acq On : 14 Nov 14 13:57
Sample : AZ07201W01
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 13
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 11:02 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration



# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-01**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07202**
QCG: #86CRE-141114AL-191955

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMOFORM | 3.9 | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L20
Instrument: Loki
Sequence: 141110
Dilution Factor: 1
Initials: SV

*Printed: 11/18/14 11:18:33 AM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-01**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07202**
QCG: #86CRE-141114AL-191955

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 105 | 70-120 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 92.7 | 75-120 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 113 | 85-115 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 98.4 | 85-120 | | | % | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L20
Instrument: Loki
Sequence: 141110
Dilution Factor: 1
Initials: SV

*Printed: 11/18/14 11:18:33 AM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141110\1114L20.D Vial: 19
Acq On : 14 Nov 14 16:45 Operator: DG,SV,RS
Sample : AZ07202W01 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Nov 18 11:03 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 432512 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 393408 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 178112 | 25.00000 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 266281 | 27.61932 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 115.021% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 290338 | 27.13582 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 108.612% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 763943 | 24.53045 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 98.523% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 244353 | 21.37266 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 93.313% | |
| Target Compounds | | | | | Qvalue |
| 71) Bromoform | 10.02 | 173 | 26113 | 3.83167 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

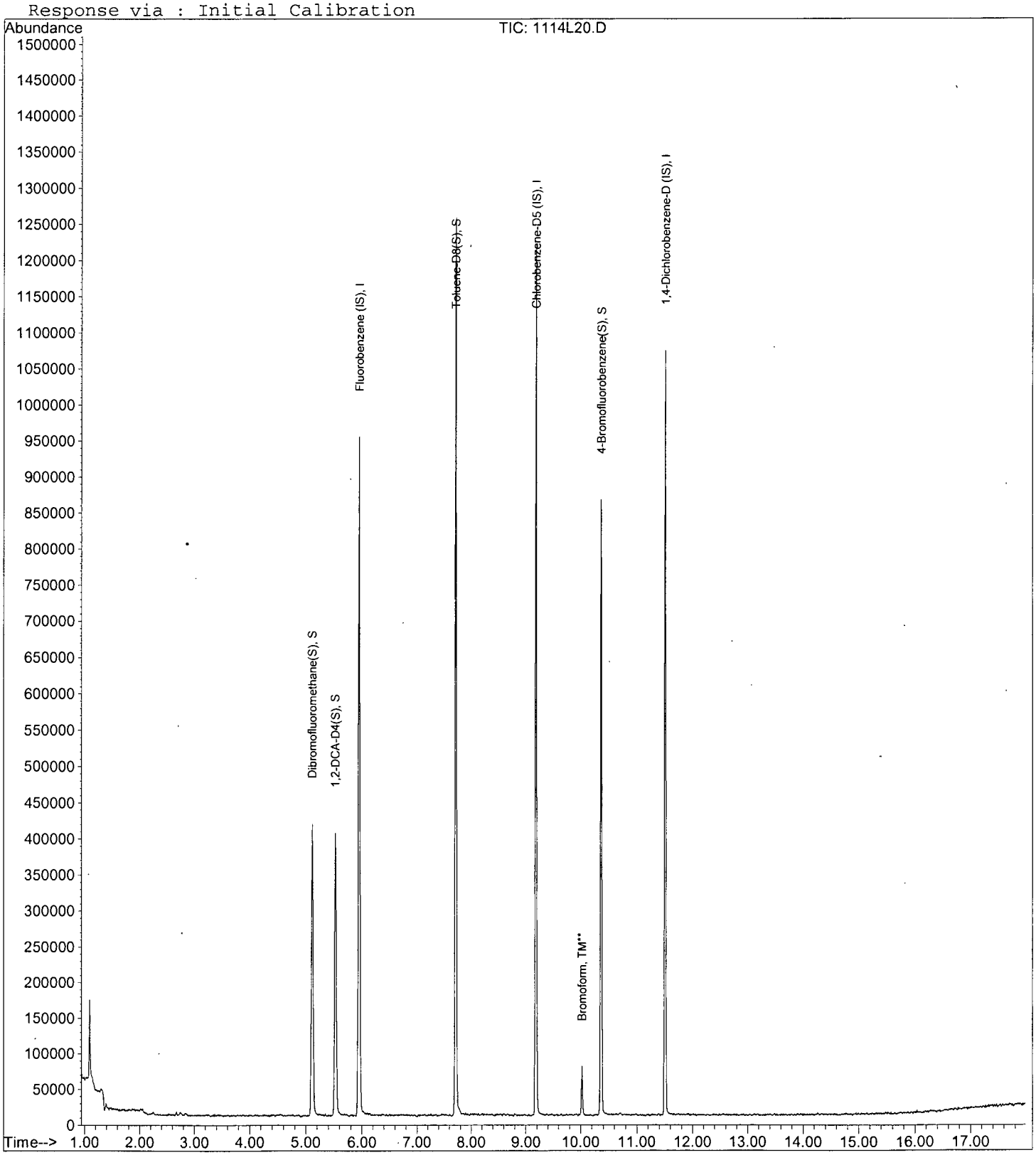
Quantitation Report

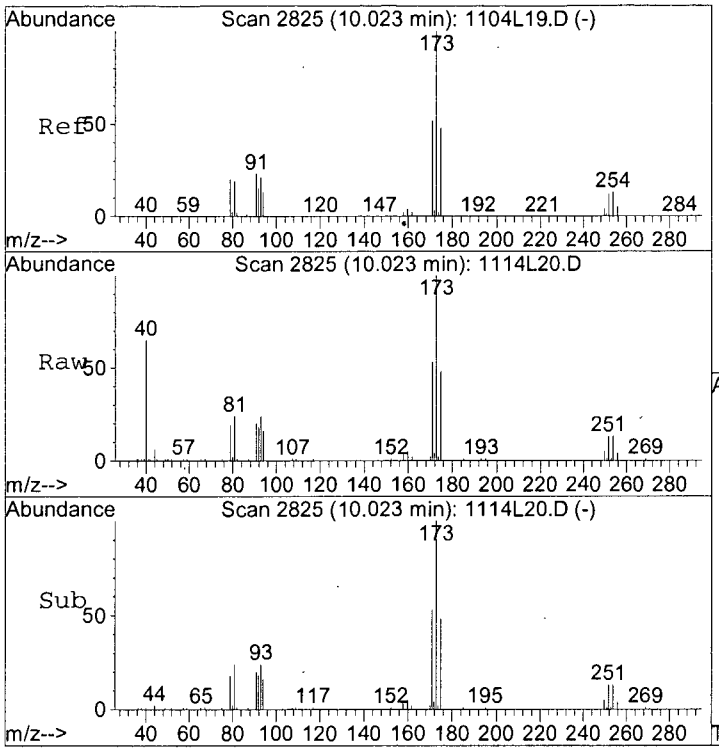
Data File : M:\LOKI\DATA\141110\1114L20.D
Acq On : 14 Nov 14 16:45
Sample : AZ07202W01
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 19
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 11:03 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

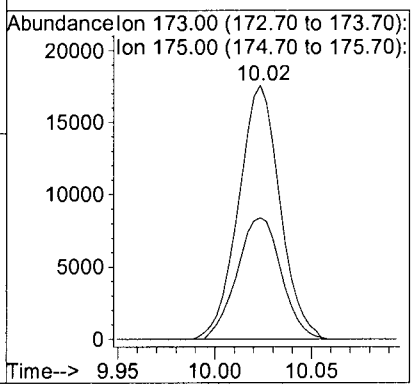





#71
Bromoform
Concen: 3.83167 ppb
RT: 10.02 min Scan# 2825
Delta R.T. 0.00 min
Lab File: 1114L20.D
Acq: 14 Nov 14 16:45

Tgt Ion:173 Resp: 26113

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 173 | 100 | | |
| 175 | 46.7 | 33.4 | 62.0 |



# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-02**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07203**
QCG: #86CRE-141114AL-191955

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DIBROMO-3-CHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,3-DICHLOROPROPENE (TOTAL) | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMOFORM | 4.2 | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L21
Instrument: Loki
Sequence: 141110
Dilution Factor: 1
Initials: SV

*Printed: 11/18/14 11:18:33 AM*
*APPL-F1-SC-NoMC-REG MDLs*

# EPA 8260C WATER

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-02**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07203**
QCG: #86CRE-141114AL-191955

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| EPA 8260C | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: 1,2-DICHLOROETHANE | 103 | 70-120 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: 4-BROMOFLUOROBEN | 91.7 | 75-120 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: DIBROMOFLUOROMET | 110 | 85-115 | | | % | 11/14/14 | 11/14/14 |
| EPA 8260C | SURROGATE: TOLUENE-D8 (S) | 98.1 | 85-120 | | | % | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L21
Instrument: Loki
Sequence: 141110
Dilution Factor: 1
Initials: SV

*Printed: 11/18/14 11:18:33 AM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141110\1114L21.D
Acq On : 14 Nov 14 17:13
Sample : AZ07203W01
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 20
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 11:05 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 431168 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 389824 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 180608 | 25.00000 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 258413 | 26.88678 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 111.973% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 284153 | 26.64053 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 106.631% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 754819 | 24.46031 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 98.242% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 239628 | 21.15208 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 92.348% | |
| Target Compounds | | | | | Qvalue |
| 71) Bromoform | 10.02 | 173 | 27539 | 4.07807 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

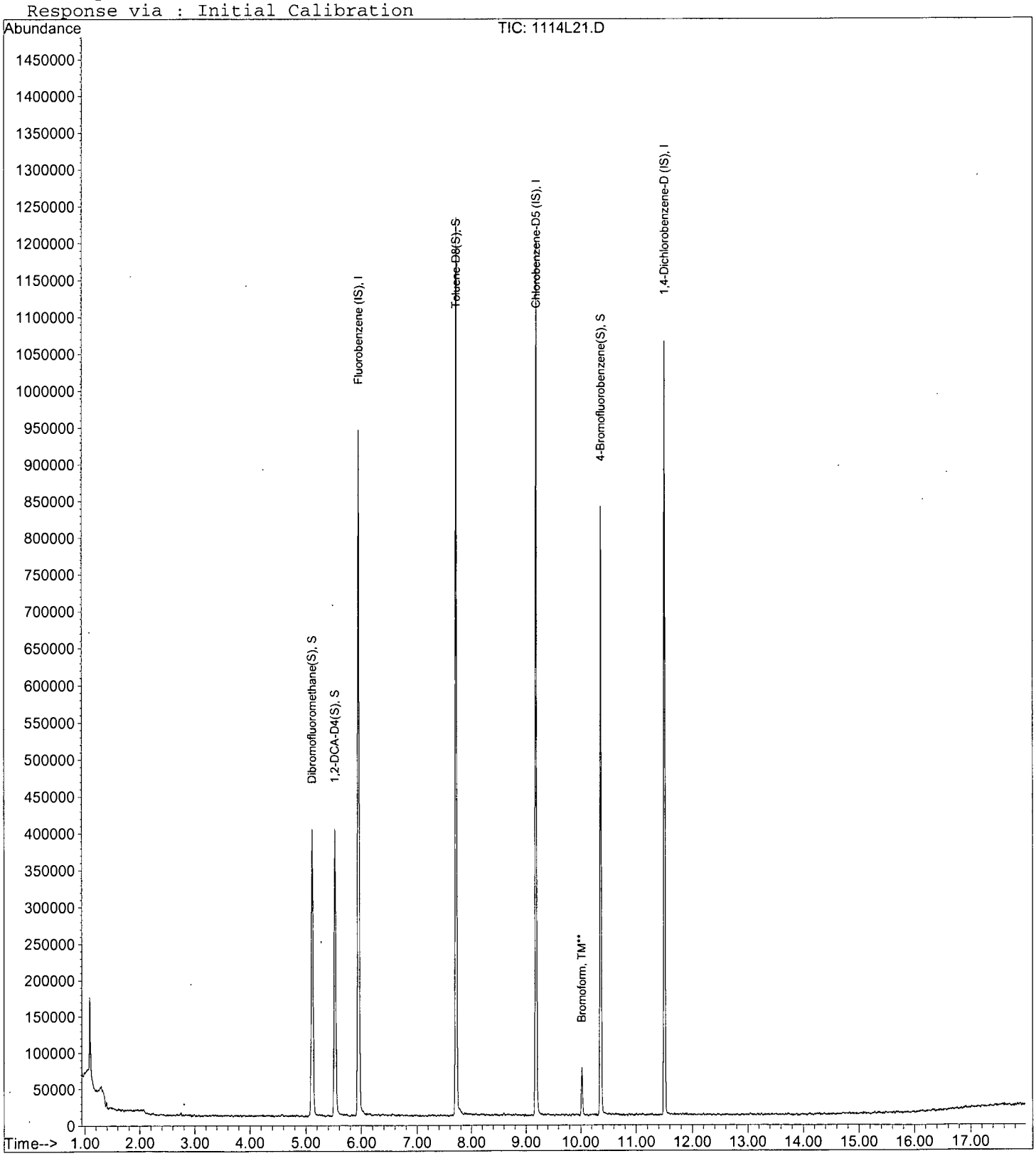
Quantitation Report

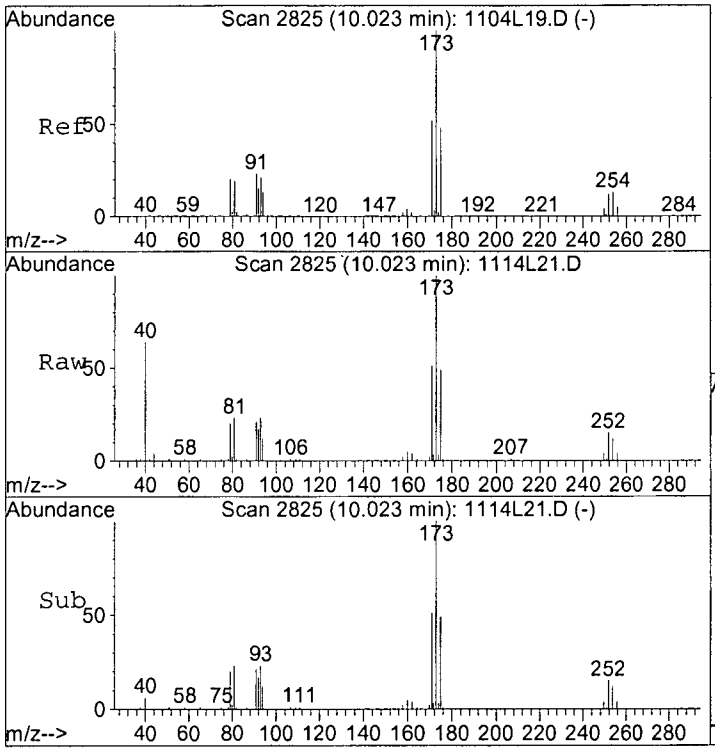
Data File : M:\LOKI\DATA\141110\1114L21.D
Acq On : 14 Nov 14 17:13
Sample : AZ07203W01
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 20
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 11:05 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

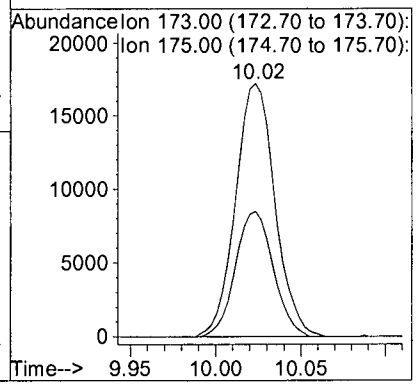





#71
Bromoform
Concen: 4.07807 ppb
RT: 10.02 min Scan# 2825
Delta R.T. 0.00 min
Lab File: 1114L21.D
Acq: 14 Nov 14 17:13

Tgt Ion:173 Resp: 27539

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 173 | 100 | | |
| 175 | 49.4 | 33.4 | 62.0 |



# EPA METHOD 8260C
# Volatile Organic Compounds
# Calibration Data

APPL, INC.

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 11/10/14
Matrix: Instrument: Loki Initials:

| | | Compound | 1107L35.D | 1110L06.D | 1110L07.D | 1110L08.D | 1110L09.D | 1110L10.D | 1110L11.D | 1110L12.D | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.1 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | | | | | |
| 1 | I | Fluorobenzene (IS) | ISTD | | | | | | | | | | | | | |
| 2 | TM | Dichlorodifluoromethane | | 0.4939 | 0.4658 | 0.3556 | 0.3885 | 0.4031 | 0.4427 | 0.4445 | | | 0.43 | 11 | TM | |
| 3 | TM | Freon 114 | | 0.4458 | 0.4383 | 0.3200 | 0.3670 | 0.3922 | 0.4042 | 0.4264 | | | 0.40 | 11 | TM | |
| 4 | TM**L | Chloromethane | | | 1.100 | 0.7985 | 0.7527 | 0.7528 | 0.7685 | | | | 0.83 | 18 | TM**L | 1.000 |
| 5 | TM* | Vinyl chloride | 0.9467 | 0.6488 | 0.6281 | 0.5392 | 0.5512 | 0.5476 | 0.5621 | | | | 0.63 | 23 | TM* | |
| 6 | TM | Bromomethane | | 0.3453 | 0.3052 | 0.2485 | 0.2406 | 0.2843 | | | | | 0.28 | 15 | TM | |
| 7 | TML | Chloroethane | | 0.5531 | 0.4138 | 0.3188 | 0.3018 | 0.2908 | 0.2585 | 0.2945 | | | 0.35 | 30 | TML | 0.997 |
| 8 | TM | Dichlorofluoromethane | | 1.177 | 1.134 | 1.046 | 0.9758 | 0.9623 | 0.9319 | 0.8996 | | | 1.0 | 10 | TM | |
| 9 | TM | Trichlorofluoromethane | | 0.8900 | 0.8260 | 0.7000 | 0.6947 | 0.6664 | 0.6723 | 0.6675 | | | 0.73 | 12 | TM | |
| 10 | TM | Acrolein | | 0.0354 | 0.0320 | 0.0296 | 0.0279 | 0.0272 | 0.0262 | 0.0248 | | | 0.03 | 13 | TM | |
| 11 | TML | Acetone | | 0.8201 | 0.5266 | 0.1809 | 0.1515 | 0.1288 | 0.1166 | 0.1113 | | | 0.29 | 95 | TML | 1.000 |
| 12 | TM | Freon-113 | | 0.5087 | 0.4957 | 0.3969 | 0.4067 | 0.4061 | 0.3906 | 0.3791 | | | 0.43 | 12 | TM | |
| 13 | TM* | 1,1-DCE | | 0.7855 | 0.7605 | 0.6853 | 0.6739 | 0.6536 | 0.6507 | 0.6414 | | | 0.69 | 8.2 | TM* | |
| 14 | TM | t-Butanol | | 0.0362 | 0.0334 | 0.0286 | 0.0281 | 0.0273 | 0.0273 | 0.0282 | | | 0.03 | 12 | TM | |
| 15 | TM | Acetonitrile | | 0.0692 | 0.0641 | 0.0531 | 0.0539 | 0.0513 | 0.0516 | 0.0518 | | | 0.06 | 13 | TM | |
| 16 | TM | Methyl Acetate | | | 0.4119 | 0.3455 | 0.3316 | 0.3152 | 0.3160 | 0.3179 | | | 0.34 | 11 | TM | |
| 17 | TM | Iodomethane | | 0.1033 | 0.1012 | 0.0734 | 0.0732 | 0.0872 | 0.0931 | | | | 0.09 | 15 | TM | |
| 18 | TM | Acrylonitrile | | 0.1327 | 0.1403 | 0.1385 | 0.1204 | 0.1155 | 0.1179 | 0.1157 | | | 0.13 | 8.7 | TM | |
| 19 | TML | Methylene chloride | | 0.8799 | 0.7129 | 0.5786 | 0.5168 | 0.5180 | 0.5011 | | | | 0.62 | 24 | TML | 1.000 |
| 20 | TM | Carbon disulfide | | 1.751 | 1.629 | 1.402 | 1.356 | 1.351 | 1.344 | 1.310 | | | 1.4 | 12 | TM | |
| 21 | TM | Methyl t-butyl ether (MtBE) | | 1.234 | 1.093 | 1.114 | 1.054 | 1.099 | 1.141 | 1.159 | | | 1.1 | 5.1 | TM | |
| 22 | TML | Trans-1,2-DCE | 0.8893 | 0.5223 | 0.5459 | 0.4826 | 0.4604 | 0.4434 | 0.4502 | 0.4498 | | | 0.53 | 28 | TML | 1.00 |
| 23 | TM | Diisopropyl Ether | | 1.408 | 1.332 | 1.307 | 1.333 | 1.441 | 1.546 | 1.562 | | | 1.4 | 7.3 | TM | |
| 24 | TM** | 1,1-DCA | | 1.045 | 0.9943 | 0.9134 | 0.8476 | 0.8351 | 0.8105 | 0.7476 | | | 0.88 | 12 | TM** | |
| 25 | TM | Hexane | | 0.4295 | 0.4171 | 0.3348 | 0.3826 | 0.4267 | 0.4725 | 0.5115 | | | 0.42 | 14 | TM | |
| 26 | TM | Vinyl Acetate | | 0.3535 | 0.3448 | 0.2971 | 0.2826 | 0.2904 | 0.2921 | 0.2836 | | | 0.31 | 9.7 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | | 1.178 | 1.091 | 1.098 | 1.098 | 1.173 | 1.254 | 1.315 | | | 1.2 | 7.4 | TM | |
| 28 | TML | MEK (2-Butanone) | | 0.2865 | 0.2241 | 0.1777 | 0.1586 | 0.1562 | 0.1642 | 0.1572 | | | 0.19 | 26 | TML | 1.000 |
| 29 | TM | Cis-1,2-DCE | | 0.5456 | 0.5295 | 0.5198 | 0.4979 | 0.5086 | 0.5249 | 0.5159 | | | 0.52 | 2.9 | TM | |
| 30 | TM | 2,2-Dichloropropane | | 0.7903 | 0.7007 | 0.6320 | 0.6197 | 0.5994 | 0.6050 | 0.5901 | | | 0.65 | 11 | TM | |
| 31 | TM* | Chloroform | 1.682 | 0.9936 | 0.9426 | 0.9392 | 0.8762 | 0.8527 | 0.8345 | | | | 1.0 | 29 | TM* | |
| 32 | TM | Bromochloromethane | | 0.2958 | 0.3045 | 0.2838 | 0.2601 | 0.2508 | 0.2372 | 0.2228 | | | 0.27 | 12 | TM | |
| 33 | S | Dibromofluoromethane(S) | | 0.6393 | 0.6267 | 0.5671 | 0.5218 | 0.5238 | 0.5177 | 0.5046 | | | 0.56 | 9.9 | S | |
| 34 | TM | 1,1,1-TCA | | 0.8369 | 0.8029 | 0.7666 | 0.7110 | 0.7195 | 0.7052 | 0.6913 | | | 0.75 | 7.4 | TM | |
| 35 | TM | Cyclohexane | | 0.3605 | 0.3565 | 0.3026 | 0.3315 | 0.3528 | 0.3767 | 0.3874 | | | 0.35 | 8.0 | TM | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 11/10/14
Instrument: Loki

Initials:

| | | Compound | 0.1 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | TM | 1,1-Dichloropropene | | 0.5440 | 0.5555 | 0.5191 | 0.5471 | 0.5782 | 0.5971 | 0.6110 | | | 0.56 | 5.7 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | | 0.9801 | 0.9911 | 0.9276 | 1.022 | 1.136 | 1.242 | 1.289 | | | 1.1 | 13 | TM | |
| 38 | S | 1,2-DCA-D4(S) | | 0.7515 | 0.6757 | 0.6408 | 0.5762 | 0.5696 | 0.5656 | 0.5497 | | | 0.62 | 12 | S | |
| 39 | TML | Carbon Tetrachloride | 1.256 | 0.7476 | 0.7556 | 0.6740 | 0.6517 | 0.6569 | 0.6338 | 0.6310 | | | 0.75 | 28 | TML | 1.000 |
| 40 | TM | Tert Amyl Methyl Ether | | 1.086 | 0.9100 | 1.046 | 1.074 | 1.128 | 1.177 | 1.185 | | | 1.1 | 8.6 | TM | |
| 41 | TML | 1,2-DCA | 1.239 | 0.7369 | 0.6835 | 0.6779 | 0.6542 | 0.6340 | 0.6239 | 0.5905 | | | 0.73 | 29 | TML | 0.999 |
| 42 | TML | Benzene | 3.300 | 1.889 | 1.839 | 1.859 | 1.831 | 1.851 | 1.857 | 1.805 | | | 2.0 | 25 | TML | 1.000 |
| 43 | TM | TCE | | 0.5345 | 0.4959 | 0.5002 | 0.4668 | 0.4662 | 0.4651 | 0.4656 | | | 0.48 | 5.5 | TM | |
| 44 | TM | 2-Pentanone | | 0.3013 | 0.2835 | 0.2783 | 0.2908 | 0.2943 | 0.3011 | 0.2976 | | | 0.29 | 3.0 | TM | |
| 45 | TM* | 1,2-Dichloropropane | | 0.5355 | 0.6051 | 0.5541 | 0.5250 | 0.5224 | 0.5218 | 0.5047 | | | 0.54 | 6.1 | TM* | |
| 46 | TM | Bromodichloromethane | | 0.7433 | 0.7270 | 0.7098 | 0.6721 | 0.6571 | 0.6511 | 0.6314 | | | 0.68 | 6.2 | TM | |
| 47 | TM | Methyl Cyclohexane | | 0.5155 | 0.5410 | 0.4761 | 0.5325 | 0.5828 | 0.6470 | 0.6983 | | | 0.57 | 14 | TM | |
| 48 | TM | Dibromomethane | | 0.3565 | 0.3520 | 0.3243 | 0.3090 | 0.2942 | 0.2870 | 0.2686 | | | 0.31 | 11 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | | 0.0155 | 0.0147 | 0.0187 | 0.0151 | 0.0130 | 0.0126 | | | | 0.01 | 15 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | | | 0.4390 | 0.3480 | 0.3389 | 0.3163 | 0.3278 | 0.3572 | | | 0.35 | 12 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | | 0.4490 | 0.4165 | 0.4263 | 0.3846 | 0.3798 | 0.3783 | 0.3830 | | | 0.40 | 7.0 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | | 0.8059 | 0.6926 | 0.7178 | 0.6757 | 0.7131 | 0.7454 | 0.7861 | | | 0.73 | 6.5 | TM | |
| 53 | TM* | Toluene | | 1.721 | 1.691 | 1.885 | 1.908 | 1.966 | 2.002 | 1.967 | | | 1.9 | 6.6 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | | 0.6410 | 0.6022 | 0.6438 | 0.6187 | 0.6229 | 0.6392 | 0.6608 | | | 0.63 | 3.1 | TM | |
| 55 | TM | 1,1,2-TCA | | 0.3851 | 0.3926 | 0.3783 | 0.3588 | 0.3522 | 0.3452 | 0.3333 | | | 0.36 | 6.1 | TM | |
| 56 | TM | 2-Hexanone | | 0.2433 | 0.2220 | 0.2167 | 0.2045 | 0.2021 | 0.2158 | 0.2372 | | | 0.22 | 7.0 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | | | | | | | | | | | |
| 58 | S | Toluene-D8(S) | | 2.047 | 1.803 | 1.907 | 1.915 | 2.044 | 2.063 | 2.074 | | | 2.0 | 5.3 | S | |
| 59 | TM | 1,2-EDB | | 0.5265 | 0.5062 | 0.4931 | 0.4885 | 0.4774 | 0.4538 | 0.4462 | | | 0.48 | 5.8 | TM | |
| 60 | TML | Tetrachloroethene | 1.079 | 0.6862 | 0.6282 | 0.6768 | 0.6374 | 0.6005 | 0.5922 | 0.5849 | | | 0.69 | 24 | TML | 1.000 |
| 61 | TM | 1-Chlorohexane | | 0.4985 | 0.5309 | 0.5248 | 0.5744 | 0.6167 | 0.6704 | 0.6989 | | | 0.59 | 13 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | | 0.7675 | 0.6411 | 0.6790 | 0.6183 | 0.6080 | 0.5807 | 0.5801 | | | 0.64 | 10 | TM | |
| 63 | TM | m&p-Xylene | | 0.7652 | 0.7265 | 0.8429 | 0.9013 | 0.9625 | 0.9760 | 0.9761 | | | 0.88 | 12 | TM | |
| 64 | TM | o-Xylene | | 0.7555 | 0.6476 | 0.8020 | 0.7947 | 0.8690 | 0.9128 | 0.9506 | | | 0.82 | 13 | TM | |
| 65 | TML | Styrene | | 1.105 | 1.071 | 1.327 | 1.396 | 1.564 | 1.625 | 1.687 | | | 1.4 | 18 | TML | 1.000 |
| 66 | S | 4-Bromofluorobenzene(S) | | 0.6944 | 0.6458 | 0.7001 | 0.7174 | 0.7557 | 0.7615 | 0.8108 | | | 0.73 | 7.4 | S | |
| 67 | TM | 1,3-Dichloropropane | | 0.8344 | 0.7814 | 0.8572 | 0.8139 | 0.8115 | 0.7933 | 0.7812 | | | 0.81 | 3.5 | TM | |
| 68 | TM | Dibromochloromethane | | 0.6426 | 0.5867 | 0.6513 | 0.6150 | 0.5844 | 0.5632 | 0.5637 | | | 0.60 | 6.0 | TM | |
| 69 | TM** | Chlorobenzene | | 1.725 | 1.592 | 1.610 | 1.540 | 1.511 | 1.506 | 1.495 | | | 1.6 | 5.2 | TM** | |
| 70 | TM* | Ethylbenzene | | 2.126 | 1.912 | 2.179 | 2.250 | 2.449 | 2.523 | 2.521 | | | 2.3 | 10 | TM* | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

## Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Initial Cal. Date: 11/10/14
Instrument: Loki

Initials:

| | | Compound | 0.1 | 0.5 | 1 | 5 | 10 | 20 | 40 | 100 | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | TM** | Bromoform | | 0.5043 | 0.4491 | 0.4472 | 0.4258 | 0.4090 | 0.3865 | 0.4096 | | | 0.43 | 8.9 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | | | | | | | | | | | |
| 73 | TM | Isopropylbenzene | | 3.494 | 3.245 | 3.181 | 3.257 | 3.487 | 3.820 | 3.710 | | | 3.5 | 7.1 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | | 1.462 | 1.384 | 1.138 | 1.032 | 0.9796 | 0.9452 | | | | 1.2 | 19 | TM**L | 1.000 |
| 75 | TML | 1,2,3-Trichloropropane | | 0.4059 | 0.3912 | 0.3292 | 0.3106 | 0.3016 | 0.2824 | 0.2668 | | | 0.33 | 16 | TML | 0.999 |
| 76 | TM | t-1,4-Dichloro-2-Butene | | 0.3178 | 0.2687 | 0.2286 | 0.2504 | 0.2498 | 0.2324 | 0.2349 | | | 0.25 | 12 | TM | |
| 77 | TM | Bromobenzene | | 1.391 | 1.185 | 1.170 | 1.133 | 1.132 | 1.137 | 1.087 | | | 1.2 | 8.5 | TM | |
| 78 | TM | n-Propylbenzene | | 4.051 | 3.706 | 3.954 | 4.130 | 4.532 | 4.795 | 4.573 | | | 4.2 | 9.2 | TM | |
| 79 | TM | 4-Ethyltoluene | | 3.328 | 2.905 | 3.332 | 3.518 | 3.872 | 4.053 | 3.859 | | | 3.6 | 11 | TM | |
| 80 | TM | 2-Chlorotoluene | | 2.833 | 2.444 | 2.692 | 2.731 | 2.858 | 2.915 | 2.745 | | | 2.7 | 5.6 | TM | |
| 81 | TM | 1,3,5-Trimethylbenzene | | 2.795 | 2.636 | 3.116 | 3.296 | 3.486 | 3.573 | 3.381 | | | 3.2 | 11 | TM | |
| 82 | TM | 4-Chlorotoluene | | 3.022 | 2.863 | 3.252 | 3.295 | 3.423 | 3.426 | 3.273 | | | 3.2 | 6.5 | TM | |
| 83 | TM | Tert-Butylbenzene | | 2.546 | 2.342 | 2.400 | 2.378 | 2.586 | 2.814 | 2.810 | | | 2.6 | 7.7 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | | 2.958 | 2.434 | 2.879 | 3.020 | 3.344 | 3.493 | 3.451 | | | 3.1 | 12 | TM | |
| 85 | TM | Sec-Butylbenzene | | 3.103 | 3.305 | 3.545 | 3.650 | 3.978 | 4.164 | 4.173 | | | 3.7 | 11 | TM | |
| 86 | TM | p-Isopropyltoluene | | 2.877 | 2.728 | 2.959 | 3.088 | 3.349 | 3.536 | 3.593 | | | 3.2 | 11 | TM | |
| 87 | TM | Benzyl Chloride | | 1.692 | 1.477 | 1.330 | 1.253 | 1.223 | 1.240 | 1.253 | | | 1.4 | 13 | TM | |
| 88 | TM | 1,3-DCB | | 2.278 | 2.116 | 2.277 | 2.132 | 2.150 | 2.108 | 2.072 | | | 2.2 | 3.8 | TM | |
| 89 | TM | 1,4-DCB | | 3.003 | 2.467 | 2.404 | 2.220 | 2.198 | 2.168 | 2.100 | | | 2.4 | 13 | TM | |
| 90 | TM | n-Butylbenzene | | 2.934 | 2.781 | 2.833 | 2.860 | 3.145 | 3.408 | 3.501 | | | 3.1 | 9.5 | TM | |
| 91 | TM | 1,2-DCB | | 2.411 | 2.157 | 2.058 | 1.980 | 1.978 | 1.985 | 1.987 | | | 2.1 | 7.7 | TM | |
| 92 | TM | Hexachloroethane | | 0.9988 | 0.9590 | 0.7954 | 0.7504 | 0.7307 | 0.7272 | 0.7327 | | | 0.81 | 14 | TM | |
| 93 | TM | 1,2-Dibromo-3-chloropropane | | 0.2541 | 0.1707 | 0.2103 | 0.1893 | 0.1843 | 0.1984 | 0.1869 | | | 0.20 | 14 | TM | |
| 94 | TM | 1,2,4-Trichlorobenzene | | 1.157 | 1.153 | 1.211 | 1.203 | 1.240 | 1.490 | 1.516 | | | 1.3 | 12 | TM | |
| 95 | TM | Hexachlorobutadiene | | | 1.009 | 0.8454 | 0.7970 | 0.7932 | 0.8246 | 0.8090 | | | 0.85 | 9.7 | TM | |
| 96 | TMQ | Naphthalene | 1.754 | 1.010 | 0.9616 | 1.147 | 1.232 | 1.414 | 1.941 | | | | 1.4 | 28 | TMQ | 1.000 |
| 97 | TM | 1,2,3-Trichlorobenzene | | 0.7515 | 0.6356 | 0.7658 | 0.7714 | 0.8390 | 0.9919 | 0.9389 | | | 0.81 | 15 | TM | |
| 98 | | | | | | | | | | | | | | | | |
| 99 | | | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | | | | | |
| 103 | | | | | | | | | | | | | | | | |
| 104 | | | | | | | | | | | | | | | | |
| 105 | | | | | | | | | | | | | | | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141104\1107L35.D
Acq On : 8 Nov 14 2:45
Sample : 0.1ug/L Vol Std 11-07-14
Misc : 10mL w/5uL IS:10-06-14

Vial: 30
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:05:44 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 496448 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 438208 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 207296 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 6135 | 0.36788 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 1.533% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 6390 | 0.35144 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 1.405% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 16824 | 0.33797 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 1.358% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 6653 | 0.34879 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 1.524% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 929 | 0.11358 ppb | | 87 |
| 3) Freon 114 | 1.10 | 85 | 932 | 0.10916 ppb | | 92 |
| 4) Chloromethane | 1.14 | 50 | 5708 | 0.32675 ppb | | 96 |
| 5) Vinyl chloride | 1.22 | 62 | 1880 | 0.16236 ppb | | 95 |
| 6) Bromomethane | 1.46 | 94 | 974 | 0.35314 ppb | | 89 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 3513 | 0.17608 ppb | | 92 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 2395 | 0.16957 ppb | | 97 |
| 10) Acrolein | 2.10 | 56 | 3475 | 4.51438 ppb | # | 91 |
| 11) Acetone | 2.25 | 43 | 2086 | -1.24745 ppb | | 92 |
| 12) Freon-113 | 2.20 | 101 | 1158 | 0.13681 ppb | # | 73 |
| 13) 1,1-DCE | 2.18 | 61 | 2475 | 0.16882 ppb | | 88 |
| 14) t-Butanol | 2.87 | 59 | 2788 | 4.73922 ppb | # | 90 |
| 15) Acetonitrile | 2.52 | 41 | 6599 | 6.05212 ppb | # | 1 |
| 16) Methyl Acetate | 2.60 | 43 | 1698 | 0.24664 ppb | # | 80 |
| 17) Iodomethane | 2.31 | 142 | 421 | 0.86596 ppb | # | 43 |
| 18) Acrylonitrile | 2.84 | 52 | 237 | 0.10020 ppb | # | 1 |
| 19) Methylene chloride | 2.68 | 84 | 12262 | 0.81689 ppb | | 93 |
| 20) Carbon disulfide | 2.37 | 76 | 5819 | 0.23006 ppb | # | 90 |
| 21) Methyl t-butyl ether (MtBE | 3.01 | 73 | 3681 | 0.16836 ppb | # | 81 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 1766 | 0.54193 ppb | | 94 |
| 23) Diisopropyl Ether | 3.71 | 45 | 3694 | 0.12872 ppb | # | 83 |
| 24) 1,1-DCA | 3.54 | 63 | 3430 | 0.17489 ppb | | 98 |
| 25) Hexane | 3.37 | 57 | 1001 | 0.12098 ppb | # | 82 |
| 26) Vinyl Acetate | 3.71 | 43 | 1134 | 0.17549 ppb | # | 77 |
| 27) Ethyl tert Butyl Ether | 4.30 | 59 | 3359 | 0.14764 ppb | # | 84 |
| 28) MEK (2-Butanone) | 4.54 | 43 | 1315 | 0.37104 ppb | # | 51 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 2352 | 0.20679 ppb | # | 43 |
| 30) 2,2-Dichloropropane | 4.41 | 77 | 2161 | 0.15074 ppb | | 90 |
| 31) Chloroform | 4.90 | 83 | 3340 | 0.14142 ppb | | 77 |
| 32) Bromochloromethane | 4.77 | 128 | 579 | 0.10940 ppb | # | 31 |
| 34) 1,1,1-TCA | 5.10 | 97 | 2767 | 0.16185 ppb | | 98 |
| 35) Cyclohexane | 5.16 | 41 | 849 | 0.11073 ppb | # | 70 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 1916 | 0.14555 ppb | # | 82 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 1953 | 0.08691 ppb | | 98 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 2494 | 0.10567 ppb | | 84 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 2904 | 0.13689 ppb | # | 87 |
| 42) Benzene | 5.58 | 78 | 6553 | 0.32259 ppb | # | 93 |
| 43) TCE | 6.38 | 95 | 2057 | 0.18267 ppb | | 83 |
| 44) 2-Pentanone | 6.64 | 43 | 23441 | 0.75271 ppb | | 94 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141104\1107L35.D
Acq On : 8 Nov 14 2:45
Sample : 0.1ug/L Vol Std 11-07-14
Misc : 10mL w/5uL IS:10-06-14

Vial: 30
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:05:44 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 45) 1,2-Dichloropropane | 6.62 | 63 | 1938 | 0.15352 ppb | # | 88 |
| 46) Bromodichloromethane | 6.95 | 83 | 2469 | 0.15924 ppb | # | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 1545 | 0.12820 ppb | # | 57 |
| 48) Dibromomethane | 6.75 | 93 | 1181 | 0.16333 ppb | | 87 |
| 49) 2-Chloroethyl vinyl ether | 7.22 | 106 | 46 | 0.14702 ppb | # | 1 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 1227 | 1.31451 ppb | # | 92 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 1042 | 0.12624 ppb | | 91 |
| 52) Cis-1,3-Dichloropropene | 7.45 | 75 | 5645 | 0.28080 ppb | | 88 |
| 53) Toluene | 7.79 | 91 | 5937 | 0.14339 ppb | | 96 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 3527 | 0.22282 ppb | # | 78 |
| 55) 1,1,2-TCA | 8.21 | 83 | 1032 | 0.12731 ppb | | 85 |
| 56) 2-Hexanone | 8.51 | 43 | 990 | 0.18116 ppb | # | 70 |
| 59) 1,2-EDB | 8.69 | 107 | 1465 | 0.15334 ppb | # | 66 |
| 60) Tetrachloroethene | 8.34 | 166 | 1892 | 0.14735 ppb | | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 1236 | 0.11591 ppb | | 93 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 1971 | 0.15927 ppb | | 83 |
| 63) m&p-Xylene | 9.46 | 106 | 4474 | 1.27662 ppb | | 69 |
| 64) o-Xylene | 9.84 | 106 | 1965 | 0.12364 ppb | | 85 |
| 65) Styrene | 9.86 | 104 | 2917 | 0.97783 ppb | # | 84 |
| 67) 1,3-Dichloropropane | 8.37 | 76 | 2275 | 0.14038 ppb | | 85 |
| 68) Dibromochloromethane | 8.60 | 129 | 1451 | 0.12586 ppb | # | 60 |
| 69) Chlorobenzene | 9.21 | 112 | 4784 | 0.15282 ppb | | 93 |
| 70) Ethylbenzene | 9.34 | 91 | 5507 | 0.12255 ppb | | 86 |
| 71) Bromoform | 10.03 | 173 | 1150 | 0.14275 ppb | # | 77 |
| 73) Isopropylbenzene | 10.23 | 105 | 4805 | 0.14355 ppb | | 98 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 1659 | -0.45102 ppb | # | 92 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 636 | -0.24593 ppb | # | 16 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 301 | 0.13227 ppb | # | 27 |
| 77) Bromobenzene | 10.50 | 156 | 1961 | 0.17452 ppb | | 92 |
| 78) n-Propylbenzene | 10.63 | 91 | 5663 | 0.14123 ppb | | 95 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 4360 | 0.14513 ppb | | 90 |
| 80) 2-Chlorotoluene | 10.81 | 91 | 4332 | 0.16152 ppb | | 94 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 3500 | 0.12331 ppb | | 93 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 4332 | 0.14363 ppb | | 88 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 3537 | 0.14443 ppb | | 96 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 3668 | 0.12962 ppb | | 89 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 4962 | 0.14118 ppb | | 88 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 4755 | 0.15517 ppb | # | 87 |
| 87) Benzyl Chloride | 11.67 | 91 | 1432 | 0.12402 ppb | # | 62 |
| 88) 1,3-DCB | 11.43 | 146 | 3014 | 0.14932 ppb | | 96 |
| 89) 1,4-DCB | 11.52 | 146 | 3683 | 0.16278 ppb | # | 86 |
| 90) n-Butylbenzene | 11.90 | 91 | 4199 | 0.14040 ppb | | 92 |
| 91) 1,2-DCB | 11.89 | 146 | 3569 | 0.17420 ppb | | 97 |
| 92) Hexachloroethane | 12.15 | 117 | 1583 | 0.20305 ppb | # | 30 |
| 93) 1,2-Dibromo-3-chloropropan | 12.65 | 157 | 88 | -0.33310 ppb | | 94 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 1885 | 0.14475 ppb | # | 65 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 1417 | 0.13457 ppb | | 92 |
| 96) Naphthalene | 13.72 | 128 | 1454 | 0.78517 ppb | | 92 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 1285 | 0.15620 ppb | # | 78 |

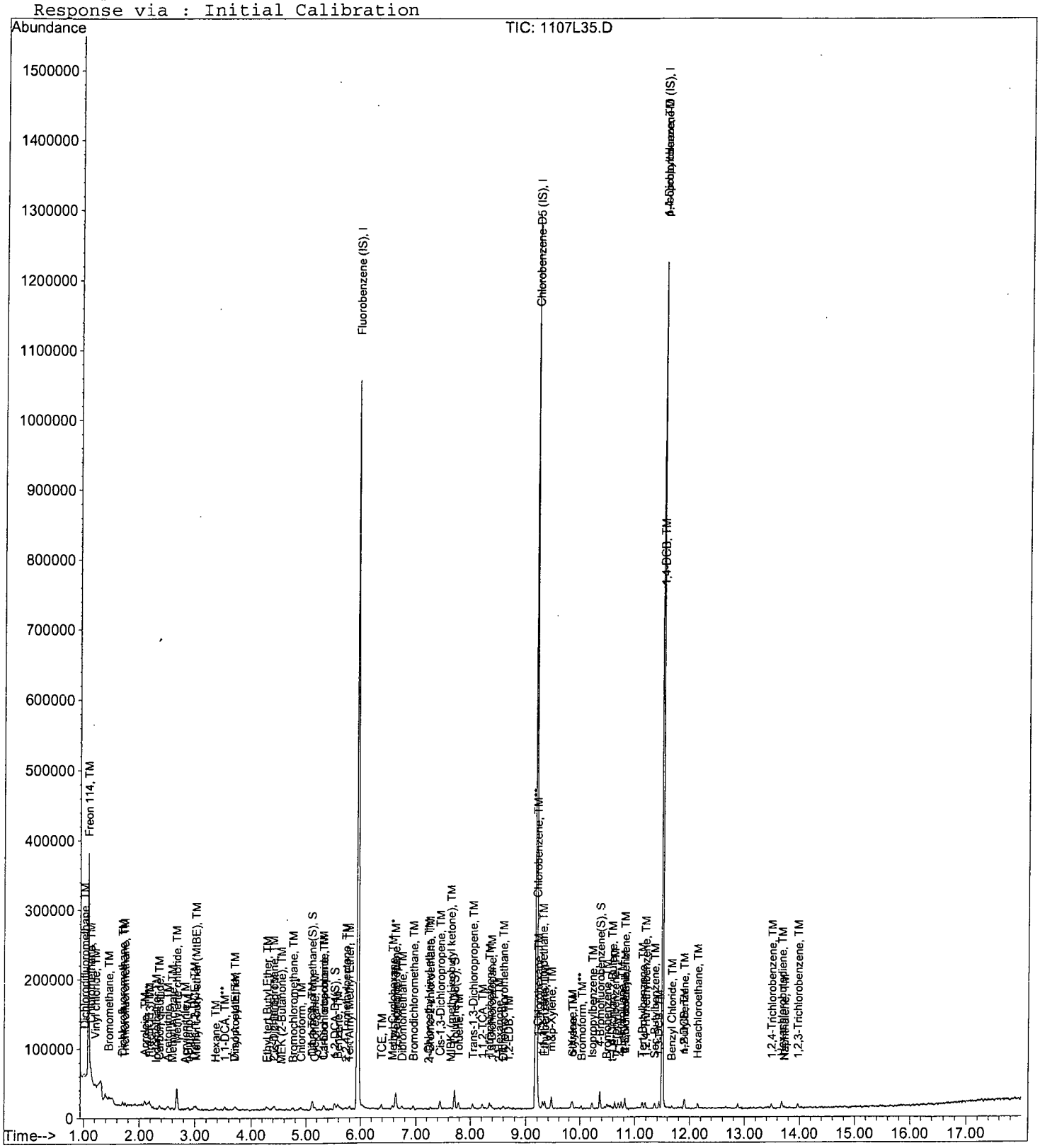
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141104\1107L35.D  Vial: 30
Acq On : 8 Nov 14 2:45  Operator: DG,SV,RS
Sample : 0.1ug/L Vol Std 11-07-14  Inst : Loki
Misc : 10mL w/5uL IS:10-06-14  Multiplr: 1.00

Quant Time: Nov 18 10:27 2014  Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L06.D
Acq On : 10 Nov 14 18:32
Sample : 0.5ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 542848 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 465920 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 228480 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 13882 | 0.76127 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 3.169% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 16318 | 0.82076 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 3.286% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 38158 | 0.72095 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 2.896% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 12942 | 0.63813 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 2.785% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 5362 | 0.59952 ppb | | 96 |
| 3) Freon 114 | 1.10 | 85 | 4840 | 0.51843 ppb | | 86 |
| 4) Chloromethane | 1.14 | 50 | 14346 | 0.75102 ppb | | 86 |
| 5) Vinyl chloride | 1.22 | 62 | 7044 | 0.55633 ppb | | 99 |
| 6) Bromomethane | 1.45 | 94 | 3749 | 1.24309 ppb | | 92 |
| 7) Chloroethane | 1.53 | 64 | 6005 | 0.97584 ppb | # | 74 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 12776 | 0.58562 ppb | | 93 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 9663 | 0.62568 ppb | | 95 |
| 10) Acrolein | 2.10 | 56 | 19230 | 22.84640 ppb | # | 98 |
| 11) Acetone | 2.25 | 43 | 8904 | 1.54917 ppb | | 86 |
| 12) Freon-113 | 2.20 | 101 | 5523 | 0.59674 ppb | | 94 |
| 13) 1,1-DCE | 2.18 | 61 | 8528 | 0.53196 ppb | | 91 |
| 14) t-Butanol | 2.88 | 59 | 19639 | 30.53015 ppb | | 97 |
| 15) Acetonitrile | 2.52 | 41 | 37586 | 31.52473 ppb | # | 66 |
| 16) Methyl Acetate | 2.60 | 43 | 5342 | 0.70961 ppb | | 96 |
| 17) Iodomethane | 2.31 | 142 | 1122 | 1.34124 ppb | # | 75 |
| 18) Acrylonitrile | 2.97 | 52 | 1441 | 0.55717 ppb | | 90 |
| 19) Methylene chloride | 2.67 | 84 | 9553 | 0.49324 ppb | | 89 |
| 20) Carbon disulfide | 2.36 | 76 | 19010 | 0.68735 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 13399 | 0.56045 ppb | | 94 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 5671 | 0.88684 ppb | | 91 |
| 23) Diisopropyl Ether | 3.72 | 45 | 15288 | 0.48718 ppb | | 90 |
| 24) 1,1-DCA | 3.53 | 63 | 11347 | 0.52912 ppb | # | 87 |
| 25) Hexane | 3.36 | 57 | 4663 | 0.51540 ppb | | 91 |
| 26) Vinyl Acetate | 3.68 | 43 | 3838 | 0.54318 ppb | # | 84 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 12794 | 0.51428 ppb | # | 87 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 3110 | 0.80251 ppb | # | 72 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 5924 | 0.47633 ppb | # | 69 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 8580 | 0.54732 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 10788 | 0.41775 ppb | | 96 |
| 32) Bromochloromethane | 4.76 | 128 | 3211 | 0.55483 ppb | | 76 |
| 34) 1,1,1-TCA | 5.10 | 97 | 9086 | 0.48603 ppb | | 86 |
| 35) Cyclohexane | 5.16 | 41 | 3914 | 0.46684 ppb | | 84 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 5906 | 0.41031 ppb | # | 82 |
| 37) 2,2,4-Trimethylpentane | 5.72 | 57 | 10641 | 0.43304 ppb | # | 62 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 8117 | 0.46710 ppb | | 88 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 11788 | 0.50816 ppb | # | 90 |
| 41) 1,2-DCA | 5.62 | 62 | 8000 | 0.34233 ppb | # | 89 |
| 42) Benzene | 5.58 | 78 | 20514 | 0.62593 ppb | # | 88 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L06.D
Acq On : 10 Nov 14 18:32
Sample : 0.5ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 5803 | 0.47128 | ppb | | 90 |
| 44) 2-Pentanone | 6.64 | 43 | 163560 | 4.80315 | ppb | | 96 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 5814 | 0.42120 | ppb | # | 88 |
| 46) Bromodichloromethane | 6.95 | 83 | 8070 | 0.47601 | ppb | | 96 |
| 47) Methyl Cyclohexane | 6.59 | 83 | 5597 | 0.42473 | ppb | | 98 |
| 48) Dibromomethane | 6.75 | 93 | 3870 | 0.48945 | ppb | | 83 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 168 | 0.49104 | ppb | # | 1 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 5093 | 1.76172 | ppb | | 97 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 4875 | 0.54015 | ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 8750 | 0.39804 | ppb | | 93 |
| 53) Toluene | 7.78 | 91 | 18683 | 0.41266 | ppb | | 96 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 6959 | 0.40207 | ppb | | 93 |
| 55) 1,1,2-TCA | 8.21 | 83 | 4181 | 0.47169 | ppb | | 92 |
| 56) 2-Hexanone | 8.50 | 43 | 2641 | 0.44197 | ppb | # | 87 |
| 59) 1,2-EDB | 8.69 | 107 | 4906 | 0.48295 | ppb | | 93 |
| 60) Tetrachloroethene | 8.34 | 166 | 6394 | 0.46835 | ppb | | 90 |
| 61) 1-Chlorohexane | 9.22 | 91 | 4645 | 0.40971 | ppb | | 94 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 7152 | 0.54355 | ppb | | 98 |
| 63) m&p-Xylene | 9.46 | 106 | 14261 | 1.74045 | ppb | | 84 |
| 64) o-Xylene | 9.85 | 106 | 7040 | 0.41661 | ppb | | 96 |
| 65) Styrene | 9.86 | 104 | 10296 | 1.18308 | ppb | # | 82 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 7775 | 0.45123 | ppb | | 95 |
| 68) Dibromochloromethane | 8.60 | 129 | 5988 | 0.48851 | ppb | | 89 |
| 69) Chlorobenzene | 9.21 | 112 | 16075 | 0.48295 | ppb | | 97 |
| 70) Ethylbenzene | 9.34 | 91 | 19808 | 0.41457 | ppb | | 99 |
| 71) Bromoform | 10.02 | 173 | 4699 | 0.54860 | ppb | | 89 |
| 73) Isopropylbenzene | 10.22 | 105 | 15966 | 0.43276 | ppb | | 90 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 6679 | 0.09057 | ppb | | 91 |
| 75) 1,2,3-Trichloropropane | 10.56 | 110 | 1855 | 0.18680 | ppb | | 95 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 1452 | 0.57888 | ppb | | 96 |
| 77) Bromobenzene | 10.49 | 156 | 6355 | 0.51313 | ppb | | 91 |
| 78) n-Propylbenzene | 10.63 | 91 | 18513 | 0.41890 | ppb | | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 15208 | 0.45929 | ppb | | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 12944 | 0.43787 | ppb | | 93 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 12773 | 0.40828 | ppb | | 95 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 13809 | 0.41538 | ppb | # | 73 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 11634 | 0.43102 | ppb | # | 82 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 13518 | 0.43342 | ppb | | 91 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 14179 | 0.36602 | ppb | | 92 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 13147 | 0.38926 | ppb | # | 89 |
| 87) Benzyl Chloride | 11.67 | 91 | 7733 | 0.60761 | ppb | | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 10409 | 0.46787 | ppb | | 87 |
| 89) 1,4-DCB | 11.52 | 146 | 13724 | 0.55032 | ppb | | 93 |
| 90) n-Butylbenzene | 11.91 | 91 | 13409 | 0.40679 | ppb | | 94 |
| 91) 1,2-DCB | 11.89 | 146 | 11019 | 0.48796 | ppb | | 96 |
| 92) Hexachloroethane | 12.14 | 117 | 4564 | 0.53115 | ppb | | 90 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 1161 | 0.25789 | ppb | # | 45 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 5285 | 0.36821 | ppb | | 89 |
| 95) Hexachlorobutadiene | 13.67 | 225 | 5743 | 0.63657 | ppb | | 88 |
| 96) Naphthalene | 13.72 | 128 | 4615 | 0.96895 | ppb | | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 3434 | 0.37873 | ppb | | 91 |

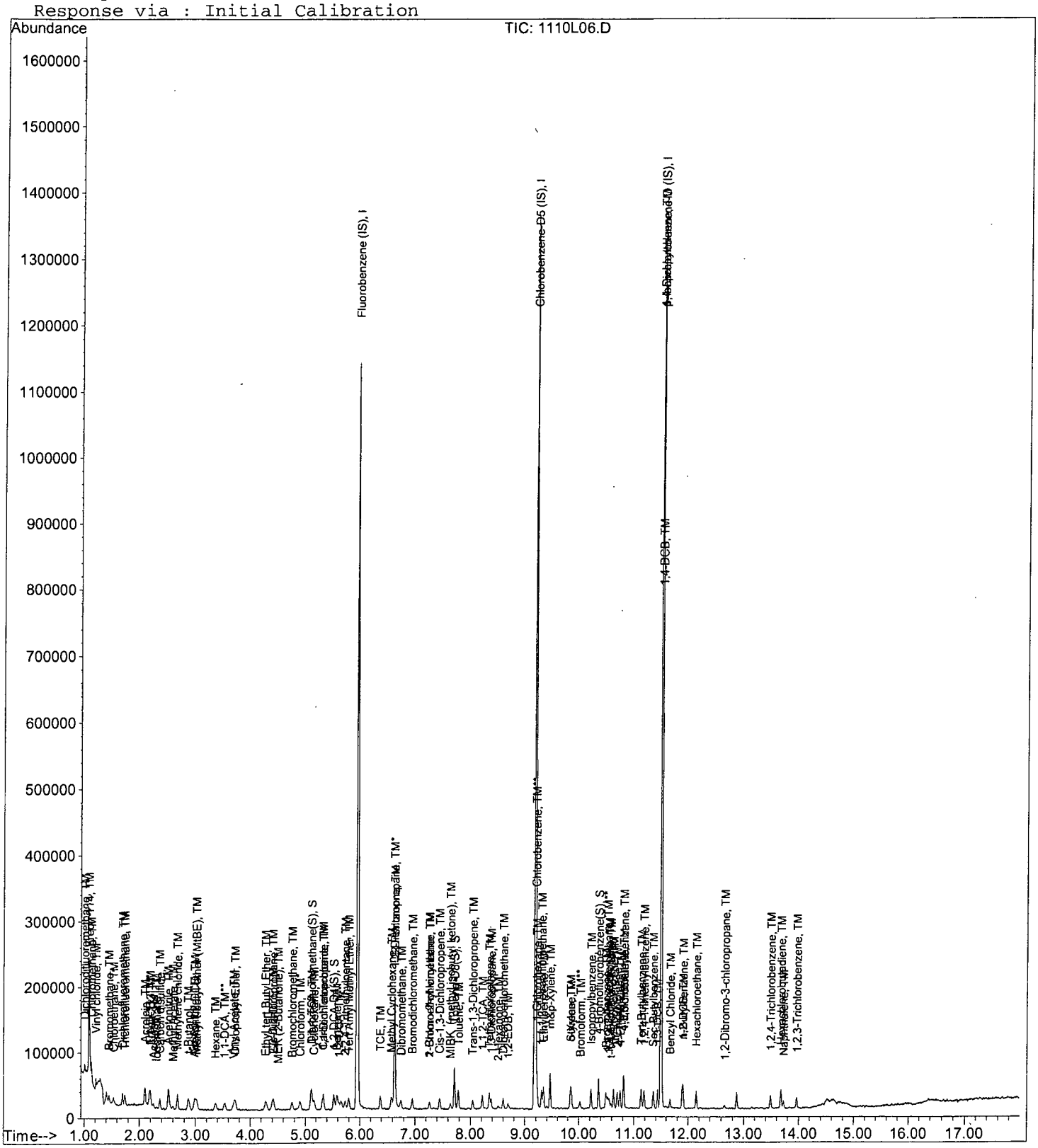
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141110\1110L06.D  Vial: 5
Acq On : 10 Nov 14 18:32  Operator: DG,SV,RS
Sample : 0.5ug/L Vol Std 11-10-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Nov 18 10:27 2014  Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L07.D
Acq On : 10 Nov 14 19:01
Sample : 1.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 557888 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 495104 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 251392 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 27971 | 1.49253 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 6.218% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 30156 | 1.47589 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 5.908% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 71423 | 1.26990 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 5.101% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 25580 | 1.18693 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 5.182% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 10394 | 1.13082 ppb | | 95 |
| 3) Freon 114 | 1.10 | 85 | 9781 | 1.01944 ppb | | 88 |
| 4) Chloromethane | 1.14 | 50 | 24536 | 1.24985 ppb | | 96 |
| 5) Vinyl chloride | 1.22 | 62 | 14017 | 1.07720 ppb | | 92 |
| 6) Bromomethane | 1.45 | 94 | 6811 | 2.19751 ppb | | 95 |
| 7) Chloroethane | 1.53 | 64 | 9234 | 1.46012 ppb | | 92 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 25316 | 1.12914 ppb | | 94 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 18433 | 1.16137 ppb | | 93 |
| 10) Acrolein | 2.10 | 56 | 35655 | 41.21831 ppb | # | 92 |
| 11) Acetone | 2.25 | 43 | 11752 | 2.61797 ppb | # | 81 |
| 12) Freon-113 | 2.20 | 101 | 11061 | 1.16288 ppb | | 81 |
| 13) 1,1-DCE | 2.18 | 61 | 16970 | 1.03002 ppb | | 99 |
| 14) t-Butanol | 2.88 | 59 | 37316 | 56.44634 ppb | | 97 |
| 15) Acetonitrile | 2.52 | 41 | 71545 | 58.38963 ppb | # | 87 |
| 16) Methyl Acetate | 2.60 | 43 | 9192 | 1.18811 ppb | | 94 |
| 17) Iodomethane | 2.31 | 142 | 2259 | 2.11421 ppb | | 98 |
| 18) Acrylonitrile | 2.98 | 52 | 3131 | 1.17799 ppb | | 91 |
| 19) Methylene chloride | 2.67 | 84 | 15908 | 0.99077 ppb | | 92 |
| 20) Carbon disulfide | 2.37 | 76 | 36346 | 1.27874 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 24384 | 0.99243 ppb | | 91 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 12182 | 1.45700 ppb | | 89 |
| 23) Diisopropyl Ether | 3.72 | 45 | 29715 | 0.92140 ppb | | 90 |
| 24) 1,1-DCA | 3.53 | 63 | 22189 | 1.00680 ppb | | 96 |
| 25) Hexane | 3.37 | 57 | 9308 | 1.00108 ppb | | 91 |
| 26) Vinyl Acetate | 3.71 | 43 | 7695 | 1.05969 ppb | # | 96 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 24347 | 0.95229 ppb | # | 87 |
| 28) MEK (2-Butanone) | 4.51 | 43 | 5001 | 1.25568 ppb | # | 85 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 11816 | 0.92447 ppb | | 95 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 15636 | 0.97054 ppb | | 95 |
| 31) Chloroform | 4.91 | 83 | 21034 | 0.79255 ppb | | 99 |
| 32) Bromochloromethane | 4.76 | 128 | 6796 | 1.14262 ppb | | 85 |
| 34) 1,1,1-TCA | 5.11 | 97 | 17918 | 0.93263 ppb | | 91 |
| 35) Cyclohexane | 5.16 | 41 | 7956 | 0.92336 ppb | | 92 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 12397 | 0.83803 ppb | | 95 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 22118 | 0.87583 ppb | # | 63 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 16861 | 1.02297 ppb | | 91 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 20308 | 0.85184 ppb | # | 89 |
| 41) 1,2-DCA | 5.62 | 62 | 15253 | 0.82241 ppb | | 93 |
| 42) Benzene | 5.58 | 78 | 41034 | 1.06710 ppb | | 97 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L07.D
Acq On : 10 Nov 14 19:01
Sample : 1.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 11066 | 0.87447 ppb | | 91 |
| 44) 2-Pentanone | 6.64 | 43 | 316271 | 9.03732 ppb | | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 13502 | 0.95179 ppb | | 97 |
| 46) Bromodichloromethane | 6.95 | 83 | 16223 | 0.93111 ppb | # | 96 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 12073 | 0.89146 ppb | | 86 |
| 48) Dibromomethane | 6.75 | 93 | 7855 | 0.96667 ppb | | 93 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 329 | 0.93570 ppb | # | 1 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 9797 | 2.29102 ppb | | 99 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 9295 | 1.00212 ppb | | 97 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 15455 | 0.68411 ppb | | 91 |
| 53) Toluene | 7.78 | 91 | 37730 | 0.81090 ppb | | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 13439 | 0.75552 ppb | # | 79 |
| 55) 1,1,2-TCA | 8.22 | 83 | 8760 | 0.96165 ppb | | 94 |
| 56) 2-Hexanone | 8.51 | 43 | 4954 | 0.80669 ppb | # | 87 |
| 59) 1,2-EDB | 8.70 | 107 | 10025 | 0.92870 ppb | | 90 |
| 60) Tetrachloroethene | 8.34 | 166 | 12440 | 0.85750 ppb | | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 10515 | 0.87279 ppb | | 87 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 12697 | 0.90810 ppb | | 92 |
| 63) m&p-Xylene | 9.46 | 106 | 28776 | 2.36605 ppb | | 98 |
| 64) o-Xylene | 9.84 | 106 | 12826 | 0.71428 ppb | | 98 |
| 65) Styrene | 9.86 | 104 | 21214 | 1.45889 ppb | | 97 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 15475 | 0.84517 ppb | | 100 |
| 68) Dibromochloromethane | 8.60 | 129 | 11620 | 0.89211 ppb | | 80 |
| 69) Chlorobenzene | 9.20 | 112 | 31523 | 0.89123 ppb | | 94 |
| 70) Ethylbenzene | 9.34 | 91 | 37870 | 0.74587 ppb | | 96 |
| 71) Bromoform | 10.02 | 173 | 8894 | 0.97715 ppb | | 89 |
| 73) Isopropylbenzene | 10.22 | 105 | 32629 | 0.80380 ppb | | 96 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 13916 | 0.75701 ppb | | 95 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 3934 | 0.83193 ppb | | 99 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 2702 | 0.97905 ppb | | 83 |
| 77) Bromobenzene | 10.50 | 156 | 11916 | 0.87447 ppb | | 85 |
| 78) n-Propylbenzene | 10.63 | 91 | 37267 | 0.76639 ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 29215 | 0.80189 ppb | | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 24576 | 0.75559 ppb | | 92 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 26506 | 0.77003 ppb | | 93 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 28790 | 0.78709 ppb | | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 23547 | 0.79286 ppb | | 97 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 24474 | 0.71318 ppb | | 95 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 33231 | 0.77965 ppb | | 92 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 27436 | 0.73829 ppb | | 94 |
| 87) Benzyl Chloride | 11.67 | 91 | 14856 | 1.06091 ppb | | 99 |
| 88) 1,3-DCB | 11.43 | 146 | 21281 | 0.86937 ppb | | 96 |
| 89) 1,4-DCB | 11.52 | 146 | 24806 | 0.90404 ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 27964 | 0.77102 ppb | | 95 |
| 91) 1,2-DCB | 11.89 | 146 | 21686 | 0.87280 ppb | | 89 |
| 92) Hexachloroethane | 12.14 | 117 | 9643 | 1.01995 ppb | | 90 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 1717 | 0.47979 ppb | # | 75 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 11595 | 0.73420 ppb | | 85 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 10149 | 1.05451 ppb | | 96 |
| 96) Naphthalene | 13.72 | 128 | 9670 | 1.22334 ppb | # | 86 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 6391 | 0.64061 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

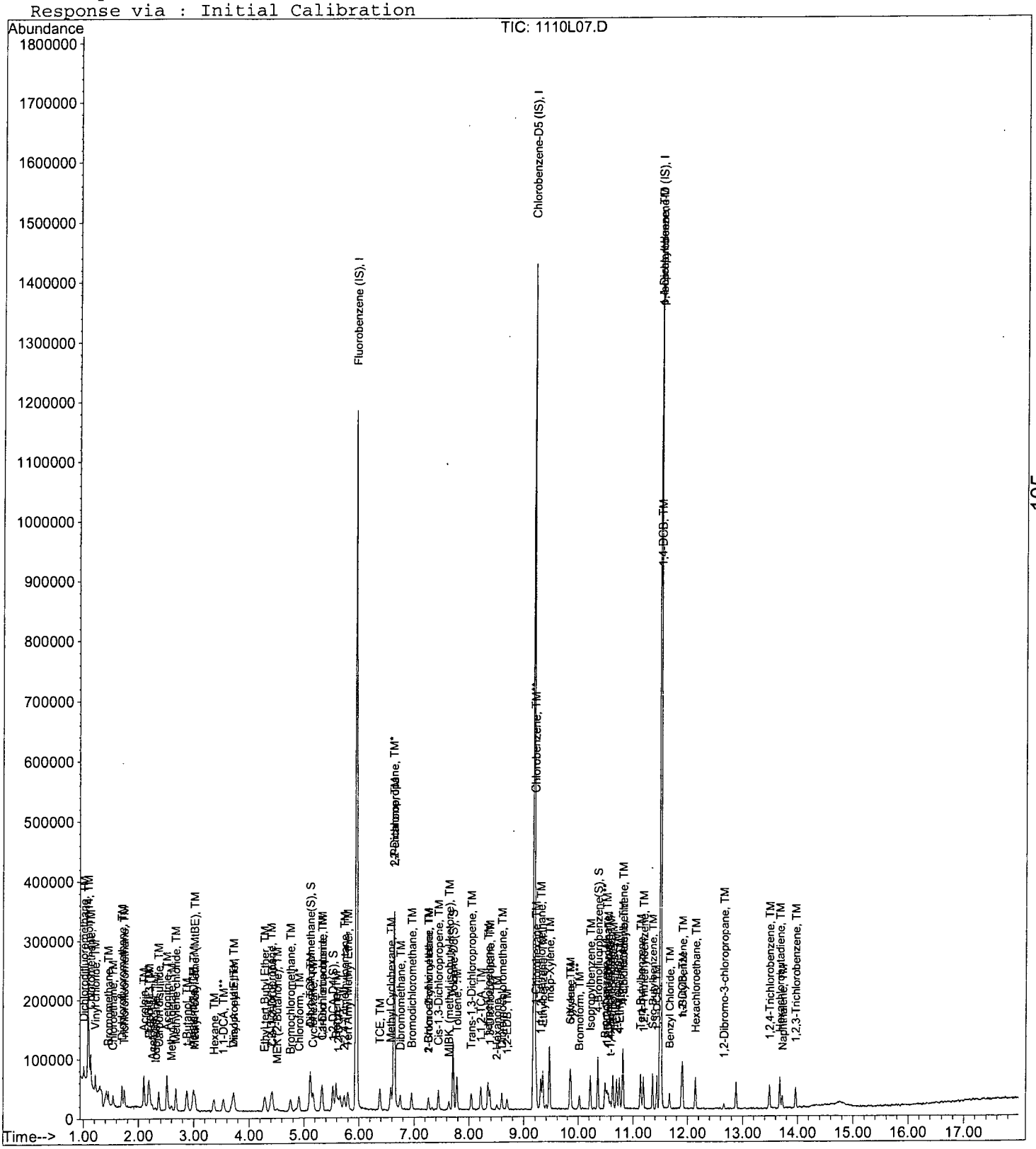
Data File : M:\LOKI\DATA\141110\1110L07.D
Acq On : 10 Nov 14 19:01
Sample : 1.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 6
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L08.D
Acq On : 10 Nov 14 19:29
Sample : 5.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 609024 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 515008 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 307776 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 138148 | 6.75262 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 28.123% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 156102 | 6.99846 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 28.010% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 392839 | 6.71474 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 26.970% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 144219 | 6.43323 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 28.086% | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 43317 | 4.31699 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 38975 | 3.72115 ppb | 97 |
| 4) Chloromethane | 1.14 | 50 | 97256 | 4.53820 ppb | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 65683 | 4.62390 ppb | 92 |
| 6) Bromomethane | 1.45 | 94 | 30264 | 8.94455 ppb | 96 |
| 7) Chloroethane | 1.54 | 64 | 38830 | 5.62443 ppb | 100 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 127420 | 5.20599 ppb | 98 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 85269 | 4.92127 ppb | 99 |
| 10) Acrolein | 2.10 | 56 | 72036 | 76.28373 ppb # | 98 |
| 11) Acetone | 2.25 | 43 | 22029 | 6.08054 ppb | 93 |
| 12) Freon-113 | 2.20 | 101 | 48341 | 4.65554 ppb | 89 |
| 13) 1,1-DCE | 2.18 | 61 | 83467 | 4.64080 ppb | 97 |
| 14) t-Butanol | 2.87 | 59 | 69767 | 96.67260 ppb | 99 |
| 15) Acetonitrile | 2.52 | 41 | 129454 | 96.77976 ppb | 98 |
| 16) Methyl Acetate | 2.60 | 43 | 42078 | 4.98213 ppb | 97 |
| 17) Iodomethane | 2.31 | 142 | 8941 | 6.25988 ppb | 98 |
| 18) Acrylonitrile | 2.96 | 52 | 16865 | 5.81242 ppb | 95 |
| 19) Methylene chloride | 2.67 | 84 | 70475 | 4.96505 ppb | 97 |
| 20) Carbon disulfide | 2.36 | 76 | 170755 | 5.50314 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 135665 | 5.05794 ppb | 98 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 58780 | 5.19559 ppb | 91 |
| 23) Diisopropyl Ether | 3.71 | 45 | 159253 | 4.52348 ppb | 96 |
| 24) 1,1-DCA | 3.53 | 63 | 111252 | 4.62409 ppb | 96 |
| 25) Hexane | 3.36 | 57 | 40785 | 4.01814 ppb | 98 |
| 26) Vinyl Acetate | 3.71 | 43 | 36188 | 4.56508 ppb | 99 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 133790 | 4.79357 ppb | 98 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 21648 | 4.97913 ppb | 97 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 63319 | 4.53807 ppb | 99 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 76980 | 4.37703 ppb | 98 |
| 31) Chloroform | 4.90 | 83 | 114401 | 3.94863 ppb | 99 |
| 32) Bromochloromethane | 4.76 | 128 | 34574 | 5.32488 ppb | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 93372 | 4.45191 ppb | 95 |
| 35) Cyclohexane | 5.16 | 41 | 36860 | 3.91873 ppb | 96 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 63229 | 3.91538 ppb | 96 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 112983 | 4.09828 ppb | 97 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 82095 | 4.82968 ppb | 91 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 127354 | 4.89344 ppb | 95 |
| 41) 1,2-DCA | 5.62 | 62 | 82568 | 4.94515 ppb | 100 |
| 42) Benzene | 5.58 | 78 | 226404 | 4.74566 ppb | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L08.D
Acq On : 10 Nov 14 19:29
Sample : 5.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 60927 | 4.41038 ppb | | 93 |
| 44) 2-Pentanone | 6.63 | 43 | 677846 | 17.74287 ppb | | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 67486 | 4.35782 ppb | | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 86462 | 4.54579 ppb | | 98 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 57987 | 3.92221 ppb | | 100 |
| 48) Dibromomethane | 6.75 | 93 | 39498 | 4.45267 ppb | | 90 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 2282 | 5.94523 ppb | | 55 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 42385 | 5.65844 ppb | | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 51928 | 5.12846 ppb | | 97 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 87428 | 3.54501 ppb | | 99 |
| 53) Toluene | 7.78 | 91 | 229624 | 4.52075 ppb | | 100 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 78422 | 4.03860 ppb | | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 46079 | 4.63370 ppb | | 97 |
| 56) 2-Hexanone | 8.51 | 43 | 26394 | 3.93704 ppb | # | 96 |
| 59) 1,2-EDB | 8.69 | 107 | 50792 | 4.52344 ppb | | 91 |
| 60) Tetrachloroethene | 8.34 | 166 | 69716 | 4.61983 ppb | | 94 |
| 61) 1-Chlorohexane | 9.22 | 91 | 54053 | 4.31323 ppb | | 92 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 69941 | 4.80889 ppb | | 100 |
| 63) m&p-Xylene | 9.46 | 106 | 173648 | 8.71132 ppb | | 98 |
| 64) o-Xylene | 9.85 | 106 | 82611 | 4.42278 ppb | | 97 |
| 65) Styrene | 9.86 | 104 | 136702 | 4.41762 ppb | | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 88297 | 4.63601 ppb | | 100 |
| 68) Dibromochloromethane | 8.60 | 129 | 67088 | 4.95151 ppb | | 95 |
| 69) Chlorobenzene | 9.21 | 112 | 165825 | 4.50708 ppb | | 97 |
| 70) Ethylbenzene | 9.34 | 91 | 224437 | 4.24958 ppb | | 100 |
| 71) Bromoform | 10.02 | 173 | 46067 | 4.86559 ppb | | 95 |
| 73) Isopropylbenzene | 10.22 | 105 | 195792 | 3.93963 ppb | | 93 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 70023 | 5.14894 ppb | | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 20262 | 5.13149 ppb | | 98 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 14070 | 4.16418 ppb | | 92 |
| 77) Bromobenzene | 10.49 | 156 | 72035 | 4.31790 ppb | | 96 |
| 78) n-Propylbenzene | 10.63 | 91 | 243401 | 4.08852 ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 205072 | 4.59764 ppb | | 100 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 165716 | 4.16157 ppb | | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 191813 | 4.55154 ppb | | 99 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 200180 | 4.47014 ppb | | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 147743 | 4.06337 ppb | | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 177232 | 4.21845 ppb | | 95 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 218213 | 4.18171 ppb | | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 182114 | 4.00281 ppb | | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 81870 | 4.77548 ppb | | 98 |
| 88) 1,3-DCB | 11.43 | 146 | 140160 | 4.67682 ppb | | 99 |
| 89) 1,4-DCB | 11.53 | 146 | 147991 | 4.40539 ppb | | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 174408 | 3.92781 ppb | | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 126657 | 4.16372 ppb | | 96 |
| 92) Hexachloroethane | 12.14 | 117 | 48961 | 4.22996 ppb | | 98 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 12946 | 4.95113 ppb | | 90 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 74529 | 3.85465 ppb | | 96 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 52040 | 4.58531 ppb | | 97 |
| 96) Naphthalene | 13.72 | 128 | 70624 | 3.86723 ppb | | 97 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 47136 | 3.85918 ppb | | 99 |

(#) = qualifier out of range (m) = manual integration

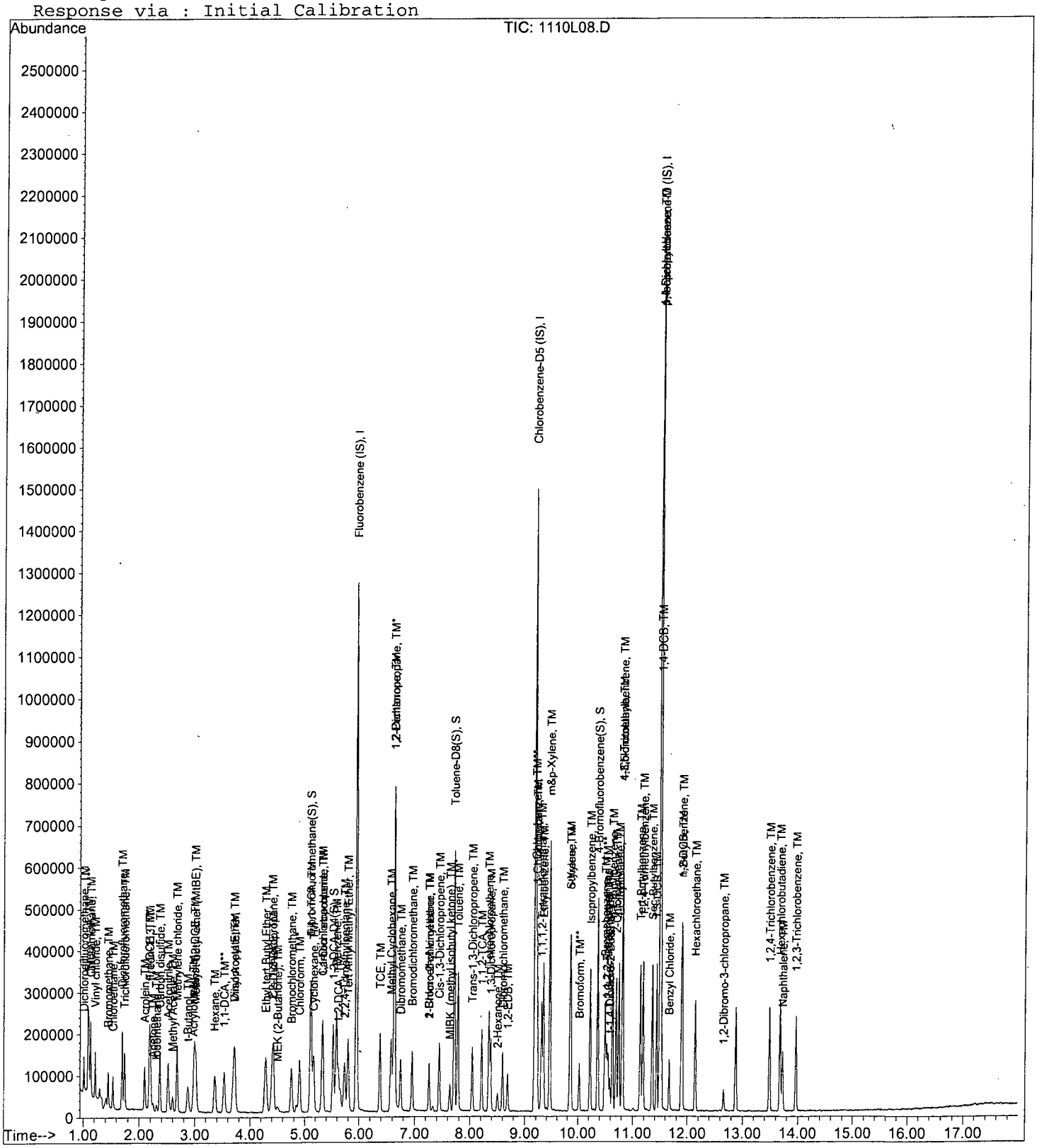
Quantitation Report

Data File : M:\LOKI\DATA\141110\1110L08.D
Acq On : 10 Nov 14 19:29
Sample : 5.0ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 7
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L09.D
Acq On : 10 Nov 14 19:57
Sample : 10ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 626624 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 536256 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 326848 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 326963 | 15.53294 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery = 64.688% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 361046 | 15.73201 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery = 62.968% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 1026953 | 16.85803 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery = 67.709% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 384687 | 16.47995 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery = 71.950% | | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 97384 | 9.43273 ppb | 98 |
| 3) Freon 114 | 1.10 | 85 | 91984 | 8.53554 ppb | 93 |
| 4) Chloromethane | 1.14 | 50 | 188675 | 8.55675 ppb | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 138147 | 9.45200 ppb | 98 |
| 6) Bromomethane | 1.44 | 94 | 60305 | 17.32259 ppb | 94 |
| 7) Chloroethane | 1.53 | 64 | 75638 | 10.64827 ppb | 97 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 244585 | 9.71232 ppb | 94 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 174119 | 9.76697 ppb | 97 |
| 10) Acrolein | 2.10 | 56 | 87271 | 89.82137 ppb # | 98 |
| 11) Acetone | 2.25 | 43 | 37985 | 11.68442 ppb | 97 |
| 12) Freon-113 | 2.20 | 101 | 101942 | 9.54189 ppb | 94 |
| 13) 1,1-DCE | 2.18 | 61 | 168911 | 9.12774 ppb | 99 |
| 14) t-Butanol | 2.87 | 59 | 87943 | 118.43553 ppb | 99 |
| 15) Acetonitrile | 2.52 | 41 | 168954 | 122.76227 ppb | 99 |
| 16) Methyl Acetate | 2.59 | 43 | 83127 | 9.56597 ppb | 99 |
| 17) Iodomethane | 2.31 | 142 | 18336 | 11.94542 ppb | 95 |
| 18) Acrylonitrile | 2.97 | 52 | 30167 | 10.10485 ppb | 92 |
| 19) Methylene chloride | 2.67 | 84 | 129528 | 9.11191 ppb | 97 |
| 20) Carbon disulfide | 2.36 | 76 | 339801 | 10.64361 ppb | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 264288 | 9.57658 ppb | 99 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 115394 | 9.58286 ppb | 98 |
| 23) Diisopropyl Ether | 3.71 | 45 | 334016 | 9.22103 ppb | 93 |
| 24) 1,1-DCA | 3.53 | 63 | 212443 | 8.58199 ppb | 95 |
| 25) Hexane | 3.36 | 57 | 95898 | 9.18252 ppb | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 70824 | 8.68344 ppb # | 99 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 275309 | 9.58701 ppb | 97 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 39749 | 8.88566 ppb | 91 |
| 29) Cis-1,2-DCE | 4.42 | 96 | 124804 | 8.69347 ppb | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 155315 | 8.58306 ppb | 99 |
| 31) Chloroform | 4.90 | 83 | 219608 | 7.36703 ppb | 97 |
| 32) Bromochloromethane | 4.75 | 128 | 65183 | 9.75713 ppb | 98 |
| 34) 1,1,1-TCA | 5.10 | 97 | 178206 | 8.25810 ppb | 96 |
| 35) Cyclohexane | 5.16 | 41 | 83083 | 8.58479 ppb | 97 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 137130 | 8.25311 ppb | 96 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 256218 | 9.03287 ppb | 100 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 163341 | 9.41160 ppb | 92 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 269105 | 10.04965 ppb | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 163979 | 9.74890 ppb | 100 |
| 42) Benzene | 5.58 | 78 | 458964 | 9.19515 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L09.D
Acq On : 10 Nov 14 19:57
Sample : 10ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 117002 | 8.23166 | ppb | 96 |
| 44) 2-Pentanone | 6.63 | 43 | 910982 | 23.17555 | ppb | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 131599 | 8.25916 | ppb | 97 |
| 46) Bromodichloromethane | 6.95 | 83 | 168469 | 8.60857 | ppb | 95 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 133475 | 8.77460 | ppb | 96 |
| 48) Dibromomethane | 6.75 | 93 | 77447 | 8.48550 | ppb | 97 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 3785 | 9.58399 | ppb | 59 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 84942 | 9.92708 | ppb | 96 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 96392 | 9.25238 | ppb | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 169370 | 6.67469 | ppb | 96 |
| 53) Toluene | 7.78 | 91 | 478136 | 9.14897 | ppb | 96 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 155077 | 7.76190 | ppb | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 89938 | 8.79013 | ppb | 95 |
| 56) 2-Hexanone | 8.50 | 43 | 51246 | 7.42937 | ppb | 97 |
| 59) 1,2-EDB | 8.69 | 107 | 104781 | 8.96186 | ppb | 93 |
| 60) Tetrachloroethene | 8.34 | 166 | 136717 | 8.70078 | ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 123201 | 9.44146 | ppb | 93 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 132628 | 8.75770 | ppb | 96 |
| 63) m&p-Xylene | 9.46 | 106 | 386650 | 17.43930 | ppb | 98 |
| 64) o-Xylene | 9.85 | 106 | 170473 | 8.76505 | ppb | 95 |
| 65) Styrene | 9.86 | 104 | 299338 | 8.30912 | ppb | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 174582 | 8.80318 | ppb | 98 |
| 68) Dibromochloromethane | 8.60 | 129 | 131929 | 9.35135 | ppb | 93 |
| 69) Chlorobenzene | 9.20 | 112 | 330233 | 8.62000 | ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 482635 | 8.77632 | ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 91334 | 9.26445 | ppb | 98 |
| 73) Isopropylbenzene | 10.22 | 105 | 425824 | 8.06825 | ppb | 100 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 134958 | 9.87858 | ppb | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 40606 | 10.13503 | ppb | 91 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 32742 | 9.12494 | ppb | 88 |
| 77) Bromobenzene | 10.49 | 156 | 148110 | 8.35992 | ppb | 93 |
| 78) n-Propylbenzene | 10.63 | 91 | 539892 | 8.53963 | ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 459884 | 9.70880 | ppb | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 357002 | 8.44213 | ppb | 100 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 430948 | 9.62929 | ppb | 97 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 430759 | 9.05781 | ppb | 98 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 310857 | 8.05061 | ppb | 97 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 394778 | 8.84816 | ppb | 95 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 477257 | 8.61222 | ppb | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 403765 | 8.35678 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 163832 | 8.99871 | ppb | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 278788 | 8.75971 | ppb | 97 |
| 89) 1,4-DCB | 11.53 | 146 | 290241 | 8.13573 | ppb | 98 |
| 90) n-Butylbenzene | 11.91 | 91 | 373954 | 7.93033 | ppb | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 258891 | 8.01416 | ppb | 97 |
| 92) Hexachloroethane | 12.14 | 117 | 98109 | 7.98148 | ppb | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 24754 | 9.22441 | ppb | 91 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 157283 | 7.66002 | ppb | 98 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 104204 | 8.69266 | ppb | 94 |
| 96) Naphthalene | 13.72 | 128 | 161088 | 7.46642 | ppb | 96 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 100848 | 7.77497 | ppb | 96 |

(#) = qualifier out of range (m) = manual integration

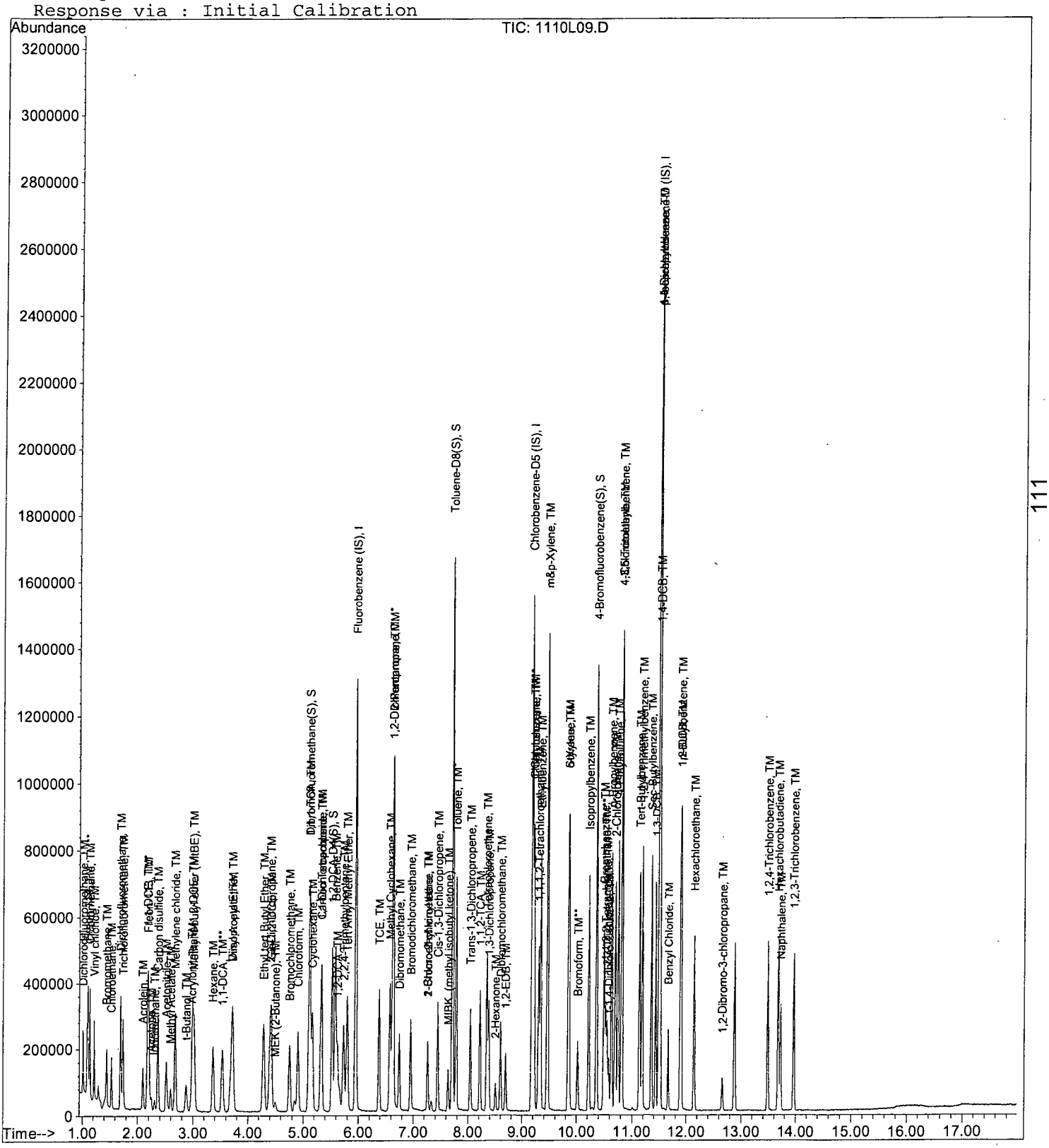
Quantitation Report

Data File : M:\LOKI\DATA\141110\1110L09.D
Acq On : 10 Nov 14 19:57
Sample : 10ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 8
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L10.D
Vial: 9
Acq On : 10 Nov 14 20:25
Operator: DG,SV,RS
Sample : 20ug/L Vol Std 11-10-14
Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014
Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 650240 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 558080 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 338304 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 544931 | 24.94767 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 103.898% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 592638 | 24.88539 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 99.603% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 1824718 | 28.78246 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 115.601% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 674792 | 27.77756 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 121.276% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 209670 | 19.57129 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 203996 | 18.24205 ppb | | 99 |
| 4) Chloromethane | 1.14 | 50 | 391587 | 17.11417 ppb | | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 284846 | 18.78131 ppb | | 99 |
| 6) Bromomethane | 1.44 | 94 | 147884 | 40.93681 ppb | | 96 |
| 7) Chloroethane | 1.53 | 64 | 151279 | 20.52347 ppb | | 98 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 500593 | 19.15628 ppb | | 98 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 346680 | 18.74028 ppb | | 99 |
| 10) Acrolein | 2.10 | 56 | 105933 | 105.06893 ppb | # | 98 |
| 11) Acetone | 2.25 | 43 | 67020 | 21.41511 ppb | | 96 |
| 12) Freon-113 | 2.20 | 101 | 211260 | 19.05601 ppb | | 96 |
| 13) 1,1-DCE | 2.18 | 61 | 339998 | 17.70579 ppb | | 98 |
| 14) t-Butanol | 2.88 | 59 | 106700 | 138.47727 ppb | | 99 |
| 15) Acetonitrile | 2.52 | 41 | 200309 | 140.25884 ppb | | 97 |
| 16) Methyl Acetate | 2.59 | 43 | 163959 | 18.18259 ppb | | 99 |
| 17) Iodomethane | 2.31 | 142 | 45344 | 27.72717 ppb | | 98 |
| 18) Acrylonitrile | 2.96 | 52 | 60094 | 19.39824 ppb | | 99 |
| 19) Methylene chloride | 2.67 | 84 | 269479 | 18.57884 ppb | | 100 |
| 20) Carbon disulfide | 2.36 | 76 | 702738 | 21.21246 ppb | | 98 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 571553 | 19.95827 ppb | | 99 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 230644 | 18.12113 ppb | | 96 |
| 23) Diisopropyl Ether | 3.71 | 45 | 749800 | 19.94761 ppb | | 92 |
| 24) 1,1-DCA | 3.53 | 63 | 434427 | 16.91203 ppb | | 97 |
| 25) Hexane | 3.36 | 57 | 221971 | 20.48246 ppb | | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 151040 | 17.84584 ppb | # | 98 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 610272 | 20.47950 ppb | | 97 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 81277 | 17.50913 ppb | | 99 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 264588 | 17.76103 ppb | | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 311813 | 16.60567 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 443553 | 14.33914 ppb | | 99 |
| 32) Bromochloromethane | 4.75 | 128 | 130473 | 18.82095 ppb | | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 374298 | 16.71508 ppb | | 97 |
| 35) Cyclohexane | 5.16 | 41 | 183521 | 18.27413 ppb | | 88 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 300786 | 17.44521 ppb | | 98 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 590891 | 20.07507 ppb | # | 85 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 341692 | 19.05145 ppb | | 96 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 586759 | 21.11652 ppb | | 95 |
| 41) 1,2-DCA | 5.62 | 62 | 329822 | 19.10196 ppb | | 99 |
| 42) Benzene | 5.58 | 78 | 962874 | 18.42692 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L10.D
Acq On : 10 Nov 14 20:25
Sample : 20ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 9
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 242500 | 16.44141 ppb | 98 |
| 44) 2-Pentanone | 6.63 | 43 | 1148179 | 28.14901 ppb | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 271762 | 16.43635 ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 341821 | 16.83229 ppb | 96 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 303160 | 19.20581 ppb | 93 |
| 48) Dibromomethane | 6.75 | 93 | 153025 | 16.15729 ppb | 99 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 6770 | 16.51971 ppb | 92 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 164555 | 17.53201 ppb | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 197568 | 18.27521 ppb | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 370959 | 14.08815 ppb | 97 |
| 53) Toluene | 7.78 | 91 | 1022717 | 18.85860 ppb | 97 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 324021 | 15.62886 ppb | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 183220 | 17.25671 ppb | 97 |
| 56) 2-Hexanone | 8.50 | 43 | 105148 | 14.69016 ppb | 92 |
| 59) 1,2-EDB | 8.69 | 107 | 213164 | 17.51883 ppb | 94 |
| 60) Tetrachloroethene | 8.34 | 166 | 268102 | 16.39500 ppb | 96 |
| 61) 1-Chlorohexane | 9.22 | 91 | 275331 | 20.27476 ppb | 92 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 271448 | 17.22333 ppb | 97 |
| 63) m&p-Xylene | 9.46 | 106 | 859449 | 36.06193 ppb | 99 |
| 64) o-Xylene | 9.85 | 106 | 387992 | 19.16891 ppb | 97 |
| 65) Styrene | 9.86 | 104 | 698408 | 17.52400 ppb | 97 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 362294 | 17.55403 ppb | 99 |
| 68) Dibromochloromethane | 8.60 | 129 | 260907 | 17.77034 ppb | 96 |
| 69) Chlorobenzene | 9.21 | 112 | 674439 | 16.91630 ppb | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 1093459 | 19.10610 ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 182609 | 17.79856 ppb | 98 |
| 73) Isopropylbenzene | 10.23 | 105 | 943783 | 17.27668 ppb | 98 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 265129 | 19.33794 ppb | 97 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 81619 | 20.16106 ppb | 93 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 67608 | 18.20377 ppb | 98 |
| 77) Bromobenzene | 10.49 | 156 | 306360 | 16.70661 ppb | 95 |
| 78) n-Propylbenzene | 10.63 | 91 | 1226502 | 18.74301 ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 1047806 | 21.37158 ppb | 100 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 773570 | 17.67339 ppb | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 943488 | 20.36781 ppb | 97 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 926387 | 18.82002 ppb | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 699809 | 17.51000 ppb | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 905028 | 19.59749 ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 1076567 | 18.76906 ppb | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 906287 | 18.12235 ppb | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 331043 | 17.56728 ppb | 99 |
| 88) 1,3-DCB | 11.44 | 146 | 581807 | 17.66174 ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 594986 | 16.11325 ppb | 99 |
| 90) n-Butylbenzene | 11.91 | 91 | 851042 | 17.43663 ppb | 97 |
| 91) 1,2-DCB | 11.89 | 146 | 535371 | 16.01159 ppb | 97 |
| 92) Hexachloroethane | 12.14 | 117 | 197762 | 15.54376 ppb | 98 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 49888 | 18.32740 ppb | 95 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 335687 | 15.79506 ppb | 96 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 214675 | 17.35412 ppb | 99 |
| 96) Naphthalene | 13.72 | 128 | 382592 | 15.97410 ppb | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 227072 | 16.91352 ppb | 98 |

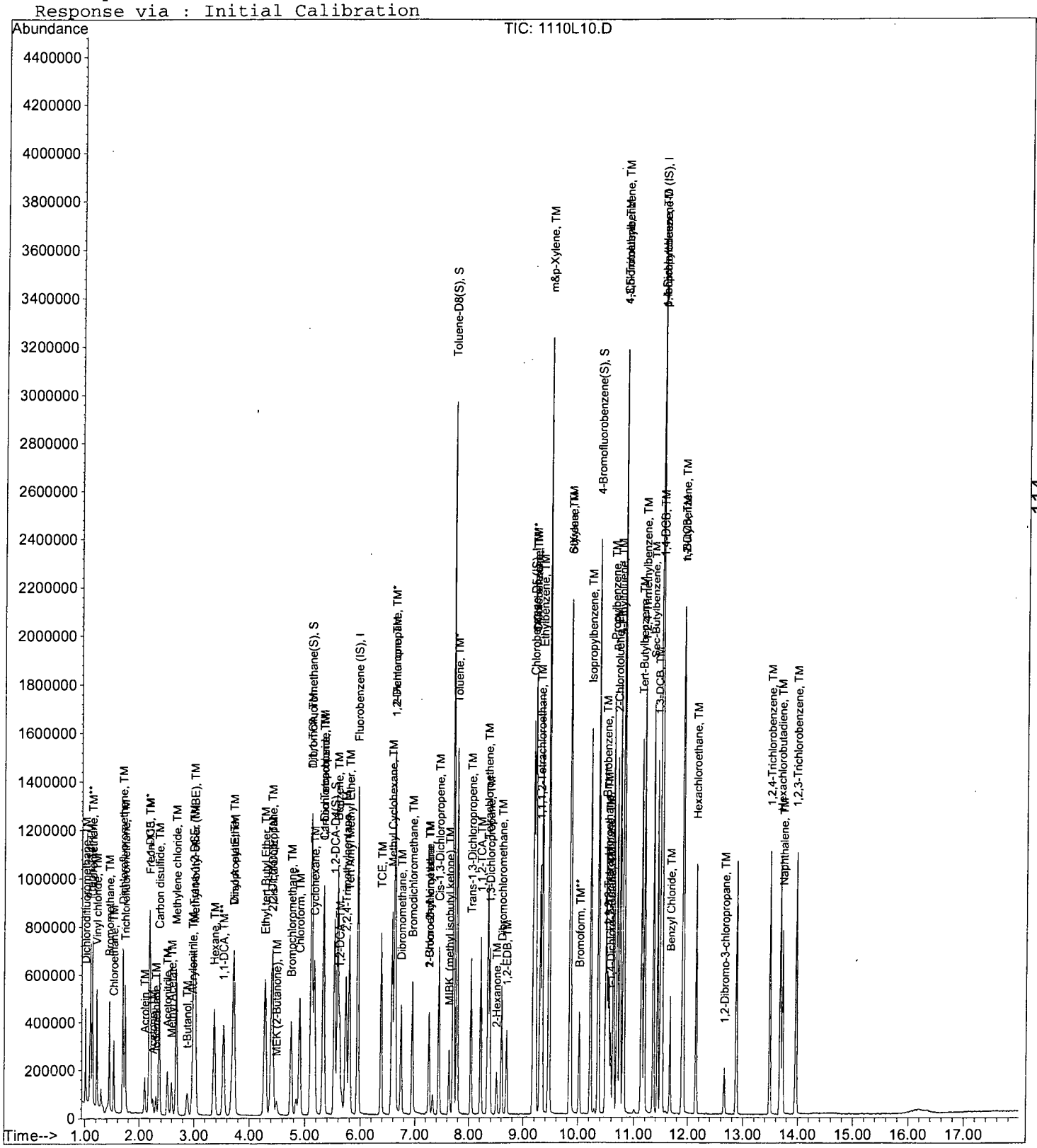
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141110\1110L10.D  Vial: 9
Acq On : 10 Nov 14 20:25  Operator: DG,SV,RS
Sample : 20ug/L Vol Std 11-10-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Nov 18 10:27 2014  Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L11.D
Acq On : 10 Nov 14 20:54
Sample : 40ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 653952 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 571968 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 341312 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 1083331 | 49.31482 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 205.376% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 1183677 | 49.42151 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 197.812% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 3775886 | 58.11332 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 233.407% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 1393747 | 55.97999 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 244.404% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 463182 | 42.98953 ppb | | 100 |
| 3) Freon 114 | 1.10 | 85 | 422964 | 37.60826 ppb | | 99 |
| 4) Chloromethane | 1.13 | 50 | 804064 | 34.94186 ppb | | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 588087 | 38.55540 ppb | | 98 |
| 6) Bromomethane | 1.44 | 94 | 271518 | 74.73417 ppb | | 95 |
| 7) Chloroethane | 1.52 | 64 | 270518 | 36.49188 ppb | | 98 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 975028 | 37.09977 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.73 | 101 | 703422 | 37.80863 ppb | | 99 |
| 10) Acrolein | 2.10 | 56 | 119718 | 118.06748 ppb | # | 98 |
| 11) Acetone | 2.25 | 43 | 121962 | 40.53907 ppb | | 98 |
| 12) Freon-113 | 2.20 | 101 | 408646 | 36.65133 ppb | | 94 |
| 13) 1,1-DCE | 2.18 | 61 | 680878 | 35.25624 ppb | | 97 |
| 14) t-Butanol | 2.89 | 59 | 124814 | 161.06649 ppb | | 100 |
| 15) Acetonitrile | 2.52 | 41 | 236196 | 164.44858 ppb | | 99 |
| 16) Methyl Acetate | 2.60 | 43 | 330603 | 36.45482 ppb | | 100 |
| 17) Iodomethane | 2.31 | 142 | 97400 | 58.61256 ppb | | 98 |
| 18) Acrylonitrile | 2.96 | 52 | 123409 | 39.61009 ppb | | 95 |
| 19) Methylene chloride | 2.67 | 84 | 524271 | 36.22848 ppb | | 98 |
| 20) Carbon disulfide | 2.36 | 76 | 1406273 | 42.20802 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 1193908 | 41.45387 ppb | | 98 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 471046 | 36.42383 ppb | | 97 |
| 23) Diisopropyl Ether | 3.71 | 45 | 1617701 | 42.79287 ppb | | 89 |
| 24) 1,1-DCA | 3.53 | 63 | 848086 | 32.82816 ppb | | 98 |
| 25) Hexane | 3.36 | 57 | 494384 | 45.36052 ppb | | 95 |
| 26) Vinyl Acetate | 3.71 | 43 | 305681 | 35.91213 ppb | # | 98 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 1312608 | 43.79846 ppb | | 97 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 171815 | 36.80321 ppb | | 100 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 549238 | 36.65948 ppb | | 99 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 632990 | 33.51867 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 873174 | 28.06766 ppb | | 100 |
| 32) Bromochloromethane | 4.75 | 128 | 248219 | 35.60277 ppb | | 98 |
| 34) 1,1,1-TCA | 5.10 | 97 | 737901 | 32.76550 ppb | | 97 |
| 35) Cyclohexane | 5.16 | 41 | 394153 | 39.02506 ppb | | 84 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 624730 | 36.02788 ppb | | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 1299215 | 43.88928 ppb | # | 84 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 663190 | 36.83885 ppb | | 95 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 1231731 | 44.07642 ppb | | 93 |
| 41) 1,2-DCA | 5.62 | 62 | 652803 | 37.80513 ppb | | 100 |
| 42) Benzene | 5.58 | 78 | 1943446 | 36.82055 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L11.D Vial: 10
Acq On : 10 Nov 14 20:54 Operator: DG,SV,RS
Sample : 40ug/L Vol Std 11-10-14 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 486595 | 32.80370 ppb | 97 |
| 44) 2-Pentanone | 6.64 | 43 | 1378246 | 33.59758 ppb | 99 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 546007 | 32.83543 ppb | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 681234 | 33.35558 ppb | 96 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 677021 | 42.64721 ppb | 91 |
| 48) Dibromomethane | 6.75 | 93 | 300260 | 31.52329 ppb | 98 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 13149 | 31.90321 ppb | 73 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 343015 | 35.09960 ppb | 95 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 395776 | 36.40181 ppb | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 779952 | 29.45260 ppb | 97 |
| 53) Toluene | 7.78 | 91 | 2094338 | 38.39977 ppb | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 668815 | 32.07656 ppb | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 361234 | 33.82997 ppb | 97 |
| 56) 2-Hexanone | 8.51 | 43 | 225795 | 31.36661 ppb | 95 |
| 59) 1,2-EDB | 8.69 | 107 | 415335 | 33.30539 ppb | 96 |
| 60) Tetrachloroethene | 8.34 | 166 | 541973 | 32.33804 ppb | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 613542 | 44.08286 ppb | 89 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 531460 | 32.90227 ppb | 97 |
| 63) m&p-Xylene | 9.46 | 106 | 1786376 | 72.06145 ppb | 98 |
| 64) o-Xylene | 9.85 | 106 | 835363 | 40.26935 ppb | 98 |
| 65) Styrene | 9.86 | 104 | 1486688 | 35.43944 ppb | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 725996 | 34.32217 ppb | 99 |
| 68) Dibromochloromethane | 8.60 | 129 | 515428 | 34.25332 ppb | 96 |
| 69) Chlorobenzene | 9.21 | 112 | 1378290 | 33.73091 ppb | 100 |
| 70) Ethylbenzene | 9.34 | 91 | 2309155 | 39.36836 ppb | 99 |
| 71) Bromoform | 10.02 | 173 | 353739 | 33.64112 ppb | 98 |
| 73) Isopropylbenzene | 10.22 | 105 | 2086155 | 37.85213 ppb | 97 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 516182 | 37.92657 ppb | 99 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 154213 | 38.20116 ppb | 95 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 126897 | 33.86650 ppb | 93 |
| 77) Bromobenzene | 10.49 | 156 | 620790 | 33.55495 ppb | 94 |
| 78) n-Propylbenzene | 10.63 | 91 | 2618729 | 39.66588 ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 2213277 | 44.74527 ppb | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 1591728 | 36.04497 ppb | 98 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 1951020 | 41.74700 ppb | 98 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 1870895 | 37.67322 ppb | 98 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 1536602 | 38.10865 ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 1907422 | 40.93935 ppb | 97 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 2274198 | 39.29934 ppb | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 1931080 | 38.27407 ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 677041 | 35.61154 ppb | 100 |
| 88) 1,3-DCB | 11.44 | 146 | 1151000 | 34.63262 ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 1183789 | 31.77652 ppb | 100 |
| 90) n-Butylbenzene | 11.91 | 91 | 1861304 | 37.79937 ppb | 96 |
| 91) 1,2-DCB | 11.89 | 146 | 1083823 | 32.12873 ppb | 97 |
| 92) Hexachloroethane | 12.14 | 117 | 397121 | 30.93795 ppb | 100 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 108322 | 39.88951 ppb | 96 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 813693 | 37.94924 ppb | 99 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 450295 | 36.13772 ppb | 98 |
| 96) Naphthalene | 13.72 | 128 | 1059840 | 40.65793 ppb | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 541696 | 39.99277 ppb | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

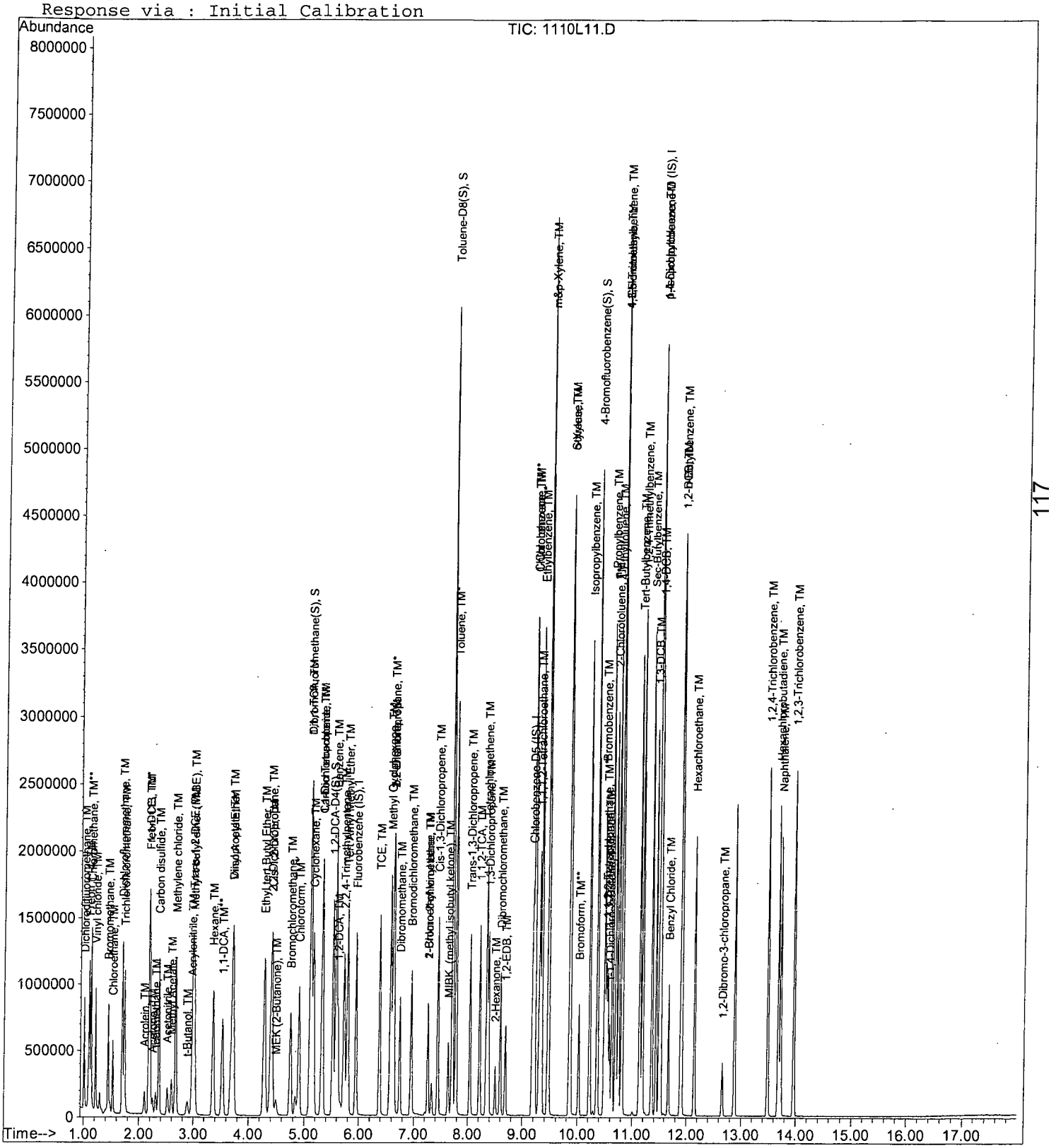
Data File : M:\LOKI\DATA\141110\1110L11.D
Acq On : 10 Nov 14 20:54
Sample : 40ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L12.D Vial: 11
Acq On : 10 Nov 14 21:22 Operator: DG,SV,RS
Sample : 100ug/L Vol Std 11-10-14 Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14 Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 648384 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 570368 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 367936 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 1308579 | 60.07999 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 250.207% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 1425732 | 60.03911 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 240.307% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 4731793 | 73.02964 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 293.320% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 1849930 | 74.51106 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 325.309% | |

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 1152714 | 107.90614 ppb | | 99 |
| 3) Freon 114 | 1.10 | 85 | 1105895 | 99.17616 ppb | | 98 |
| 4) Chloromethane | 1.13 | 50 | 2015419 | 88.33531 ppb | | 100 |
| 5) Vinyl chloride | 1.22 | 62 | 1504345 | 99.47286 ppb | | 97 |
| 6) Bromomethane | 1.44 | 94 | 627988 | 174.33538 ppb | | 96 |
| 7) Chloroethane | 1.52 | 64 | 763735 | 103.90976 ppb | | 98 |
| 8) Dichlorofluoromethane | 1.69 | 67 | 2333217 | 89.54118 ppb | | 98 |
| 9) Trichlorofluoromethane | 1.73 | 101 | 1731303 | 93.85592 ppb | | 99 |
| 10) Acrolein | 2.10 | 56 | 128471 | 127.78784 ppb | # | 97 |
| 11) Acetone | 2.26 | 43 | 288562 | 99.80367 ppb | | 95 |
| 12) Freon-113 | 2.19 | 101 | 983187 | 88.93900 ppb | | 95 |
| 13) 1,1-DCE | 2.18 | 61 | 1663451 | 86.87409 ppb | | 97 |
| 14) t-Butanol | 2.92 | 59 | 146416 | 190.56538 ppb | | 100 |
| 15) Acetonitrile | 2.52 | 41 | 268555 | 188.58381 ppb | | 96 |
| 16) Methyl Acetate | 2.60 | 43 | 824503 | 91.69677 ppb | | 98 |
| 17) Iodomethane | 2.30 | 142 | 289024 | 174.35329 ppb | | 97 |
| 18) Acrylonitrile | 2.97 | 52 | 299969 | 97.10665 ppb | | 98 |
| 19) Methylene chloride | 2.67 | 84 | 1250743 | 87.60598 ppb | | 100 |
| 20) Carbon disulfide | 2.36 | 76 | 3398584 | 102.88141 ppb | | 100 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 3004870 | 105.22854 ppb | | 96 |
| 22) Trans-1,2-DCE | 2.98 | 96 | 1166574 | 90.43548 ppb | | 97 |
| 23) Diisopropyl Ether | 3.72 | 45 | 4052088 | 108.10994 ppb | | 88 |
| 24) 1,1-DCA | 3.53 | 63 | 1939035 | 75.70175 ppb | | 98 |
| 25) Hexane | 3.36 | 57 | 1326695 | 122.77172 ppb | | 93 |
| 26) Vinyl Acetate | 3.71 | 43 | 735461 | 87.14570 ppb | # | 98 |
| 27) Ethyl tert Butyl Ether | 4.29 | 59 | 3411552 | 114.81255 ppb | | 95 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 407789 | 88.09955 ppb | | 100 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 1337919 | 90.06771 ppb | | 99 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 1530403 | 81.73524 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 2067490 | 67.02894 ppb | | 98 |
| 32) Bromochloromethane | 4.75 | 128 | 577846 | 83.59387 ppb | | 98 |
| 34) 1,1,1-TCA | 5.10 | 97 | 1792957 | 80.29753 ppb | | 95 |
| 35) Cyclohexane | 5.16 | 41 | 1004862 | 100.34569 ppb | | 81 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 1584646 | 92.17055 ppb | | 99 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 3343396 | 113.91446 ppb | | 92 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 1636412 | 91.79489 ppb | | 96 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 3072705 | 110.89829 ppb | # | 90 |
| 41) 1,2-DCA | 5.62 | 62 | 1531521 | 89.75434 ppb | | 99 |
| 42) Benzene | 5.58 | 78 | 4680399 | 89.20811 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1110L12.D
Acq On : 10 Nov 14 21:22
Sample : 100ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:15:57 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 1207489 | 82.10167 | ppb | | 98 |
| 44) 2-Pentanone | 6.64 | 43 | 1543699 | 37.95400 | ppb | | 98 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 1308897 | 79.38958 | ppb | | 100 |
| 46) Bromodichloromethane | 6.95 | 83 | 1637605 | 80.87140 | ppb | | 97 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 1811067 | 115.06323 | ppb | | 90 |
| 48) Dibromomethane | 6.75 | 93 | 696631 | 73.76502 | ppb | | 98 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 28274 | 69.18986 | ppb | # | 33 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 926371 | 93.61622 | ppb | | 94 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 993435 | 92.15664 | ppb | | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 2038861 | 77.65277 | ppb | | 97 |
| 53) Toluene | 7.78 | 91 | 5102621 | 94.36016 | ppb | | 97 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 1713875 | 82.90382 | ppb | | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 864510 | 81.65760 | ppb | | 96 |
| 56) 2-Hexanone | 8.51 | 43 | 615235 | 86.20012 | ppb | | 92 |
| 59) 1,2-EDB | 8.69 | 107 | 1017890 | 81.85278 | ppb | | 99 |
| 60) Tetrachloroethene | 8.34 | 166 | 1334542 | 79.85182 | ppb | | 98 |
| 61) 1-Chlorohexane | 9.22 | 91 | 1594620 | 114.89449 | ppb | | 87 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 1323568 | 82.17092 | ppb | | 100 |
| 63) m&p-Xylene | 9.46 | 106 | 4453802 | 178.60107 | ppb | | 99 |
| 64) o-Xylene | 9.85 | 106 | 2168682 | 104.83634 | ppb | | 97 |
| 65) Styrene | 9.86 | 104 | 3847792 | 90.56149 | ppb | | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 1782252 | 84.49406 | ppb | | 98 |
| 68) Dibromochloromethane | 8.60 | 129 | 1286102 | 85.70904 | ppb | | 98 |
| 69) Chlorobenzene | 9.21 | 112 | 3410691 | 83.70404 | ppb | | 99 |
| 70) Ethylbenzene | 9.34 | 91 | 5750739 | 98.31832 | ppb | | 100 |
| 71) Bromoform | 10.02 | 173 | 934447 | 89.11662 | ppb | | 99 |
| 73) Isopropylbenzene | 10.23 | 105 | 5460513 | 91.90867 | ppb | | 97 |
| 74) 1,1,2,2-Tetrachloroethane | 10.53 | 83 | 1323609 | 91.11848 | ppb | | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 392614 | 90.91235 | ppb | | 96 |
| 76) t-1,4-Dichloro-2-Butene | 10.59 | 53 | 345659 | 85.57483 | ppb | | 94 |
| 77) Bromobenzene | 10.50 | 156 | 1600206 | 80.23559 | ppb | | 95 |
| 78) n-Propylbenzene | 10.63 | 91 | 6730811 | 94.57433 | ppb | | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 5679362 | 106.50994 | ppb | | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 4039468 | 84.85536 | ppb | | 99 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 4976345 | 98.77643 | ppb | | 97 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 4816427 | 89.96790 | ppb | | 100 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 4135295 | 95.13668 | ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 5078507 | 101.11357 | ppb | | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 6141468 | 98.44835 | ppb | | 99 |
| 86) p-Isopropyltoluene | 11.51 | 119 | 5287563 | 97.21634 | ppb | | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 1843443 | 89.94660 | ppb | | 100 |
| 88) 1,3-DCB | 11.44 | 146 | 3049242 | 85.11012 | ppb | | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 3091058 | 76.96947 | ppb | | 99 |
| 90) n-Butylbenzene | 11.91 | 91 | 5152052 | 97.05697 | ppb | | 96 |
| 91) 1,2-DCB | 11.89 | 146 | 2925082 | 80.43637 | ppb | | 97 |
| 92) Hexachloroethane | 12.14 | 117 | 1078290 | 77.92621 | ppb | | 98 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 275062 | 94.48649 | ppb | | 96 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 2231434 | 96.53966 | ppb | | 97 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 1190636 | 88.71532 | ppb | | 98 |
| 96) Naphthalene | 13.72 | 128 | 2842624 | 91.27241 | ppb | | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 1381888 | 94.64071 | ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

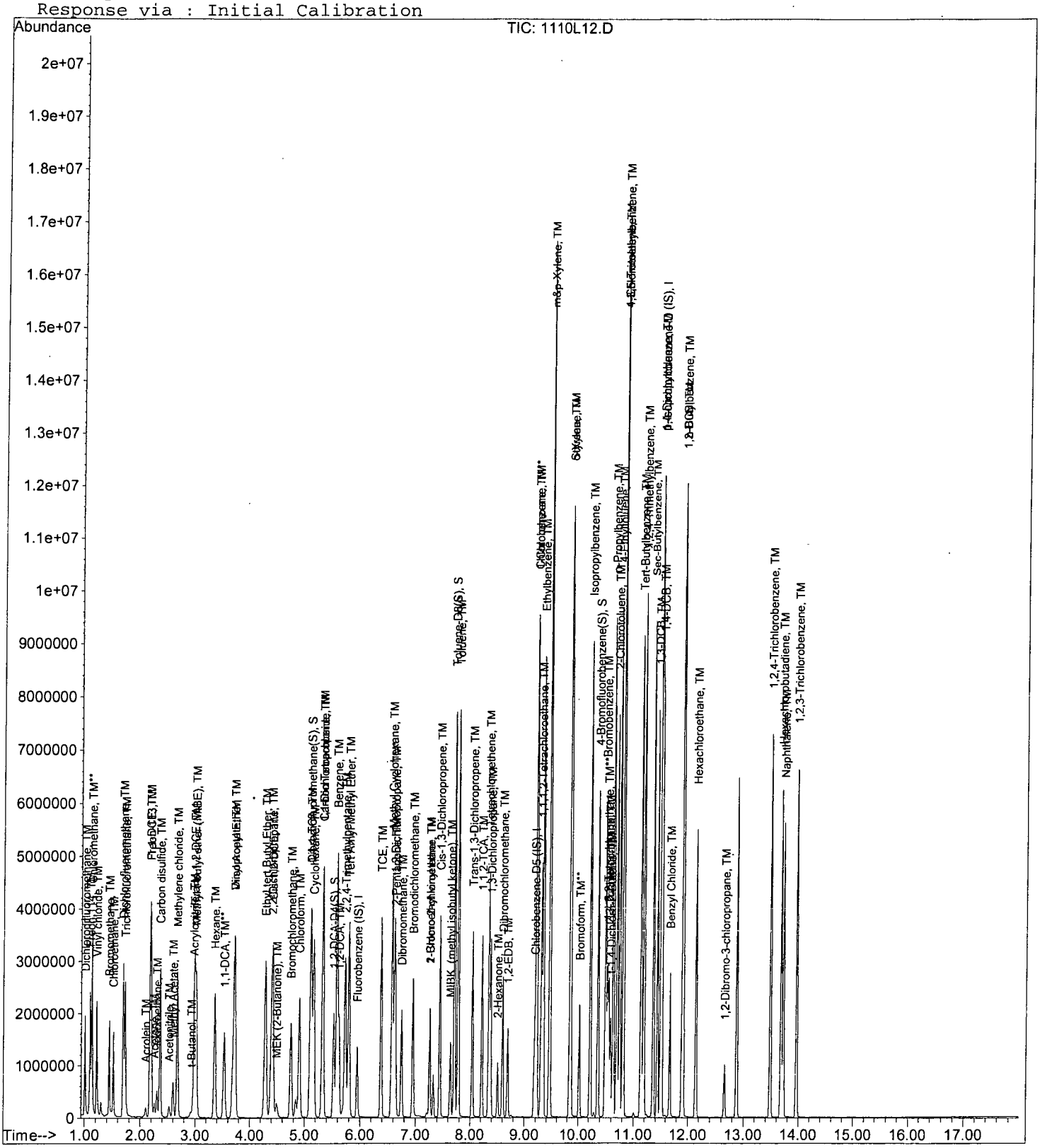
Quantitation Report

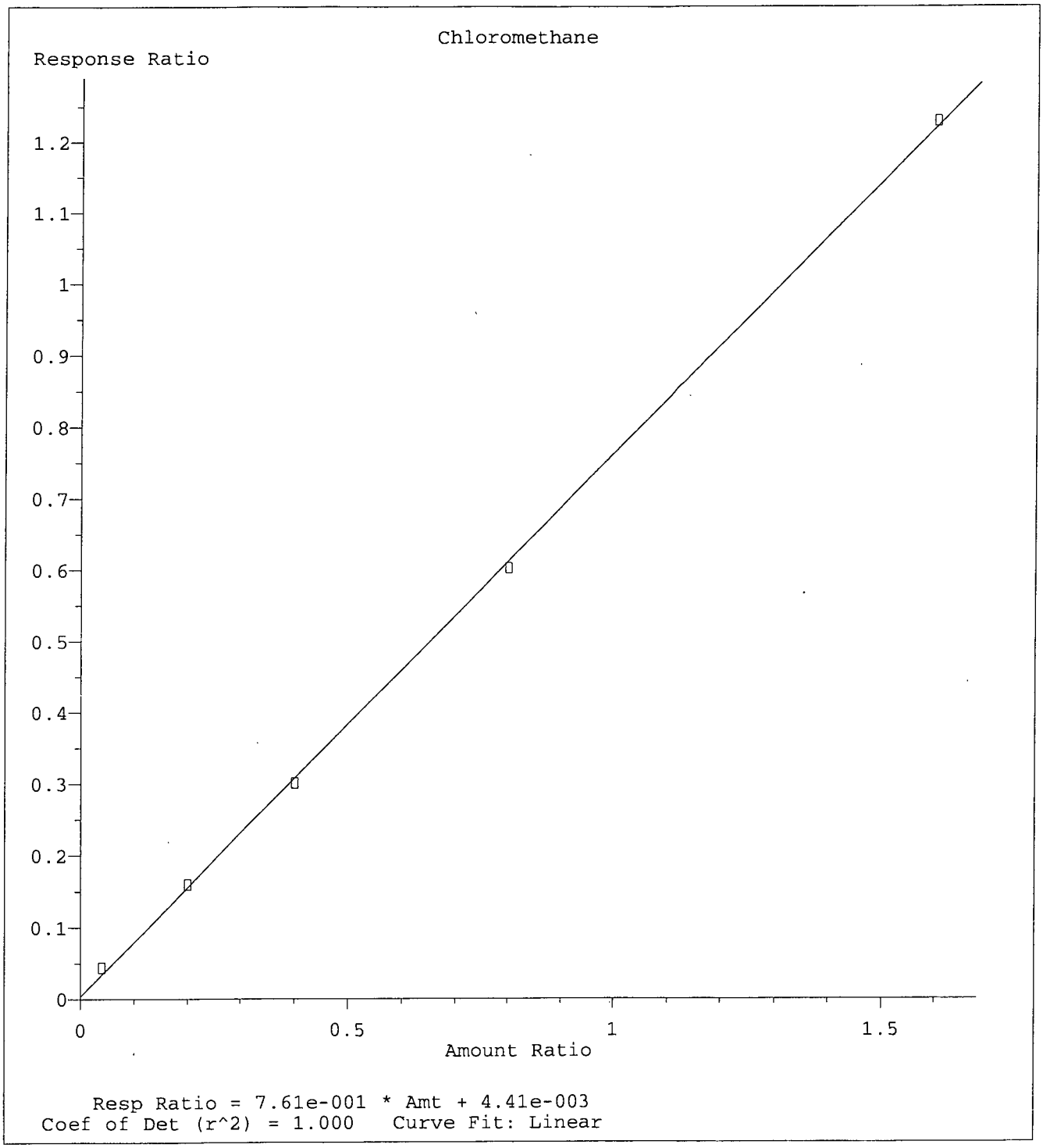
Data File : M:\LOKI\DATA\141110\1110L12.D
Acq On : 10 Nov 14 21:22
Sample : 100ug/L Vol Std 11-10-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 11
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

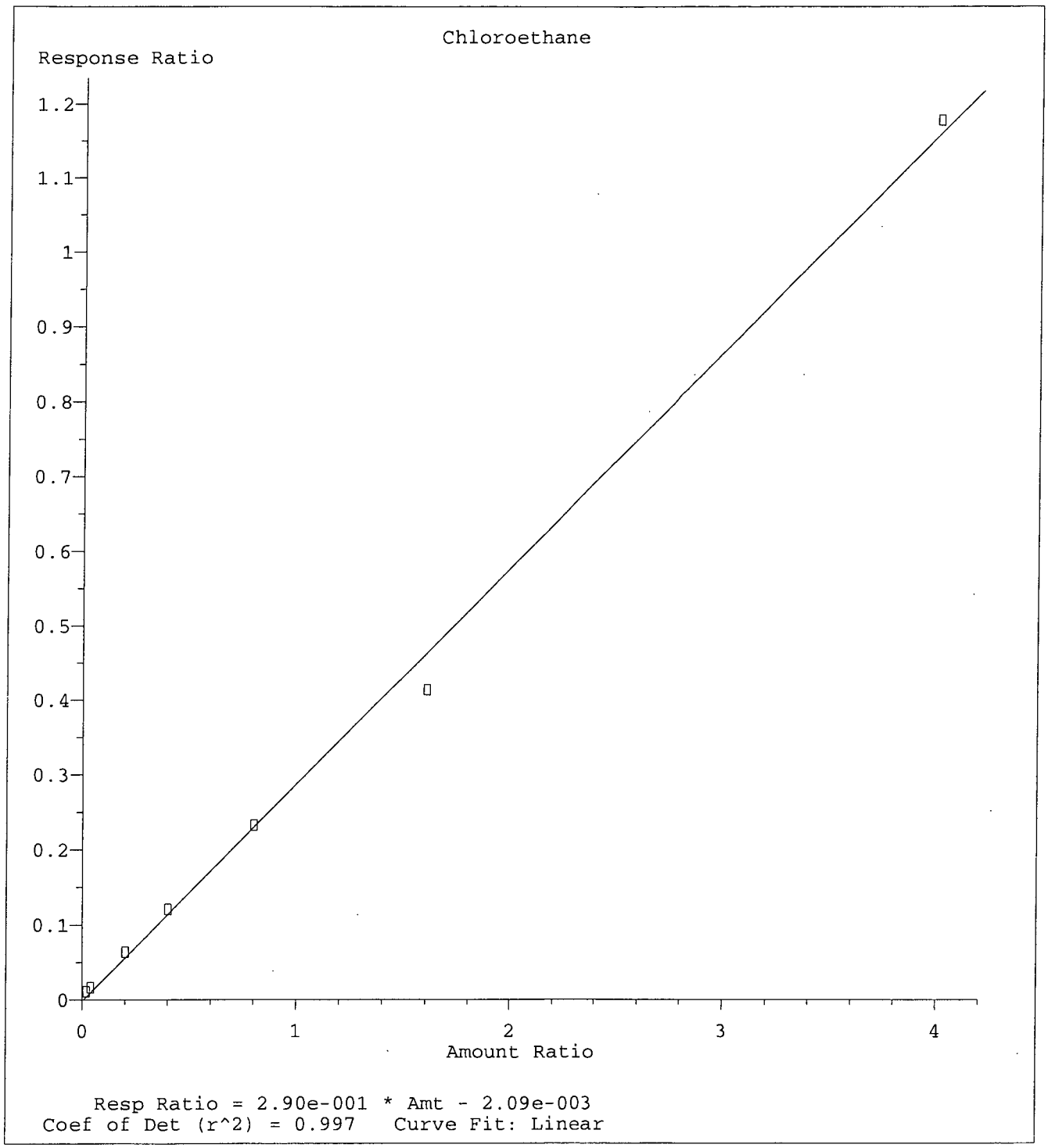
Quant Time: Nov 18 10:27 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

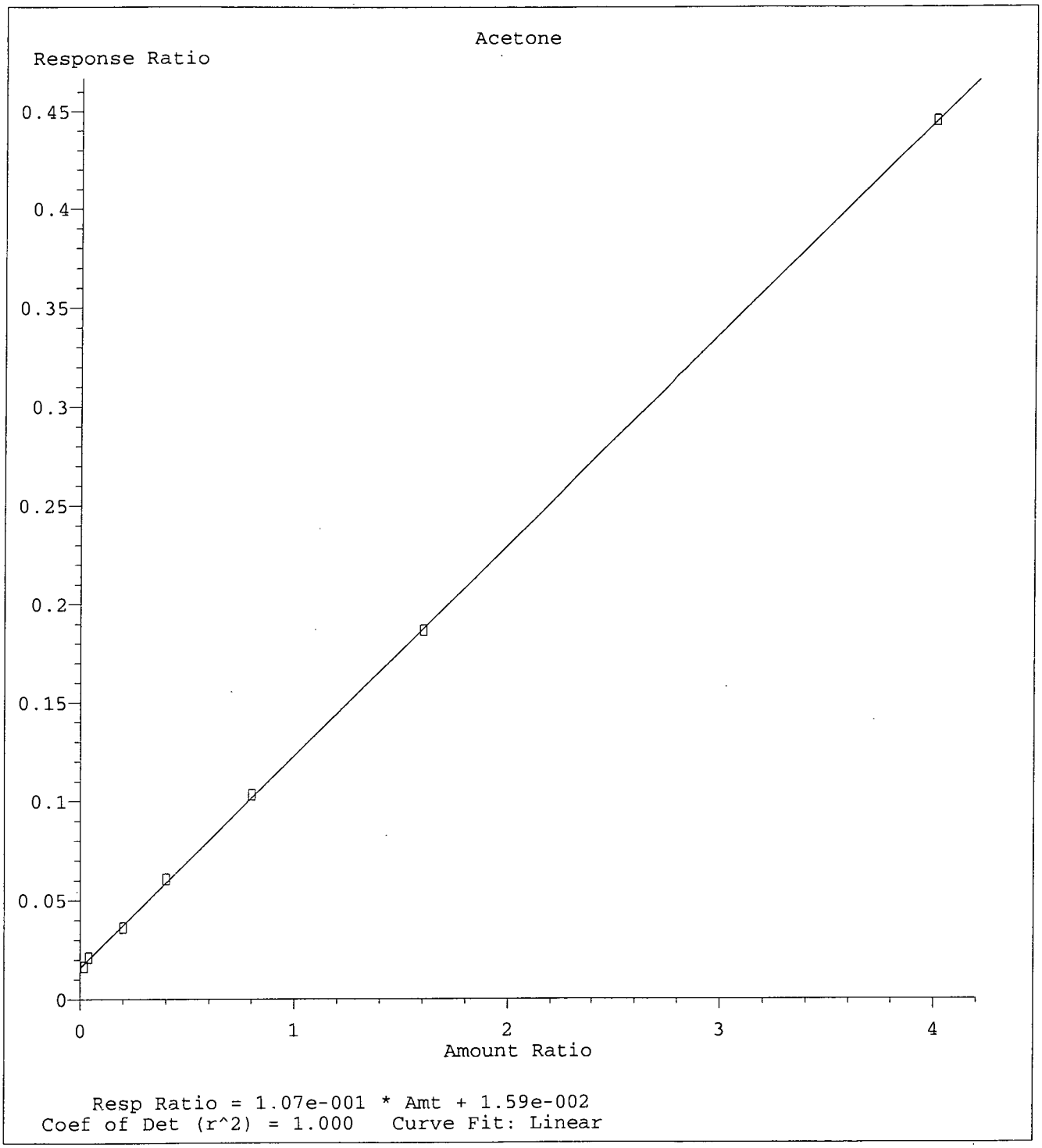




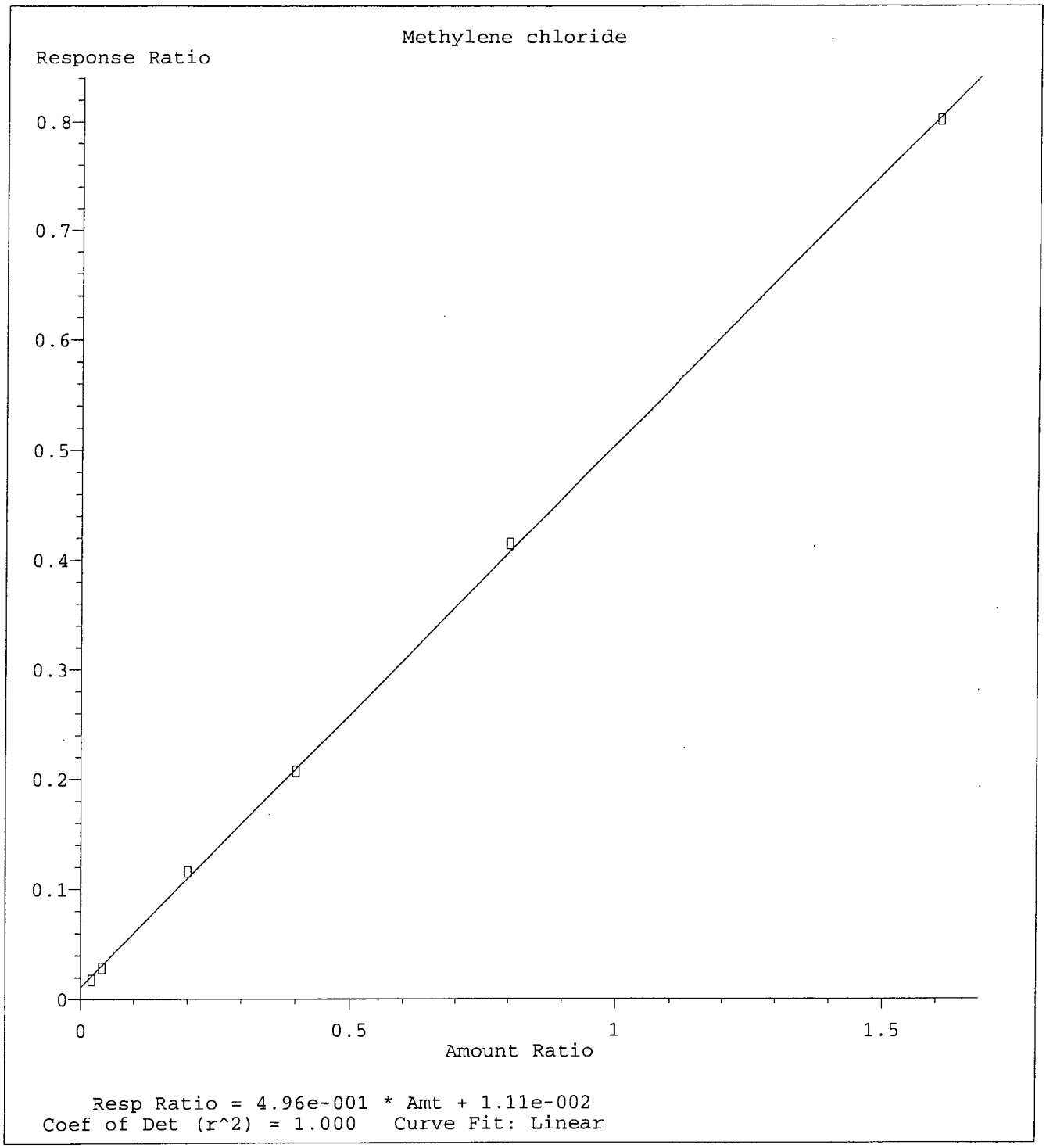

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



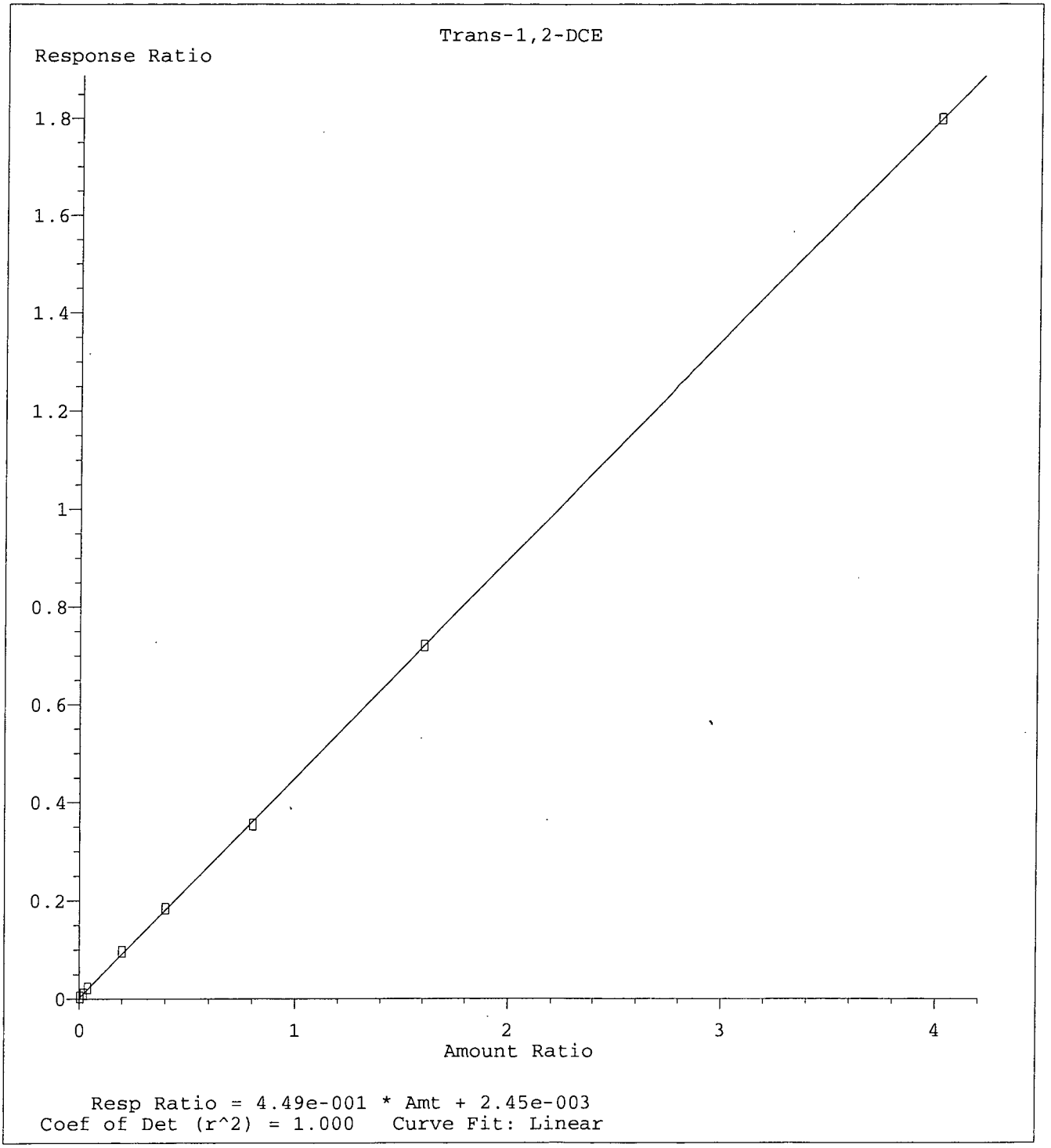

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



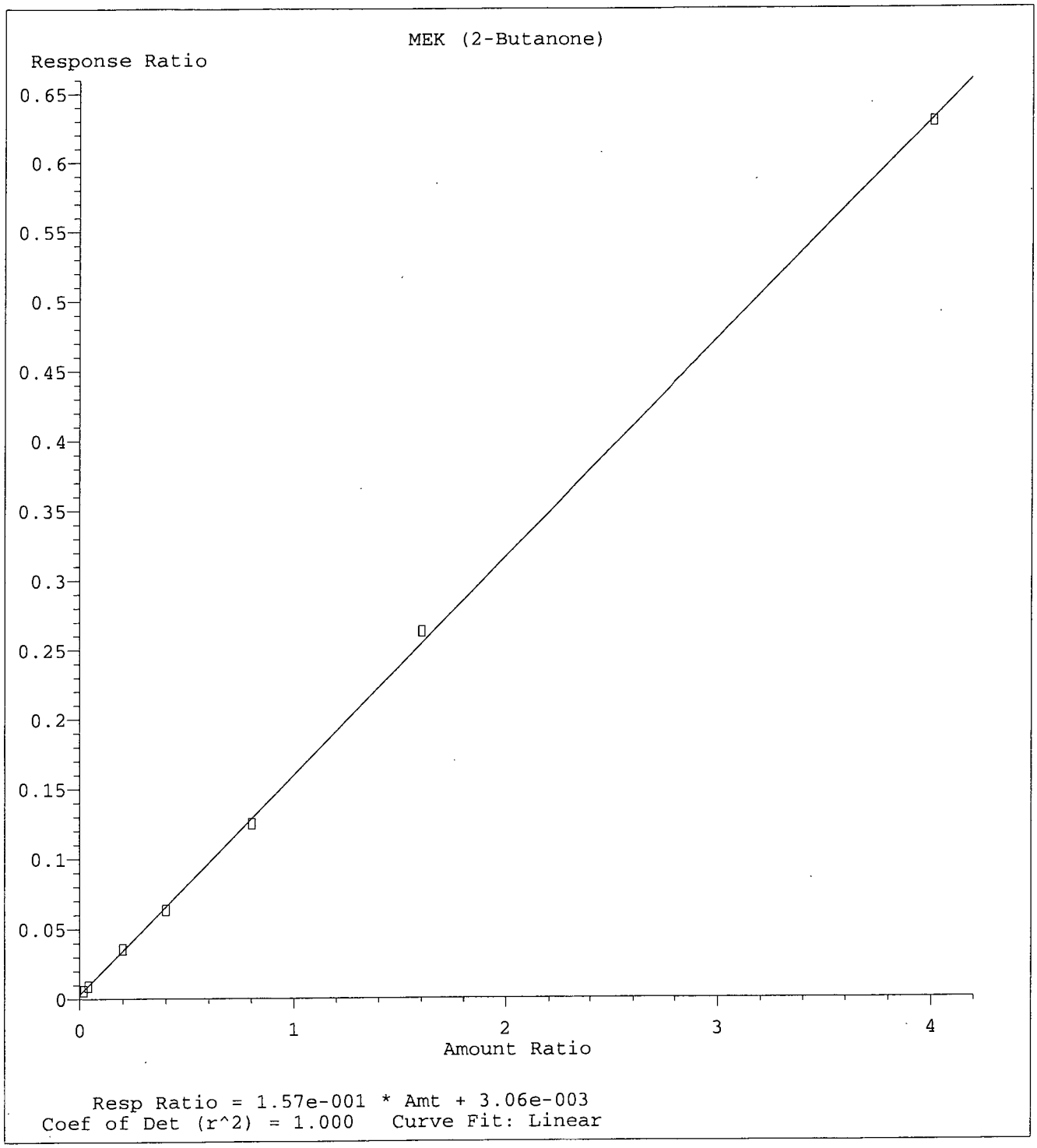

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



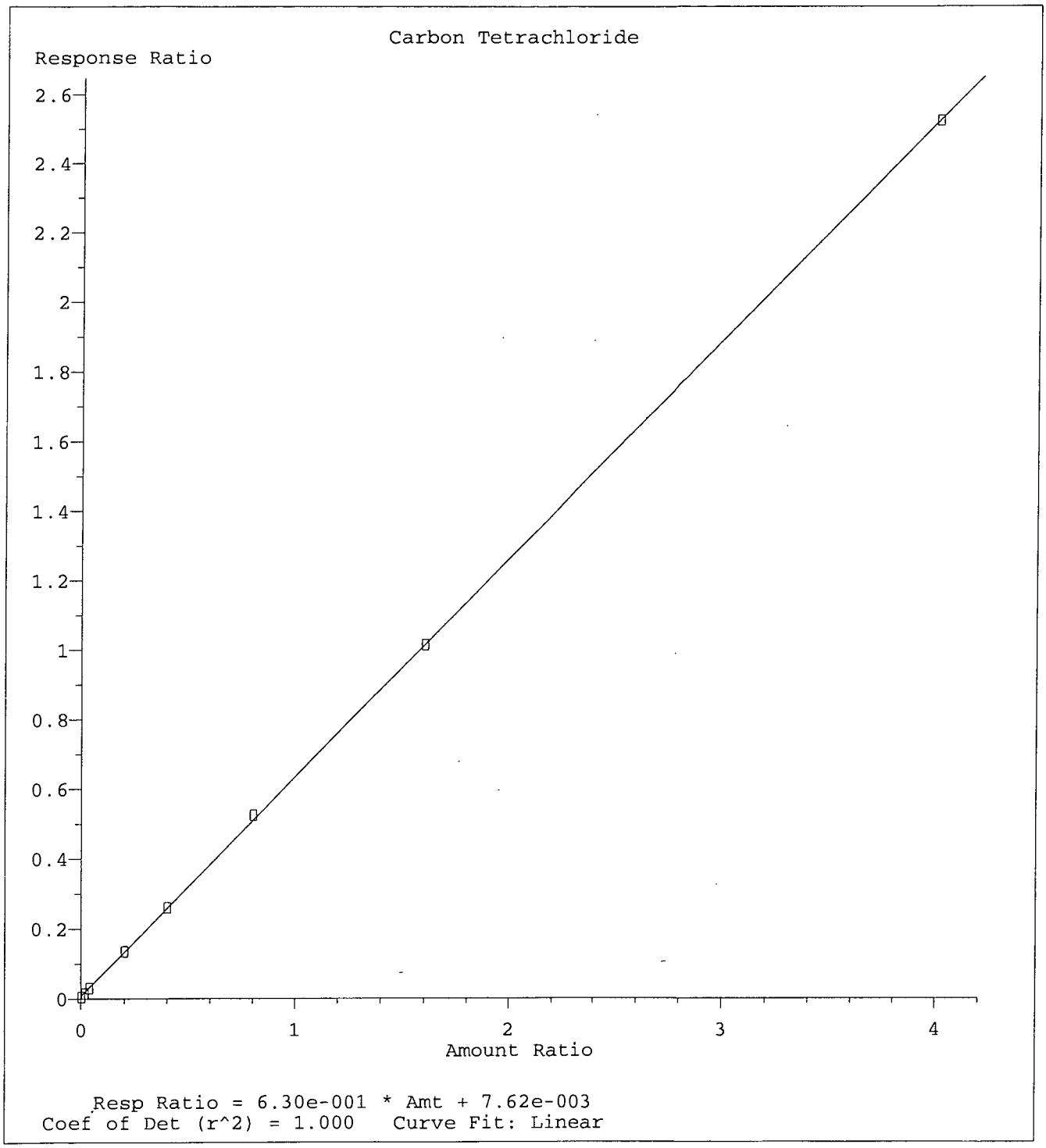

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



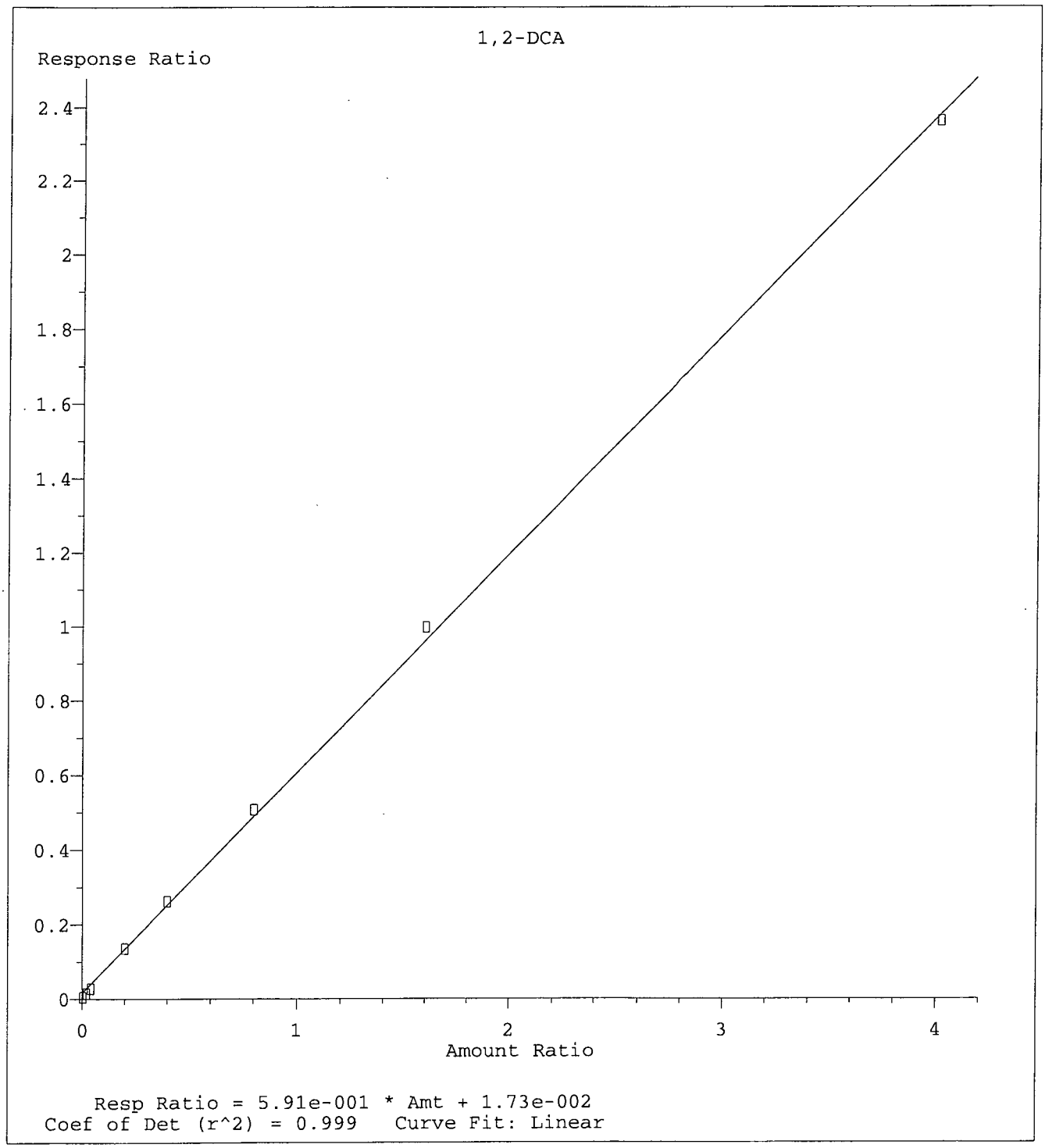

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



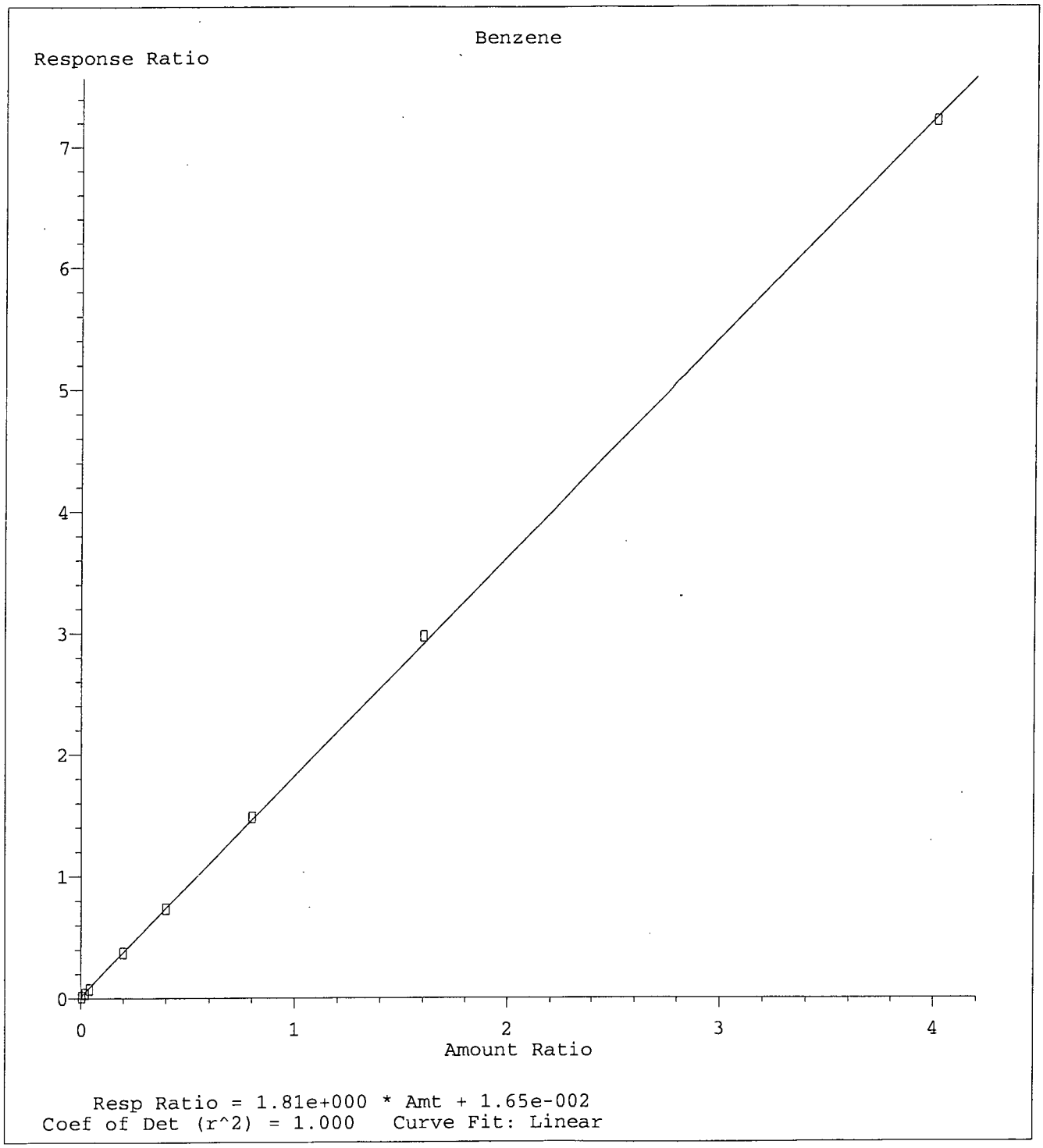

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



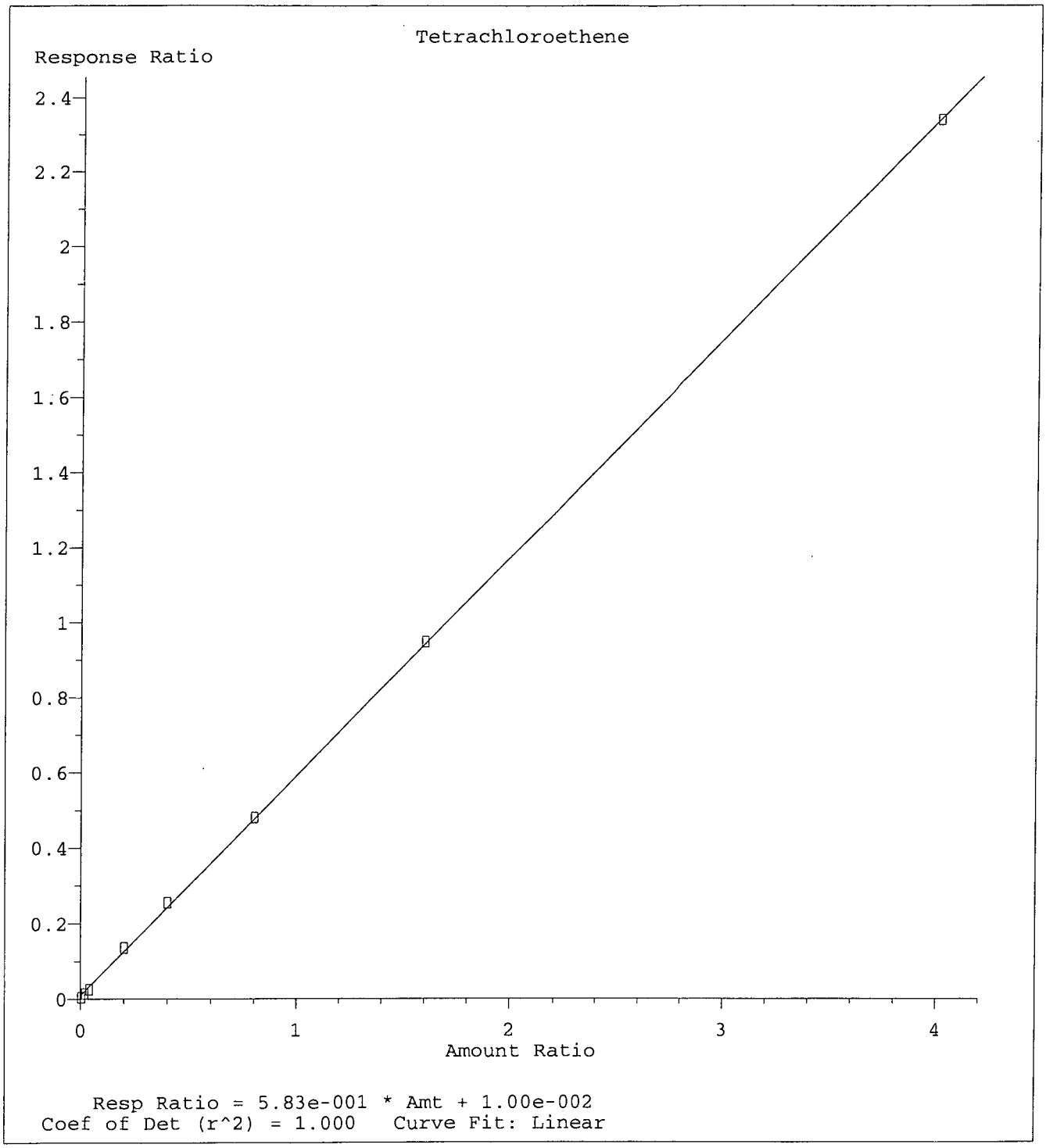

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



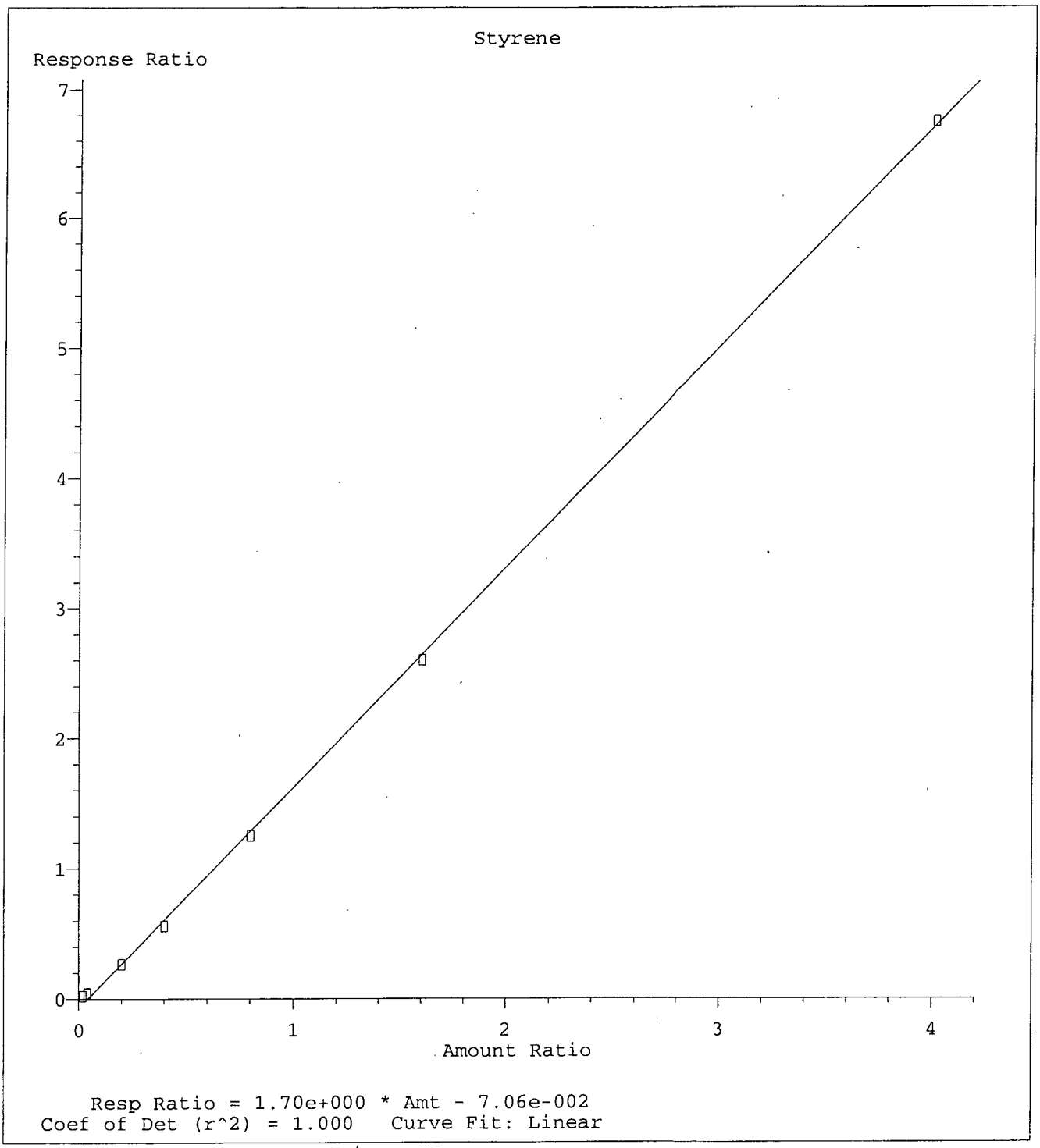

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



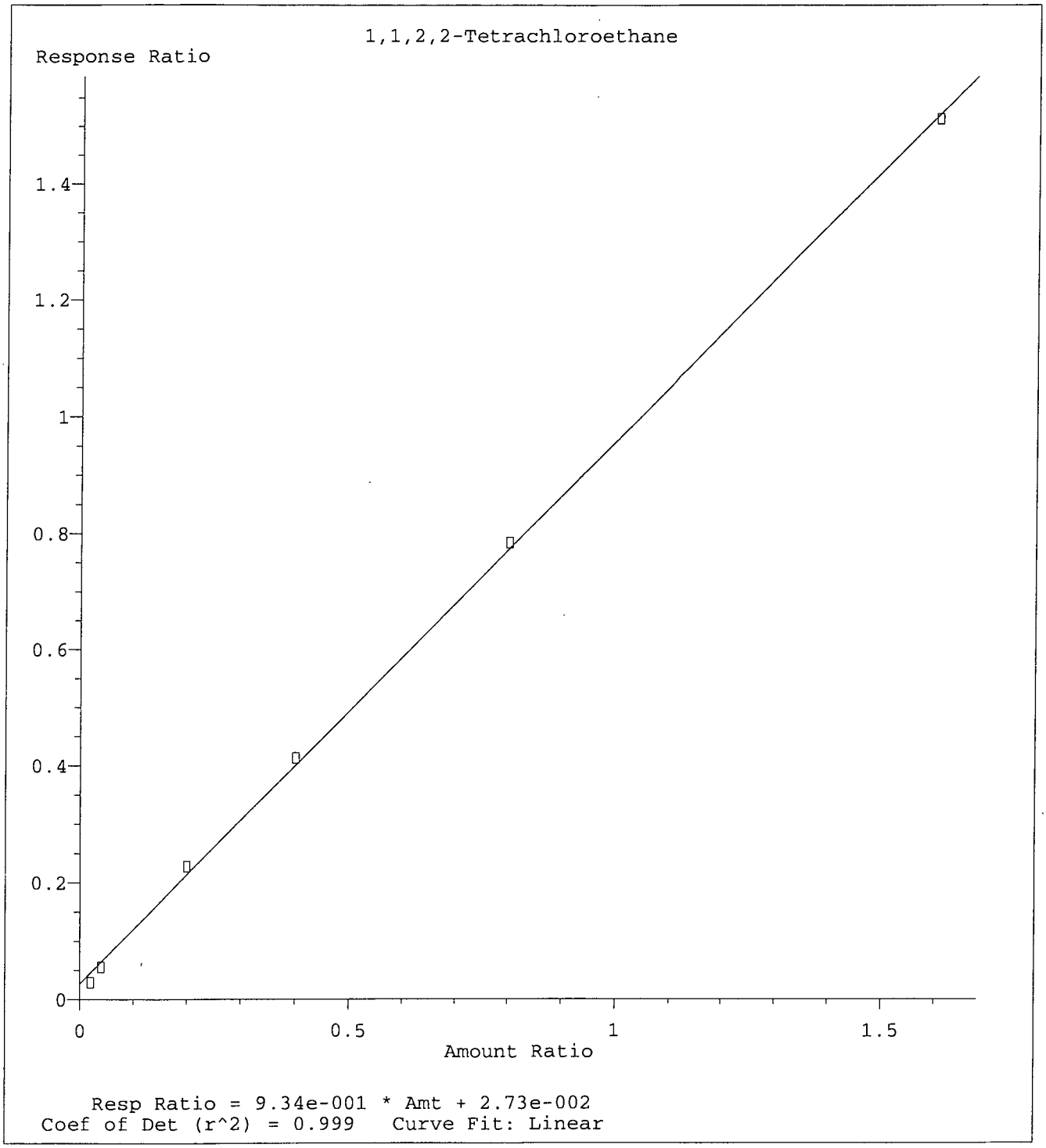

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



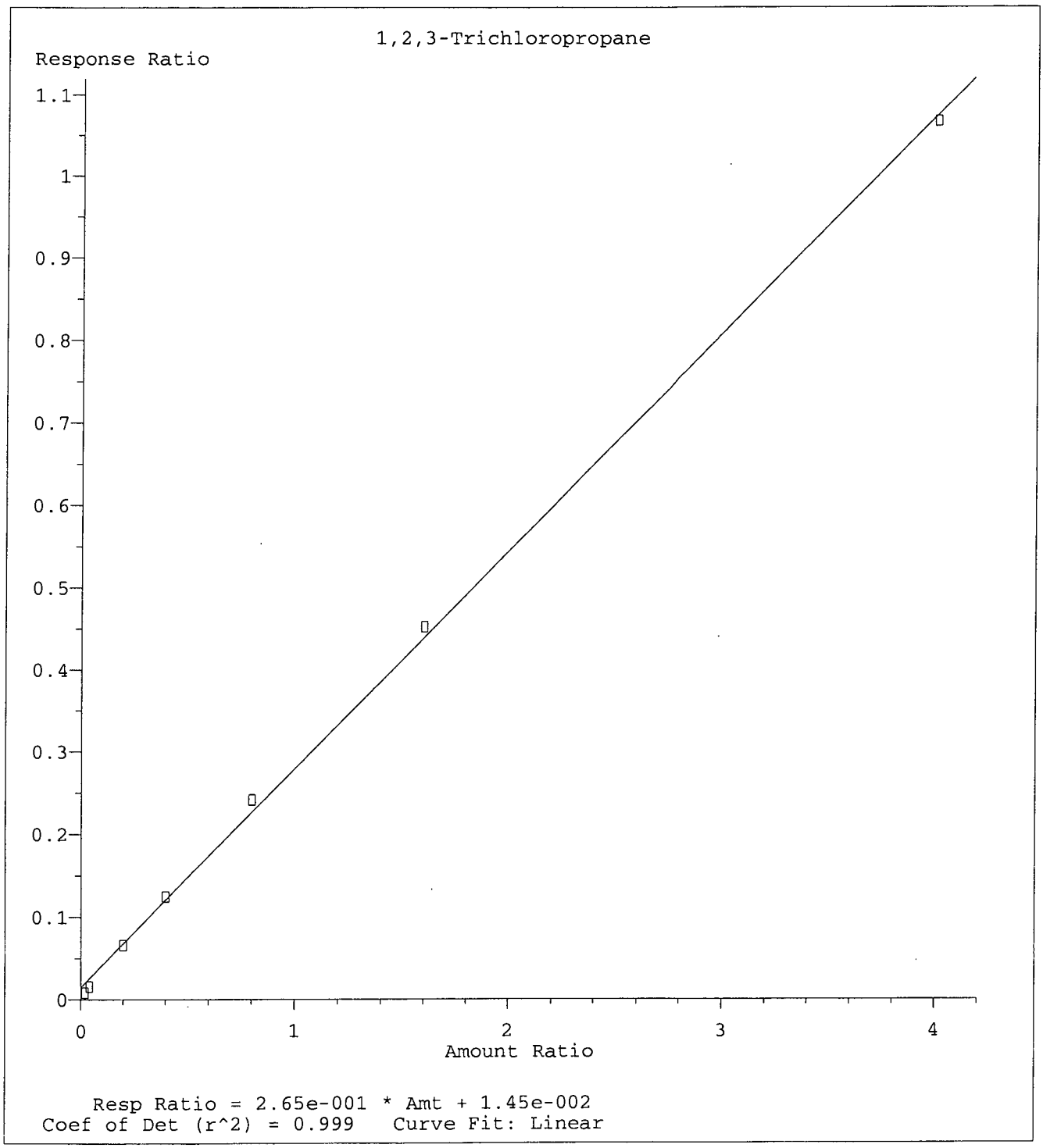

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014



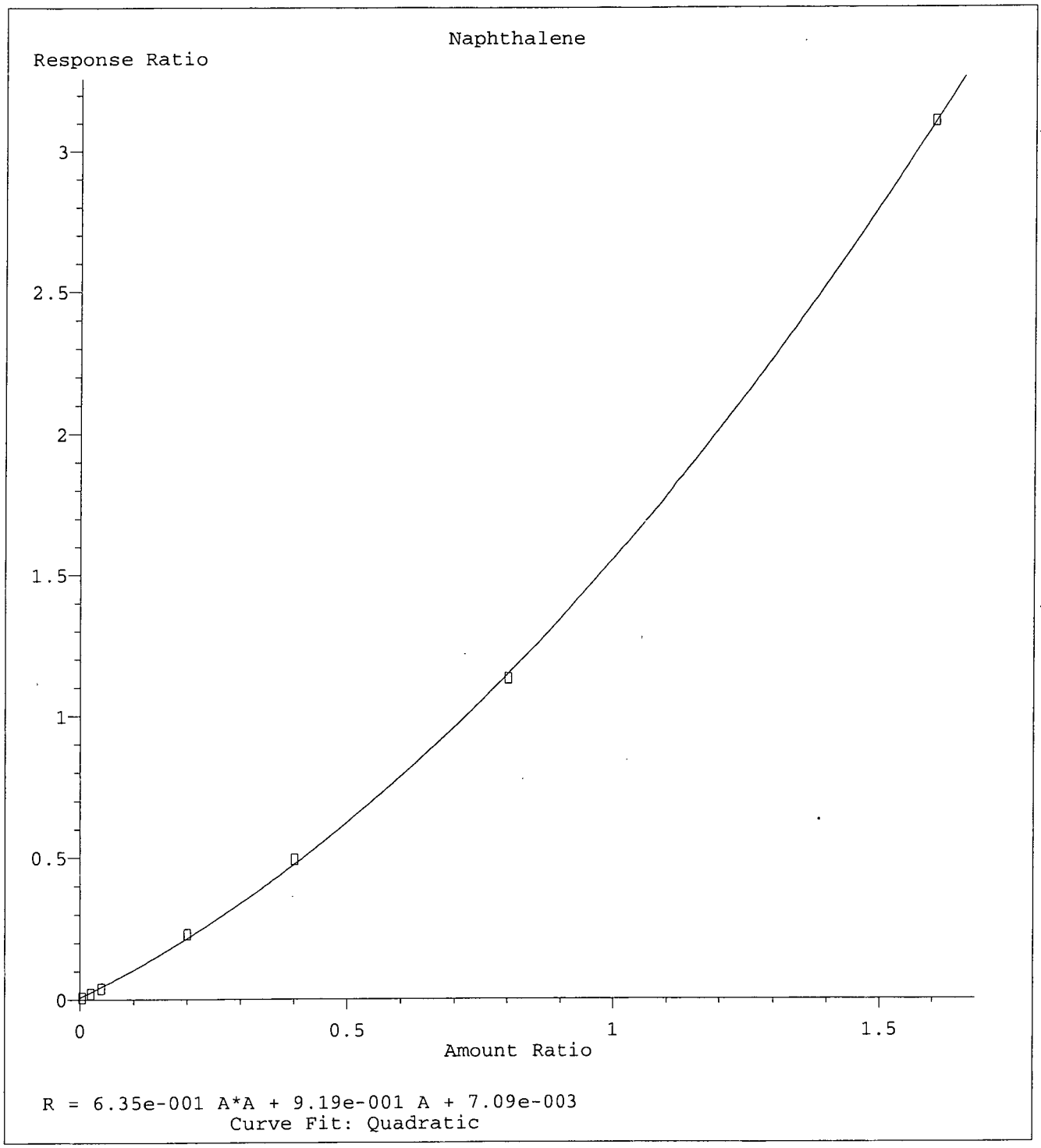

Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014




Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014




Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014




Method Name: M:\LOKI\DATA\141104\LCREDW.M
Calibration Table Last Updated: Tue Nov 18 10:54:23 2014

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 11/11/14
Instrument: Loki
Initial Cal. Date: 11/10/14
Data File: 1111L04.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TM | Dichlorodifluoromethane | 0.4277 | 0.3888 | 9.1 | TM | |
| 3 | TM | Freon 114 | 0.3991 | 0.4206 | 5.4 | TM | |
| 4 | TM**L | Chloromethane | 0.8344 | 0.6959 | 17 | TM**L | 10 |
| 5 | TM* | Vinyl chloride | 0.6320 | 0.5451 | 14 | TM* | |
| 6 | TM | Bromomethane | 0.2848 | 0.2509 | 12 | TM | |
| 7 | TML | Chloroethane | 0.3473 | 0.2836 | 18 | TML | 0.58 |
| 8 | TM | Dichlorofluoromethane | 1.018 | 0.9728 | 4.5 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7310 | 0.6857 | 6.2 | TM | |
| 10 | TM | Acrolein | 0.0290 | 0.0270 | 6.7 | TM | |
| 11 | TML | Acetone | 0.2908 | 0.1335 | 54 | TML | 13 |
| 12 | TM | Freon-113 | 0.4262 | 0.4262 | 0.02 | TM | |
| 13 | TM* | 1,1-DCE | 0.6930 | 0.6509 | 6.1 | TM* | |
| 14 | TM | t-Butanol | 0.0299 | 0.0290 | 2.8 | TM | |
| 15 | TM | Acetonitrile | 0.0564 | 0.0511 | 9.5 | TM | |
| 16 | TM | Methyl Acetate | 0.3397 | 0.3289 | 3.2 | TM | |
| 17 | TM | Iodomethane | 0.0886 | 0.0847 | 4.3 | TM | |
| 18 | TM | Acrylonitrile | 0.1259 | 0.1198 | 4.8 | TM | |
| 19 | TML | Methylene chloride | 0.6179 | 0.5173 | 16 | TML | 1.3 |
| 20 | TM | Carbon disulfide | 1.449 | 1.358 | 6.3 | TM | |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.128 | 1.080 | 4.3 | TM | |
| 22 | TML | Trans-1,2-DCE | 0.5305 | 0.4452 | 16 | TML | 2.2 |
| 23 | TM | Diisopropyl Ether | 1.419 | 1.363 | 3.9 | TM | |
| 24 | TM** | 1,1-DCA | 0.8848 | 0.8444 | 4.6 | TM** | |
| 25 | TM | Hexane | 0.4250 | 0.4433 | 4.3 | TM | |
| 26 | TM | Vinyl Acetate | 0.3063 | 0.2883 | 5.9 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.173 | 1.109 | 5.4 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.1892 | 0.1563 | 17 | TML | 5.4 |
| 29 | TM | Cis-1,2-DCE | 0.5203 | 0.5023 | 3.5 | TM | |
| 30 | TM | 2,2-Dichloropropane | 0.6482 | 0.6579 | 1.5 | TM | |
| 31 | TM* | Chloroform | 1.017 | 0.8527 | 16 | TM* | |
| 32 | TM | Bromochloromethane | 0.2650 | 0.2446 | 7.7 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5573 | 0.4984 | 11 | S | |
| 34 | TM | 1,1,1-TCA | 0.7476 | 0.7289 | 2.5 | TM | |
| 35 | TM | Cyclohexane | 0.3526 | 0.3521 | 0.13 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5646 | 0.5533 | 2.0 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.084 | 1.163 | 7.3 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.6184 | 0.5587 | 9.7 | S | |
| 39 | TML | Carbon Tetrachloride | 0.7508 | 0.6490 | 14 | TML | 0.04 |
| 40 | TM | Tert Amyl Methyl Ether | 1.086 | 1.069 | 1.6 | TM | |
| | | Average | | | 8.7 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/11/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1111L04.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TML | 1,2-DCA | 0.7300 | 0.6428 | 12 | TML | 1.5 |
| 42 | TML | Benzene | 2.029 | 1.784 | 12 | TML | 3.6 |
| 43 | TM | TCE | 0.4849 | 0.4534 | 6.5 | TM | |
| 44 | TM | 2-Pentanone | 0.2924 | 0.2916 | 0.27 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5384 | 0.5171 | 3.9 | TM* | |
| 46 | TM | Bromodichloromethane | 0.6845 | 0.6491 | 5.2 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5705 | 0.5533 | 3.0 | TM | |
| 48 | TM | Dibromomethane | 0.3131 | 0.2965 | 5.3 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | 0.0149 | 0.0140 | 6.3 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3545 | 0.3169 | 11 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4025 | 0.3739 | 7.1 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7338 | 0.6888 | 6.1 | TM | |
| 53 | TM* | Toluene | 1.877 | 1.892 | 0.82 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6327 | 0.6083 | 3.8 | TM | |
| 55 | TM | 1,1,2-TCA | 0.3637 | 0.3528 | 3.0 | TM | |
| 56 | TM | 2-Hexanone | 0.2202 | 0.2241 | 1.8 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.979 | 1.955 | 1.2 | S | |
| 59 | TM | 1,2-EDB | 0.4845 | 0.4832 | 0.27 | TM | |
| 60 | TML | Tetrachloroethene | 0.6857 | 0.6301 | 8.1 | TML | 3.7 |
| 61 | TM | 1-Chlorohexane | 0.5878 | 0.6036 | 2.7 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6393 | 0.6231 | 2.5 | TM | |
| 63 | TM | m&p-Xylene | 0.8786 | 0.9041 | 2.9 | TM | |
| 64 | TM | o-Xylene | 0.8189 | 0.8228 | 0.48 | TM | |
| 65 | TML | Styrene | 1.396 | 1.442 | 3.3 | TML | 4.6 |
| 66 | S | 4-Bromofluorobenzene(S) | 0.7265 | 0.7257 | 0.12 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8104 | 0.8266 | 2.0 | TM | |
| 68 | TM | Dibromochloromethane | 0.6010 | 0.6035 | 0.42 | TM | |
| 69 | TM** | Chlorobenzene | 1.568 | 1.514 | 3.5 | TM** | |
| 70 | TM* | Ethylbenzene | 2.280 | 2.346 | 2.9 | TM* | |
| 71 | TM** | Bromoform | 0.4331 | 0.4296 | 0.80 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.456 | 3.192 | 7.7 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.157 | 1.038 | 10 | TM**L | 3.8 |
| 75 | TML | 1,2,3-Trichloropropane | 0.3268 | 0.2989 | 8.5 | TML | 0.99 |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2546 | 0.2514 | 1.3 | TM | |
| 77 | TM | Bromobenzene | 1.176 | 1.095 | 6.9 | TM | |
| 78 | TM | n-Propylbenzene | 4.249 | 4.117 | 3.1 | TM | |
| 79 | TM | 4-Ethyltoluene | 3.552 | 3.490 | 1.8 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.745 | 2.669 | 2.8 | TM | |
| | | Average | | | 4.2 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/11/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1111L04.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 3.183 | 3.229 | 1.4 | TM | |
| 82 | TM | 4-Chlorotoluene | 3.222 | 3.278 | 1.7 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.554 | 2.398 | 6.1 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 3.083 | 2.996 | 2.8 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.703 | 3.657 | 1.2 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.161 | 3.113 | 1.5 | TM | |
| 87 | TM | Benzyl Chloride | 1.353 | 1.352 | 0.08 | TM | |
| 88 | TM | 1,3-DCB | 2.162 | 2.069 | 4.3 | TM | |
| 89 | TM | 1,4-DCB | 2.366 | 2.176 | 8.0 | TM | |
| 90 | TM | n-Butylbenzene | 3.066 | 2.914 | 4.9 | TM | |
| 91 | TM | 1,2-DCB | 2.079 | 1.915 | 7.9 | TM | |
| 92 | TM | Hexachloroethane | 0.8134 | 0.7294 | 10 | TM | |
| 93 | TM | 1,2-Dibromo-3-chloropropane | 0.1992 | 0.1899 | 4.7 | TM | |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.281 | 1.206 | 5.9 | TM | |
| 95 | TM | Hexachlorobutadiene | 0.8464 | 0.8068 | 4.7 | TM | |
| 96 | TMQ | Naphthalene | 1.351 | 1.285 | 4.9 | TMQ | 6.6 |
| 97 | TM | 1,2,3-Trichlorobenzene | 0.8134 | 0.7678 | 5.6 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
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| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 4.5 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1111L04.D
Acq On : 11 Nov 14 13:28
Sample : 141111A LCS-WL(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 629696 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 524800 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 332160 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.12 | 111 | 313836 | 22.35851 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 93.116% | |
| 38) 1,2-DCA-D4(S) | 5.53 | 65 | 351838 | 22.58650 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 90.405% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 1025855 | 24.69334 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 99.178% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 380822 | 24.96964 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 109.017% | |

*Algorithm check: 137299X25 / 629696X0.6320 = 8.625 ✓ 12/5/14

| Target Compounds | | | | | | Qvalue |
|---|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 97942 | 9.09127 ppb | | 100 |
| 3) Freon 114 | 1.10 | 85 | 105929 | 10.53700 ppb | | 100 |
| 4) Chloromethane | 1.14 | 50 | 175293 | 8.99614 ppb | | 100 |
| 5) Vinyl chloride | 1.22 | 62 | *137299 | 8.62561 ppb | | 99 |
| 6) Bromomethane | 1.45 | 94 | 63192 | 8.80991 ppb | | 97 |
| 7) Chloroethane | 1.53 | 64 | 71431 | 9.94209 ppb | | 96 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 245029 | 9.55481 ppb | | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 172705 | 9.37980 ppb | | 98 |
| 10) Acrolein | 2.10 | 56 | 85139 | 116.62818 ppb | # | 95 |
| 11) Acetone | 2.25 | 43 | 33631 | 8.73258 ppb | | 97 |
| 12) Freon-113 | 2.20 | 101 | 107343 | 9.99823 ppb | | 90 |
| 13) 1,1-DCE | 2.18 | 61 | 163935 | 9.39214 ppb | | 98 |
| 14) t-Butanol | 2.88 | 59 | 91412 | 121.45303 ppb | | 100 |
| 15) Acetonitrile | 2.52 | 41 | 160903 | 113.16750 ppb | | 97 |
| 16) Methyl Acetate | 2.60 | 43 | 82844 | 9.68281 ppb | | 99 |
| 17) Iodomethane | 2.31 | 142 | 21344 | 9.56808 ppb | | 97 |
| 18) Acrylonitrile | 2.96 | 52 | 30184 | 9.52183 ppb | | 90 |
| 19) Methylene chloride | 2.67 | 84 | 130285 | 9.86667 ppb | | 99 |
| 20) Carbon disulfide | 2.36 | 76 | 342014 | 9.37136 ppb | | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 271909 | 9.57338 ppb | | 98 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 112130 | 9.78029 ppb | | 99 |
| 23) Diisopropyl Ether | 3.71 | 45 | 343193 | 9.60535 ppb | | 96 |
| 24) 1,1-DCA | 3.53 | 63 | 212692 | 9.54350 ppb | | 97 |
| 25) Hexane | 3.36 | 57 | 111663 | 10.43184 ppb | | 97 |
| 26) Vinyl Acetate | 3.69 | 43 | 72616 | 9.41240 ppb | # | 85 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 279303 | 9.45533 ppb | | 97 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 39357 | 9.46086 ppb | | 90 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 126528 | 9.65418 ppb | | 99 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 165699 | 10.14966 ppb | | 99 |
| 31) Chloroform | 4.90 | 83 | 214788 | 8.38287 ppb | | 98 |
| 32) Bromochloromethane | 4.75 | 128 | 61601 | 9.22868 ppb | | 98 |
| 34) 1,1,1-TCA | 5.11 | 97 | 183603 | 9.74986 ppb | | 94 |
| 35) Cyclohexane | 5.16 | 41 | 88695 | 9.98735 ppb | | 89 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 139358 | 9.79989 ppb | | 100 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 292889 | 10.72743 ppb | | 99 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 163466 | 10.00380 ppb | | 96 |
| 40) Tert Amyl Methyl Ether | 5.80 | 73 | 269339 | 9.84266 ppb | | 98 |
| 41) 1,2-DCA | 5.62 | 62 | 161901 | 10.14678 ppb | | 97 |
| 42) Benzene | 5.58 | 78 | 449309 | 9.64097 ppb | | 98 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1111L04.D
Acq On : 11 Nov 14 13:28
Sample : 141111A LCS-WL(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014
Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 114213 | 9.35163 | ppb | 98 |
| 44) 2-Pentanone | 6.63 | 43 | 918146 | 124.66802 | ppb | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 130248 | 9.60507 | ppb | 98 |
| 46) Bromodichloromethane | 6.95 | 83 | 163482 | 9.48142 | ppb | 100 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 139370 | 9.69951 | ppb | 99 |
| 48) Dibromomethane | 6.75 | 93 | 74680 | 9.47066 | ppb | 96 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 3527 | 9.37331 | ppb | 80 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 79825 | 8.93890 | ppb | 94 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 94176 | 9.28920 | ppb | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 173486 | 9.38620 | ppb | 97 |
| 53) Toluene | 7.78 | 91 | 476666 | 10.08195 | ppb | 97 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 153220 | 9.61504 | ppb | 98 |
| 55) 1,1,2-TCA | 8.21 | 83 | 88867 | 9.70206 | ppb | 92 |
| 56) 2-Hexanone | 8.50 | 43 | 56451 | 10.17706 | ppb | 93 |
| 59) 1,2-EDB | 8.69 | 107 | 101442 | 9.97330 | ppb | 98 |
| 60) Tetrachloroethene | 8.34 | 166 | 132271 | 10.37158 | ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 126713 | 10.26916 | ppb | 91 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 130802 | 9.74722 | ppb | 99 |
| 63) m&p-Xylene | 9.46 | 106 | 379594 | 20.58030 | ppb | 97 |
| 64) o-Xylene | 9.85 | 106 | 172727 | 10.04787 | ppb | 100 |
| 65) Styrene | 9.86 | 104 | 302690 | 9.53765 | ppb | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 173515 | 10.19948 | ppb | 98 |
| 68) Dibromochloromethane | 8.60 | 129 | 126693 | 10.04200 | ppb | 96 |
| 69) Chlorobenzene | 9.21 | 112 | 317824 | 9.65407 | ppb | 100 |
| 70) Ethylbenzene | 9.34 | 91 | 492540 | 10.29093 | ppb | 100 |
| 71) Bromoform | 10.02 | 173 | 90181 | 9.91965 | ppb | 94 |
| 73) Isopropylbenzene | 10.22 | 105 | 424065 | 9.23450 | ppb | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 137902 | 10.38480 | ppb | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 39712 | 9.90066 | ppb | 91 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 33396 | 9.87084 | ppb | 97 |
| 77) Bromobenzene | 10.49 | 156 | 145553 | 9.31227 | ppb | 93 |
| 78) n-Propylbenzene | 10.63 | 91 | 547012 | 9.68998 | ppb | 99 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 463633 | 9.82340 | ppb | 97 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 354645 | 9.72293 | ppb | 98 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 428960 | 10.14202 | ppb | 98 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 435547 | 10.17458 | ppb | 98 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 318615 | 9.39110 | ppb | 99 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 398080 | 9.71946 | ppb | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 485916 | 9.87750 | ppb | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 413579 | 9.84626 | ppb | 99 |
| 87) Benzyl Chloride | 11.67 | 91 | 179570 | 9.99201 | ppb | 98 |
| 88) 1,3-DCB | 11.43 | 146 | 274942 | 9.57220 | ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 289106 | 9.19743 | ppb | 100 |
| 90) n-Butylbenzene | 11.91 | 91 | 387231 | 9.50562 | ppb | 98 |
| 91) 1,2-DCB | 11.89 | 146 | 254433 | 9.20915 | ppb | 97 |
| 92) Hexachloroethane | 12.14 | 117 | 96915 | 8.96716 | ppb | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 25228 | 9.53440 | ppb | 95 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 160199 | 9.40936 | ppb | 99 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 107194 | 9.53188 | ppb | 99 |
| 96) Naphthalene | 13.72 | 128 | 170752 | 10.65708 | ppb | 100 |
| 97) 1,2,3-Trichlorobenzene | 13.97 | 180 | 102008 | 9.43850 | ppb | 98 |

(#) = qualifier out of range (m) = manual integration

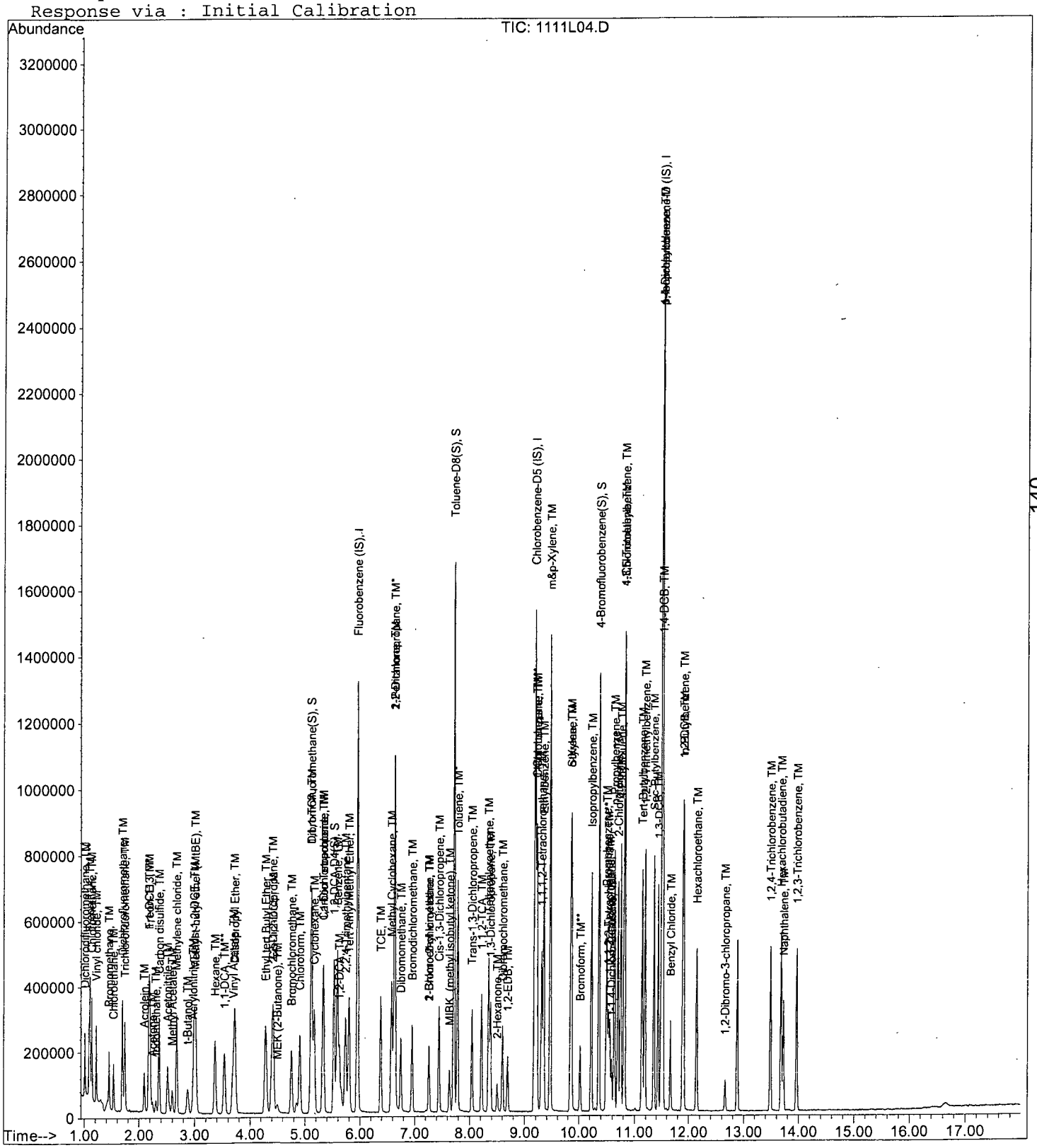
Quantitation Report

Data File : M:\LOKI\DATA\141110\1111L04.D
Acq On : 11 Nov 14 13:28
Sample : 141111A LCS-WL(SS)
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration



VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 11/14/14
Instrument: Loki
Initial Cal. Date: 11/10/14
Data File: 1114L05.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | I | Fluorobenzene (IS) | ISTD | | | I | |
| 2 | TM | Dichlorodifluoromethane | 0.4277 | 0.4153 | 2.9 | TM | |
| 3 | TM | Freon 114 | 0.3991 | 0.4088 | 2.4 | TM | |
| 4 | TM**L | Chloromethane | 0.8344 | 0.7546 | 9.6 | TM**L | 2.3 |
| 5 | TM* | Vinyl chloride | 0.6320 | 0.5810 | 8.1 | TM* | |
| 6 | TM | Bromomethane | 0.2848 | 0.2527 | 11 | TM | |
| 7 | TML | Chloroethane | 0.3473 | 0.3091 | 11 | TML | 8.2 |
| 8 | TM | Dichlorofluoromethane | 1.018 | 1.032 | 1.4 | TM | |
| 9 | TM | Trichlorofluoromethane | 0.7310 | 0.7261 | 0.67 | TM | |
| 10 | TM | Acrolein | 0.0290 | 0.0262 | 9.5 | TM | |
| 11 | TML | Acetone | 0.2908 | 0.1441 | 50 | TML | 2.8 |
| 12 | TM | Freon-113 | 0.4262 | 0.4163 | 2.3 | TM | |
| 13 | TM* | 1,1-DCE | 0.6930 | 0.6934 | 0.06 | TM* | |
| 14 | TM | t-Butanol | 0.0299 | 0.0262 | 12 | TM | |
| 15 | TM | Acetonitrile | 0.0564 | 0.0545 | 3.4 | TM | |
| 16 | TM | Methyl Acetate | 0.3397 | 0.3221 | 5.2 | TM | |
| 17 | TM | Iodomethane | 0.0886 | 0.1016 | 15 | TM | |
| 18 | TM | Acrylonitrile | 0.1259 | 0.1178 | 6.4 | TM | |
| 19 | TML | Methylene chloride | 0.6179 | 0.5361 | 13 | TML | 2.5 |
| 20 | TM | Carbon disulfide | 1.449 | 1.356 | 6.4 | TM | |
| 21 | TM | Methyl t-butyl ether (MtBE) | 1.128 | 1.041 | 7.7 | TM | |
| 22 | TML | Trans-1,2-DCE | 0.5305 | 0.4730 | 11 | TML | 4.0 |
| 23 | TM | Diisopropyl Ether | 1.419 | 1.461 | 3.0 | TM | |
| 24 | TM** | 1,1-DCA | 0.8848 | 0.9242 | 4.5 | TM** | |
| 25 | TM | Hexane | 0.4250 | 0.4455 | 4.8 | TM | |
| 26 | TM | Vinyl Acetate | 0.3063 | 0.3195 | 4.3 | TM | |
| 27 | TM | Ethyl tert Butyl Ether | 1.173 | 1.165 | 0.70 | TM | |
| 28 | TML | MEK (2-Butanone) | 0.1892 | 0.1676 | 11 | TML | 1.8 |
| 29 | TM | Cis-1,2-DCE | 0.5203 | 0.5187 | 0.31 | TM | |
| 30 | TM | 2,2-Dichloropropane | 0.6482 | 0.7227 | 11 | TM | |
| 31 | TM* | Chloroform | 1.017 | 0.8991 | 12 | TM* | |
| 32 | TM | Bromochloromethane | 0.2650 | 0.2481 | 6.4 | TM | |
| 33 | S | Dibromofluoromethane(S) | 0.5573 | 0.5219 | 6.4 | S | |
| 34 | TM | 1,1,1-TCA | 0.7476 | 0.7686 | 2.8 | TM | |
| 35 | TM | Cyclohexane | 0.3526 | 0.3685 | 4.5 | TM | |
| 36 | TM | 1,1-Dichloropropene | 0.5646 | 0.5759 | 2.0 | TM | |
| 37 | TM | 2,2,4-Trimethylpentane | 1.084 | 1.236 | 14 | TM | |
| 38 | S | 1,2-DCA-D4(S) | 0.6184 | 0.5870 | 5.1 | S | |
| 39 | TML | Carbon Tetrachloride | 0.7508 | 0.6677 | 11 | TML | 3.0 |
| 40 | TM | Tert Amyl Methyl Ether | 1.086 | 1.062 | 2.3 | TM | |
| | | Average | | | 7.6 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/14/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1114L05.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 41 | TML | 1,2-DCA | 0.7300 | 0.6873 | 5.9 | TML | 9.0 |
| 42 | TML | Benzene | 2.029 | 1.905 | 6.1 | TML | 3.1 |
| 43 | TM | TCE | 0.4849 | 0.4636 | 4.4 | TM | |
| 44 | TM | 2-Pentanone | 0.2924 | 0.2949 | 0.87 | TM | |
| 45 | TM* | 1,2-Dichloropropane | 0.5384 | 0.5708 | 6.0 | TM* | |
| 46 | TM | Bromodichloromethane | 0.6845 | 0.6816 | 0.43 | TM | |
| 47 | TM | Methyl Cyclohexane | 0.5705 | 0.5679 | 0.46 | TM | |
| 48 | TM | Dibromomethane | 0.3131 | 0.2969 | 5.2 | TM | |
| 49 | TM | 2-Chloroethyl vinyl ether | 0.0149 | 0.0128 | 15 | TM | |
| 50 | TM | MIBK (methyl isobutyl ketone) | 0.3545 | 0.3166 | 11 | TM | |
| 51 | TM | 1-Bromo-2-chloroethane | 0.4025 | 0.3979 | 1.1 | TM | |
| 52 | TM | Cis-1,3-Dichloropropene | 0.7338 | 0.7164 | 2.4 | TM | |
| 53 | TM* | Toluene | 1.877 | 1.965 | 4.7 | TM* | |
| 54 | TM | Trans-1,3-Dichloropropene | 0.6327 | 0.6295 | 0.50 | TM | |
| 55 | TM | 1,1,2-TCA | 0.3637 | 0.3562 | 2.1 | TM | |
| 56 | TM | 2-Hexanone | 0.2202 | 0.2135 | 3.1 | TM | |
| 57 | I | Chlorobenzene-D5 (IS) | ISTD | | | I | |
| 58 | S | Toluene-D8(S) | 1.979 | 2.014 | 1.8 | S | |
| 59 | TM | 1,2-EDB | 0.4845 | 0.4726 | 2.5 | TM | |
| 60 | TML | Tetrachloroethene | 0.6857 | 0.6330 | 7.7 | TML | 4.2 |
| 61 | TM | 1-Chlorohexane | 0.5878 | 0.6098 | 3.7 | TM | |
| 62 | TM | 1,1,1,2-Tetrachloroethane | 0.6393 | 0.6243 | 2.3 | TM | |
| 63 | TM | m&p-Xylene | 0.8786 | 0.9505 | 8.2 | TM | |
| 64 | TM | o-Xylene | 0.8189 | 0.8706 | 6.3 | TM | |
| 65 | TML | Styrene | 1.396 | 1.486 | 6.4 | TML | 2.1 |
| 66 | S | 4-Bromofluorobenzene(S) | 0.7265 | 0.7447 | 2.5 | S | |
| 67 | TM | 1,3-Dichloropropane | 0.8104 | 0.8349 | 3.0 | TM | |
| 68 | TM | Dibromochloromethane | 0.6010 | 0.5907 | 1.7 | TM | |
| 69 | TM** | Chlorobenzene | 1.568 | 1.581 | 0.82 | TM** | |
| 70 | TM* | Ethylbenzene | 2.280 | 2.447 | 7.3 | TM* | |
| 71 | TM** | Bromoform | 0.4331 | 0.3979 | 8.1 | TM** | |
| 72 | I | 1,4-Dichlorobenzene-D (IS) | ISTD | | | I | |
| 73 | TM | Isopropylbenzene | 3.456 | 3.466 | 0.27 | TM | |
| 74 | TM**L | 1,1,2,2-Tetrachloroethane | 1.157 | 1.030 | 11 | TM**L | 3.0 |
| 75 | TML | 1,2,3-Trichloropropane | 0.3268 | 0.2866 | 12 | TML | 5.6 |
| 76 | TM | t-1,4-Dichloro-2-Butene | 0.2546 | 0.2268 | 11 | TM | |
| 77 | TM | Bromobenzene | 1.176 | 1.129 | 4.0 | TM | |
| 78 | TM | n-Propylbenzene | 4.249 | 4.514 | 6.2 | TM | |
| 79 | TM | 4-Ethyltoluene | 3.552 | 3.755 | 5.7 | TM | |
| 80 | TM | 2-Chlorotoluene | 2.745 | 2.864 | 4.3 | TM | |
| | | Average | | | 4.9 | | |

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

## Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 11/14/14
Instrument: Loki
Cal. Date: 11/10/14
Data File: 1114L05.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 81 | TM | 1,3,5-Trimethylbenzene | 3.183 | 3.517 | 10 | TM | |
| 82 | TM | 4-Chlorotoluene | 3.222 | 3.532 | 9.6 | TM | |
| 83 | TM | Tert-Butylbenzene | 2.554 | 2.564 | 0.40 | TM | |
| 84 | TM | 1,2,4-Trimethylbenzene | 3.083 | 3.268 | 6.0 | TM | |
| 85 | TM | Sec-Butylbenzene | 3.703 | 3.947 | 6.6 | TM | |
| 86 | TM | p-Isopropyltoluene | 3.161 | 3.266 | 3.3 | TM | |
| 87 | TM | Benzyl Chloride | 1.353 | 1.425 | 5.4 | TM | |
| 88 | TM | 1,3-DCB | 2.162 | 2.169 | 0.32 | TM | |
| 89 | TM | 1,4-DCB | 2.366 | 2.303 | 2.6 | TM | |
| 90 | TM | n-Butylbenzene | 3.066 | 3.202 | 4.4 | TM | |
| 91 | TM | 1,2-DCB | 2.079 | 1.980 | 4.8 | TM | |
| 92 | TM | Hexachloroethane | 0.8134 | 0.8019 | 1.4 | TM | |
| 93 | TM | 1,2-Dibromo-3-chloropropane | 0.1992 | 0.1756 | 12 | TM | |
| 94 | TM | 1,2,4-Trichlorobenzene | 1.281 | 1.193 | 6.9 | TM | |
| 95 | TM | Hexachlorobutadiene | 0.8464 | 0.8304 | 1.9 | TM | |
| 96 | TMQ | Naphthalene | 1.351 | 1.142 | 15 | TMQ | 3.4 |
| 97 | TM | 1,2,3-Trichlorobenzene | 0.8134 | 0.7622 | 6.3 | TM | |
| 98 | | | | | | | |
| 99 | | | | | | | |
| 100 | | | | | | | |
| 101 | | | | | | | |
| 102 | | | | | | | |
| 103 | | | | | | | |
| 104 | | | | | | | |
| 105 | | | | | | | |
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| 111 | | | | | | | |
| 112 | | | | | | | |
| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | | | | | | | |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | | | | | | | |
| 119 | | | | | | | |
| 120 | | | | | | | |
| | | Average | | | 5.7 | | |

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1114L05.D
Acq On : 14 Nov 14 9:44
Sample : 10ug/L Vol Std 11-14-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 571072 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 474624 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 289472 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 298019 | 23.41122 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery = 97.497% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 335233 | 23.72975 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery = 94.980% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 956090 | 25.44701 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery = 102.206% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 353450 | 25.62491 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery = 111.877% | | |

| Target Compounds | | | | | Qvalue |
|---|---|---|---|---|---|
| 2) Dichlorodifluoromethane | 1.01 | 85 | 94874 | 9.71053 ppb | 96 |
| 3) Freon 114 | 1.10 | 85 | 93376 | 10.24183 ppb | 99 |
| 4) Chloromethane | 1.14 | 50 | 172374 | 9.76668 ppb | 99 |
| 5) Vinyl chloride | 1.22 | 62 | 132713 | 9.19340 ppb | 99 |
| 6) Bromomethane | 1.45 | 94 | 57720 | 8.87311 ppb | 98 |
| 7) Chloroethane | 1.53 | 64 | 70608 | 10.82022 ppb | 93 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 235847 | 10.14086 ppb | 99 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 165856 | 9.93253 ppb | 100 |
| 10) Acrolein | 2.10 | 56 | 74853 | 113.06398 ppb | 99 |
| 11) Acetone | 2.25 | 43 | 32915 | 9.71820 ppb | 93 |
| 12) Freon-113 | 2.20 | 101 | 95088 | 9.76596 ppb | 95 |
| 13) 1,1-DCE | 2.18 | 61 | 158384 | 10.00563 ppb | 94 |
| 14) t-Butanol | 2.87 | 59 | 74834 | 109.63373 ppb | 98 |
| 15) Acetonitrile | 2.51 | 41 | 155640 | 120.70323 ppb | 96 |
| 16) Methyl Acetate | 2.60 | 43 | 73573 | 9.48198 ppb | 94 |
| 17) Iodomethane | 2.31 | 142 | 23208 | 11.47167 ppb | 89 |
| 18) Acrylonitrile | 2.96 | 52 | 26919 | 9.36360 ppb | 91 |
| 19) Methylene chloride | 2.67 | 84 | 122452 | 10.24584 ppb | 99 |
| 20) Carbon disulfide | 2.36 | 76 | 309771 | 9.35922 ppb | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 237709 | 9.22843 ppb | 97 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 108048 | 10.40024 ppb | 99 |
| 23) Diisopropyl Ether | 3.71 | 45 | 333844 | 10.30288 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 211118 | 10.44532 ppb | 97 |
| 25) Hexane | 3.36 | 57 | 101775 | 10.48414 ppb | 99 |
| 26) Vinyl Acetate | 3.71 | 43 | 72994 | 10.43267 ppb # | 99 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 266025 | 9.93033 ppb | 97 |
| 28) MEK (2-Butanone) | 4.49 | 43 | 38283 | 10.18276 ppb | 100 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 118495 | 9.96939 ppb | 97 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 165083 | 11.14998 ppb | 100 |
| 31) Chloroform | 4.90 | 83 | 205370 | 8.83812 ppb | 100 |
| 32) Bromochloromethane | 4.76 | 128 | 56682 | 9.36347 ppb | 97 |
| 34) 1,1,1-TCA | 5.11 | 97 | 175567 | 10.28020 ppb | 96 |
| 35) Cyclohexane | 5.16 | 41 | 84176 | 10.45152 ppb | 96 |
| 36) 1,1-Dichloropropene | 5.34 | 75 | 131560 | 10.20125 ppb | 98 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 282389 | 11.40461 ppb | 99 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 152527 | 10.30132 ppb | 93 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 242570 | 9.77441 ppb | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 156988 | 10.89966 ppb | 98 |
| 42) Benzene | 5.58 | 78 | 435178 | 10.31185 ppb | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1114L05.D
Acq On : 14 Nov 14 9:44
Sample : 10ug/L Vol Std 11-14-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | Qvalue |
|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 105906 | 9.56164 | ppb | 98 |
| 44) 2-Pentanone | 6.63 | 43 | 842145 | 126.08699 | ppb | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 130381 | 10.60191 | ppb | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 155697 | 9.95690 | ppb | 99 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 129716 | 9.95438 | ppb | 96 |
| 48) Dibromomethane | 6.75 | 93 | 67819 | 9.48347 | ppb | 95 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 2914 | 8.53920 | ppb | 98 |
| 50) MIBK (methyl isobutyl ket | 7.63 | 43 | 72330 | 8.93108 | ppb | 98 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 90888 | 9.88519 | ppb | 99 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 163645 | 9.76266 | ppb | 99 |
| 53) Toluene | 7.78 | 91 | 448792 | 10.46683 | ppb | 98 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 143795 | 9.94992 | ppb | 99 |
| 55) 1,1,2-TCA | 8.21 | 83 | 81355 | 9.79372 | ppb | 99 |
| 56) 2-Hexanone | 8.50 | 43 | 48759 | 9.69272 | ppb | 94 |
| 59) 1,2-EDB | 8.69 | 107 | 89724 | 9.75380 | ppb | 98 |
| 60) Tetrachloroethene | 8.34 | 166 | 120182 | 10.42191 | ppb | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 115763 | 10.37356 | ppb | 98 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 118531 | 9.76658 | ppb | 96 |
| 63) m&p-Xylene | 9.46 | 106 | 360895 | 21.63502 | ppb | 97 |
| 64) o-Xylene | 9.85 | 106 | 165280 | 10.63110 | ppb | 100 |
| 65) Styrene | 9.86 | 104 | 282030 | 9.79469 | ppb | 98 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 158508 | 10.30235 | ppb | 95 |
| 68) Dibromochloromethane | 8.60 | 129 | 112140 | 9.82816 | ppb | 96 |
| 69) Chlorobenzene | 9.21 | 112 | 300169 | 10.08170 | ppb | 97 |
| 70) Ethylbenzene | 9.34 | 91 | 464478 | 10.73056 | ppb | 97 |
| 71) Bromoform | 10.02 | 173 | 75545 | 9.18821 | ppb | 99 |
| 73) Isopropylbenzene | 10.22 | 105 | 401298 | 10.02741 | ppb | 98 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 119212 | 10.29533 | ppb | 99 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 33190 | 9.43875 | ppb | 98 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 26263 | 8.90727 | ppb | 98 |
| 77) Bromobenzene | 10.49 | 156 | 130777 | 9.60078 | ppb | 97 |
| 78) n-Propylbenzene | 10.63 | 91 | 522683 | 10.62442 | ppb | 98 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 434734 | 10.56944 | ppb | 99 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 331608 | 10.43203 | ppb | 98 |
| 81) 1,3,5-Trimethylbenzene | 10.81 | 105 | 407276 | 11.04936 | ppb | 99 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 409016 | 10.96384 | ppb | 99 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 296852 | 10.03994 | ppb | 97 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 378364 | 10.60040 | ppb | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 457070 | 10.66127 | ppb | 97 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 378198 | 10.33172 | ppb | 97 |
| 87) Benzyl Chloride | 11.67 | 91 | 165056 | 10.53880 | ppb | 98 |
| 88) 1,3-DCB | 11.44 | 146 | 251124 | 10.03228 | ppb | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 266716 | 9.73642 | ppb | 97 |
| 90) n-Butylbenzene | 11.91 | 91 | 370750 | 10.44317 | ppb | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 229268 | 9.52204 | ppb | 99 |
| 92) Hexachloroethane | 12.14 | 117 | 92846 | 9.85753 | ppb | 94 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 20337 | 8.81938 | ppb | 96 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 138082 | 9.30633 | ppb | 100 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 96156 | 9.81127 | ppb | 98 |
| 96) Naphthalene | 13.72 | 128 | 132224 | 9.65870 | ppb | 98 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 88256 | 9.37030 | ppb | 99 |

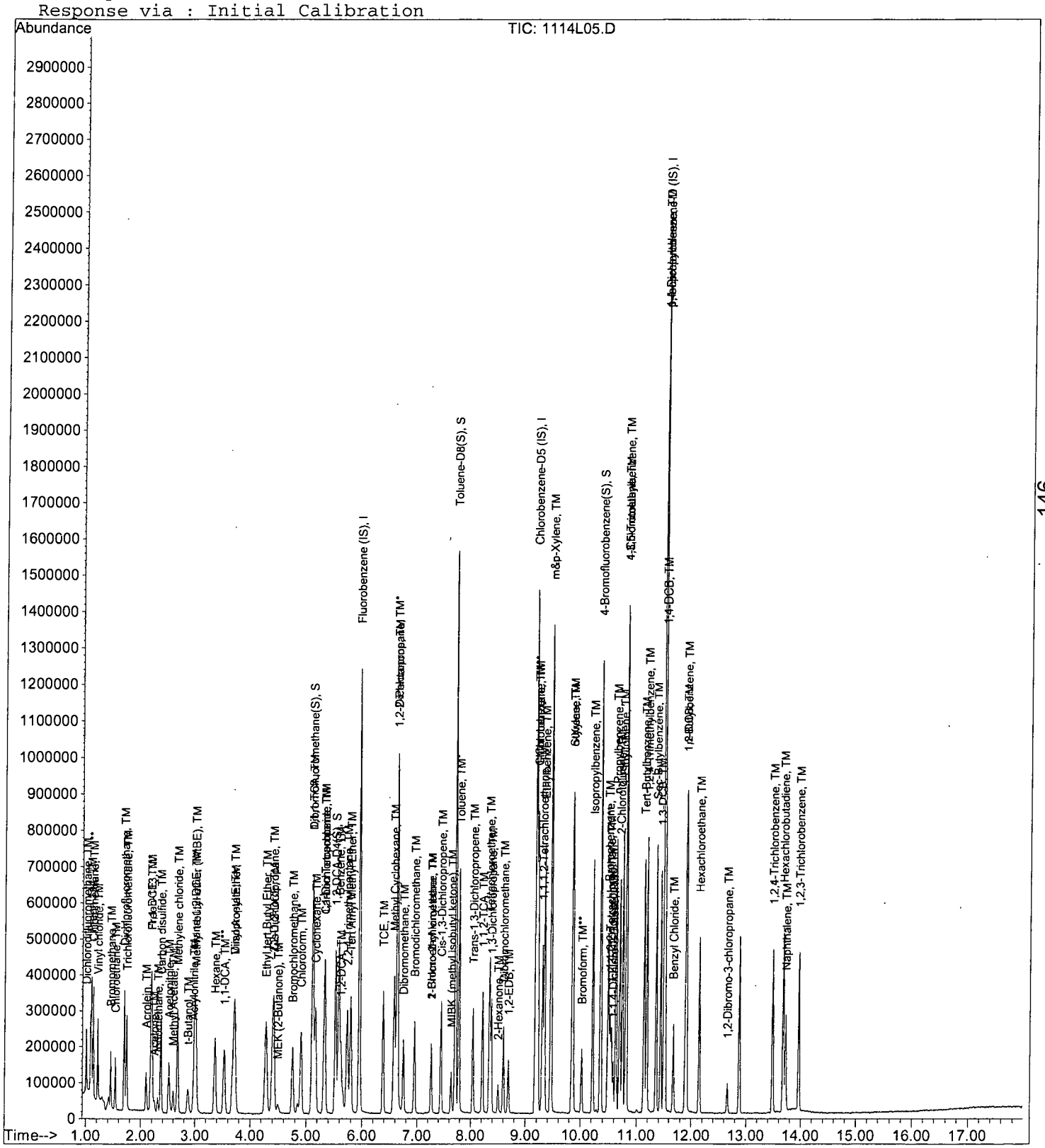
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : M:\LOKI\DATA\141110\1114L05.D  Vial: 4
Acq On : 14 Nov 14 9:44  Operator: DG,SV,RS
Sample : 10ug/L Vol Std 11-14-14  Inst : Loki
Misc : 10mL w/5uL IS&S:10-06-14  Multiplr: 1.00

Quant Time: Nov 18 10:57 2014  Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

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# EPA METHOD 8260C
# Volatile Organic Compounds
# Raw Data

APPL, INC.

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141114W-07201 - 191955**
Batch ID: #86CRE-141114AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | 1,1,1,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.13 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1,1-TRICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1,2,2-TETRACHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.10 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1,2-TRICHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1-DICHLOROETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,1-DICHLOROETHENE | 0.50 U | 1.0 | 0.50 | 0.30 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2,3-TRICHLOROPROPANE | 1.00 U | 2.0 | 1.00 | 0.39 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2,4-TRICHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DIBROMO-3-CHLOROPROPA | 1.00 U | 2.0 | 1.00 | 0.76 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DIBROMOETHANE | 0.50 U | 1.0 | 0.50 | 0.20 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DICHLOROETHANE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,2-DICHLOROPROPANE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,3-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.11 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,3-DICHLOROPROPENE (TOTA | 0.30 U | 1.0 | 0.30 | 0.18 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 1,4-DICHLOROBENZENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 2-BUTANONE | 2.00 U | 10.0 | 2.00 | 0.60 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | 4-METHYL-2-PENTANONE | 5.00 U | 10.0 | 5.00 | 1.90 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | ACETONE | 2.00 U | 10.0 | 2.00 | 0.95 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BENZENE | 0.200 U | 0.20 | 0.200 | 0.060 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BROMODICHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BROMOFORM | 0.30 U | 1.0 | 0.30 | 0.14 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | BROMOMETHANE | 0.50 U | 2.0 | 0.50 | 0.24 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CARBON TETRACHLORIDE | 0.100 U | 0.10 | 0.100 | 0.030 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROBENZENE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROETHANE | 0.50 U | 1.0 | 0.50 | 0.21 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROFORM | 0.20 U | 0.2 | 0.20 | 0.06 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CHLOROMETHANE | 0.50 U | 1.0 | 0.50 | 0.31 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | CIS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | DIBROMOCHLOROMETHANE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | ETHYLBENZENE | 0.50 U | 1.0 | 0.50 | 0.23 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | HEXACHLOROBUTADIENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | METHYL TERT-BUTYL ETHER | 0.52 U | 1.0 | 0.52 | 0.26 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | METHYLENE CHLORIDE | 1.00 U | 5.0 | 1.00 | 0.35 | ug/L | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L11
Instrument: Loki
Sequence: 141110
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/18/14 11:18:37 AM*

# Method Blank
## EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141114W-07201 - 191955**
Batch ID: #86CRE-141114AL

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | STYRENE | 0.50 U | 1.0 | 0.50 | 0.25 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TETRACHLOROETHENE | 0.30 U | 0.3 | 0.30 | 0.08 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TOLUENE | 0.30 U | 1.0 | 0.30 | 0.17 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TRANS-1,2-DICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | TRICHLOROETHENE | 0.30 U | 1.0 | 0.30 | 0.16 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | VINYL CHLORIDE | 0.10 U | 0.1 | 0.10 | 0.03 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | XYLENES (TOTAL) | 0.30 U | 2.0 | 0.30 | 0.19 | ug/L | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: 1,2-DICHLOROET | 103 | 70-120 | | | % | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: 4-BROMOFLUOR | 92.6 | 75-120 | | | % | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: DIBROMOFLUOR | 106 | 85-115 | | | % | 11/14/14 | 11/14/14 |
| BLANK | SURROGATE: TOLUENE-D8 (S) | 97.7 | 85-120 | | | % | 11/14/14 | 11/14/14 |

Quant Method: LCREDW.M
Run #: 1114L11
Instrument: Loki
Sequence: 141110
Initials: SV

*GC SC-Blank-REG MDLs*
*Printed: 11/18/14 11:18:37 AM*

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\141110\1114L11.D
Acq On : 14 Nov 14 12:33
Sample : 141114A BLK-WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 11:00 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 502848 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 441792 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 212544 | 25.00000 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 290775 | 25.94128 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery | = 108.033% | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 328747 | 26.42788 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery | = 105.778% | |
| 58) Toluene-D8(S) | 7.71 | 98 | 852511 | 24.37642 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery | = 97.905% | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 274036 | 21.34390 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery | = 93.186% | |

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

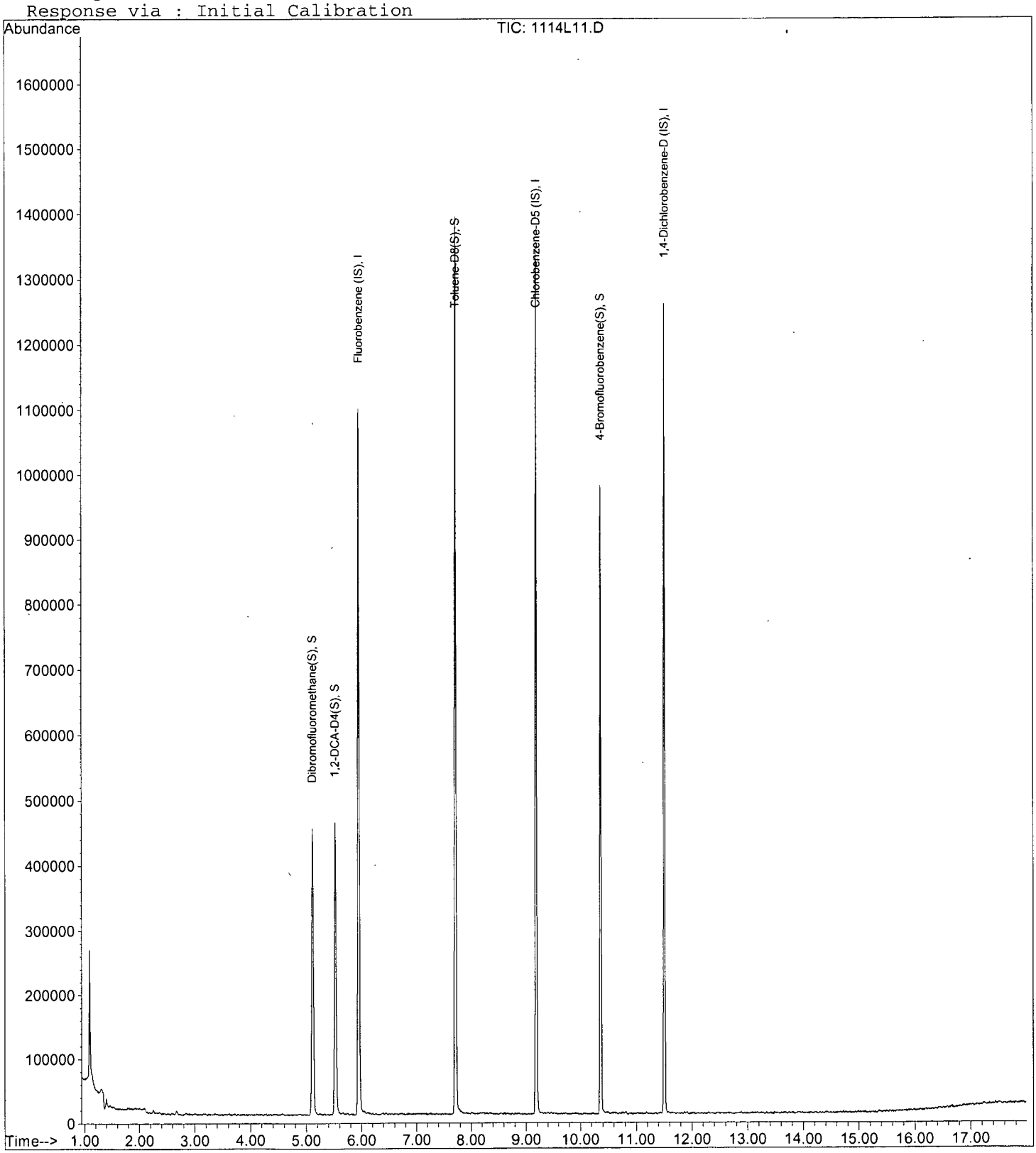
Quantitation Report

Data File : M:\LOKI\DATA\141110\1114L11.D
Acq On : 14 Nov 14 12:33
Sample : 141114A BLK-WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 10
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 11:00 2014 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration



# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141114W-07201 LCS - 191955**
Batch ID: #86CRE-141114AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 10.00 | 9.64 | 96.4 | 80-130 |
| 1,1,1-TRICHLOROETHANE | 10.00 | 9.47 | 94.7 | 65-130 |
| 1,1,2,2-TETRACHLOROETHANE | 10.00 | 10.8 | 108 | 65-130 |
| 1,1,2-TRICHLOROETHANE | 10.00 | 9.24 | 92.4 | 75-125 |
| 1,1-DICHLOROETHANE | 10.00 | 9.63 | 96.3 | 70-135 |
| 1,1-DICHLOROETHENE | 10.00 | 9.54 | 95.4 | 70-130 |
| 1,2,3-TRICHLOROPROPANE | 10.00 | 9.96 | 99.6 | 75-125 |
| 1,2,4-TRICHLOROBENZENE | 10.00 | 9.19 | 91.9 | 65-135 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 10.00 | 8.95 | 89.5 | 50-130 |
| 1,2-DIBROMOETHANE | 10.00 | 9.25 | 92.5 | 80-120 |
| 1,2-DICHLOROBENZENE | 10.00 | 9.60 | 96.0 | 70-120 |
| 1,2-DICHLOROETHANE | 10.00 | 10.3 | 103 | 70-130 |
| 1,2-DICHLOROPROPANE | 10.00 | 10.0 | 100 | 75-125 |
| 1,3-DICHLOROBENZENE | 10.00 | 10.1 | 101 | 75-125 |
| 1,3-DICHLOROPROPENE (TOTAL) | 20.0 | 18.8 | 94.0 | 55-140 |
| 1,4-DICHLOROBENZENE | 10.00 | 9.55 | 95.5 | 75-125 |
| 2-BUTANONE | 10.00 | 9.63 | 96.3 | 30-150 |
| 4-METHYL-2-PENTANONE | 10.00 | 8.83 | 88.3 | 60-135 |
| ACETONE | 10.00 | 10.4 | 104 | 40-140 |
| BENZENE | 10.00 | 9.71 | 97.1 | 80-120 |
| BROMODICHLOROMETHANE | 10.00 | 9.73 | 97.3 | 75-120 |
| BROMOFORM | 10.00 | 8.81 | 88.1 | 70-130 |
| BROMOMETHANE | 10.00 | 8.60 | 86.0 | 30-145 |
| CARBON TETRACHLORIDE | 10.00 | 9.68 | 96.8 | 65-140 |
| CHLOROBENZENE | 10.00 | 9.69 | 96.9 | 80-120 |
| CHLOROETHANE | 10.00 | 10.2 | 102 | 60-135 |
| CHLOROFORM | 10.00 | 8.36 | 83.6 | 65-135 |
| CHLOROMETHANE | 10.00 | 8.77 | 87.7 | 40-125 |
| CIS-1,2-DICHLOROETHENE | 10.00 | 9.49 | 94.9 | 70-125 |
| DIBROMOCHLOROMETHANE | 10.00 | 9.66 | 96.6 | 60-135 |
| ETHYLBENZENE | 10.00 | 10.2 | 102 | 75-125 |

| Primary | SPK |
|---|---|
| Quant Method : | LCREDW.M |
| Extraction Date : | 11/14/14 |
| Analysis Date : | 11/14/14 |
| Instrument : | Loki |
| Run : | 1114L06 |
| Initials : | SV |

Comments:

*Printed: 11/18/14 11:18:40 AM*
*APPL Standard LCS*

# Laboratory Control Spike Recovery
## EPA 8260C WATER

APPL ID: **141114W-07201 LCS - 191955**
Batch ID: #86CRE-141114AL

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| HEXACHLOROBUTADIENE | 10.00 | 9.47 | 94.7 | 50-140 |
| METHYL TERT-BUTYL ETHER | 10.00 | 8.86 | 88.6 | 65-125 |
| METHYLENE CHLORIDE | 10.00 | 9.85 | 98.5 | 55-140 |
| STYRENE | 10.00 | 9.38 | 93.8 | 65-135 |
| TETRACHLOROETHENE | 10.00 | 9.72 | 97.2 | 45-150 |
| TOLUENE | 10.00 | 10.0 | 100 | 75-120 |
| TRANS-1,2-DICHLOROETHENE | 10.00 | 9.52 | 95.2 | 60-140 |
| TRICHLOROETHENE | 10.00 | 9.27 | 92.7 | 70-125 |
| VINYL CHLORIDE | 10.00 | 8.65 | 86.5 | 50-145 |
| XYLENES (TOTAL) | 30.0 | 30.2 | 101 | 75-130 |
| SURROGATE: 1,2-DICHLOROETHANE- | 25.0 | 23.4 | 93.7 | 70-120 |
| SURROGATE: 4-BROMOFLUOROBENZ | 22.9 | 25.8 | 113 | 75-120 |
| SURROGATE: DIBROMOFLUOROMETH | 24.0 | 22.6 | 94.1 | 85-115 |
| SURROGATE: TOLUENE-D8 (S) | 24.9 | 25.5 | 102 | 85-120 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | LCREDW.M |
| Extraction Date : | 11/14/14 |
| Analysis Date : | 11/14/14 |
| Instrument : | Loki |
| Run : | 1114L06 |
| Initials : | SV |

*Printed: 11/18/14 11:18:40 AM*
*APPL Standard LCS*

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1114L06.D
Acq On : 14 Nov 14 10:12
Sample : 141114A LCS-WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) Fluorobenzene (IS) | 5.95 | 96 | 590400 | 25.00000 ppb | 0.00 |
| 57) Chlorobenzene-D5 (IS) | 9.18 | 117 | 483712 | 25.00000 ppb | 0.00 |
| 72) 1,4-Dichlorobenzene-D (IS) | 11.51 | 152 | 287488 | 25.00000 ppb | 0.00 |
| **System Monitoring Compounds** | | | | | |
| 33) Dibromofluoromethane(S) | 5.11 | 111 | 297190 | 22.58182 ppb | 0.00 |
| Spiked Amount 24.012 | | | Recovery = 94.044% | | |
| 38) 1,2-DCA-D4(S) | 5.52 | 65 | 341891 | 23.40877 ppb | 0.00 |
| Spiked Amount 24.984 | | | Recovery = 93.695% | | |
| 58) Toluene-D8(S) | 7.71 | 98 | 975303 | 25.47068 ppb | 0.00 |
| Spiked Amount 24.898 | | | Recovery = 102.303% | | |
| 66) 4-Bromofluorobenzene(S) | 10.36 | 95 | 362385 | 25.77908 ppb | 0.00 |
| Spiked Amount 22.905 | | | Recovery = 112.549% | | |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 1.01 | 85 | 90954 | 9.00455 ppb | 97 |
| 3) Freon 114 | 1.10 | 85 | 88135 | 9.35051 ppb | 99 |
| 4) Chloromethane | 1.14 | 50 | 160311 | 8.77128 ppb | 100 |
| 5) Vinyl chloride | 1.22 | 62 | 129118 | 8.65155 ppb | 98 |
| 6) Bromomethane | 1.45 | 94 | 57854 | 8.60256 ppb | 98 |
| 7) Chloroethane | 1.53 | 64 | 68736 | 10.19901 ppb | 98 |
| 8) Dichlorofluoromethane | 1.70 | 67 | 226240 | 9.40933 ppb | 97 |
| 9) Trichlorofluoromethane | 1.74 | 101 | 158801 | 9.19870 ppb | 97 |
| 10) Acrolein | 2.10 | 56 | 80636 | 117.81173 ppb | 93 |
| 11) Acetone | 2.25 | 43 | 35664 | 10.36363 ppb | 93 |
| 12) Freon-113 | 2.20 | 101 | 92346 | 9.17386 ppb | 92 |
| 13) 1,1-DCE | 2.18 | 61 | 156178 | 9.54328 ppb | 95 |
| 14) t-Butanol | 2.87 | 59 | 83224 | 117.93381 ppb | 97 |
| 15) Acetonitrile | 2.51 | 41 | 158895 | 119.19345 ppb | 98 |
| 16) Methyl Acetate | 2.59 | 43 | 76675 | 9.55826 ppb | 94 |
| 17) Iodomethane | 2.31 | 142 | 23152 | 11.06934 ppb | 91 |
| 18) Acrylonitrile | 2.96 | 52 | 27800 | 9.35348 ppb | 98 |
| 19) Methylene chloride | 2.67 | 84 | 121975 | 9.85133 ppb | 97 |
| 20) Carbon disulfide | 2.36 | 76 | 296656 | 8.66955 ppb | 99 |
| 21) Methyl t-butyl ether (MtBE | 3.02 | 73 | 235986 | 8.86161 ppb | 95 |
| 22) Trans-1,2-DCE | 2.99 | 96 | 102322 | 9.51518 ppb | 92 |
| 23) Diisopropyl Ether | 3.71 | 45 | 328012 | 9.79150 ppb | 97 |
| 24) 1,1-DCA | 3.53 | 63 | 201298 | 9.63342 ppb | 96 |
| 25) Hexane | 3.36 | 57 | 97196 | 9.68466 ppb | 100 |
| 26) Vinyl Acetate | 3.71 | 43 | 72182 | 9.97888 ppb | 100 |
| 27) Ethyl tert Butyl Ether | 4.28 | 59 | 259047 | 9.35329 ppb | 99 |
| 28) MEK (2-Butanone) | 4.50 | 43 | 37539 | 9.63287 ppb | 95 |
| 29) Cis-1,2-DCE | 4.43 | 96 | 116608 | 9.48946 ppb | 98 |
| 30) 2,2-Dichloropropane | 4.40 | 77 | 158007 | 10.32269 ppb | 95 |
| 31) Chloroform | 4.90 | 83 | 200842 | 8.36030 ppb | 98 |
| 32) Bromochloromethane | 4.76 | 128 | 57156 | 9.13268 ppb | 99 |
| 34) 1,1,1-TCA | 5.10 | 97 | 167243 | 9.47220 ppb | 97 |
| 35) Cyclohexane | 5.16 | 41 | 79395 | 9.53518 ppb | 98 |
| 36) 1,1-Dichloropropene | 5.33 | 75 | 129659 | 9.72471 ppb | 98 |
| 37) 2,2,4-Trimethylpentane | 5.73 | 57 | 267290 | 10.44142 ppb | 100 |
| 39) Carbon Tetrachloride | 5.32 | 117 | 148392 | 9.67611 ppb | 94 |
| 40) Tert Amyl Methyl Ether | 5.79 | 73 | 242460 | 9.45014 ppb | 99 |
| 41) 1,2-DCA | 5.62 | 62 | 154625 | 10.34944 ppb | 99 |
| 42) Benzene | 5.58 | 78 | 424178 | 9.70910 ppb | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\141110\1114L06.D
Acq On : 14 Nov 14 10:12
Sample : 141114A LCS-WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

| Compound | R.T. | QIon | Response | Conc | Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 43) TCE | 6.38 | 95 | 106193 | 9.27368 | ppb | | 97 |
| 44) 2-Pentanone | 6.63 | 43 | 872517 | 126.35773 | ppb | | 97 |
| 45) 1,2-Dichloropropane | 6.62 | 63 | 127220 | 10.00621 | ppb | | 99 |
| 46) Bromodichloromethane | 6.95 | 83 | 157224 | 9.72539 | ppb | | 95 |
| 47) Methyl Cyclohexane | 6.58 | 83 | 124190 | 9.21832 | ppb | | 99 |
| 48) Dibromomethane | 6.75 | 93 | 67981 | 9.19492 | ppb | | 95 |
| 49) 2-Chloroethyl vinyl ether | 7.26 | 106 | 3267 | 9.26022 | ppb | | 58 |
| 50) MIBK (methyl isobutyl ket | 7.64 | 43 | 73956 | 8.83290 | ppb | | 100 |
| 51) 1-Bromo-2-chloroethane | 7.26 | 63 | 90152 | 9.48415 | ppb | | 98 |
| 52) Cis-1,3-Dichloropropene | 7.44 | 75 | 159651 | 9.21259 | ppb | | 98 |
| 53) Toluene | 7.78 | 91 | 444878 | 10.03589 | ppb | | 99 |
| 54) Trans-1,3-Dichloropropene | 8.04 | 75 | 143418 | 9.59896 | ppb | | 100 |
| 55) 1,1,2-TCA | 8.21 | 83 | 79330 | 9.23731 | ppb | | 93 |
| 56) 2-Hexanone | 8.51 | 43 | 51509 | 9.90418 | ppb | | 98 |
| 59) 1,2-EDB | 8.69 | 107 | 86677 | 9.24554 | ppb | | 99 |
| 60) Tetrachloroethene | 8.34 | 166 | 114558 | 9.71981 | ppb | | 97 |
| 61) 1-Chlorohexane | 9.22 | 91 | 111212 | 9.77851 | ppb | | 98 |
| 62) 1,1,1,2-Tetrachloroethane | 9.30 | 131 | 119294 | 9.64477 | ppb | | 98 |
| 63) m&p-Xylene | 9.46 | 106 | 343040 | 20.17827 | ppb | | 93 |
| 64) o-Xylene | 9.85 | 106 | 158845 | 10.02523 | ppb | | 96 |
| 65) Styrene | 9.86 | 104 | 273844 | 9.38086 | ppb | | 99 |
| 67) 1,3-Dichloropropane | 8.38 | 76 | 158952 | 10.13711 | ppb | | 97 |
| 68) Dibromochloromethane | 8.60 | 129 | 112298 | 9.65710 | ppb | | 94 |
| 69) Chlorobenzene | 9.21 | 112 | 294144 | 9.69372 | ppb | | 100 |
| 70) Ethylbenzene | 9.34 | 91 | 452122 | 10.24886 | ppb | | 99 |
| 71) Bromoform | 10.02 | 173 | 73810 | 8.80853 | ppb | | 95 |
| 73) Isopropylbenzene | 10.22 | 105 | 388164 | 9.76616 | ppb | | 99 |
| 74) 1,1,2,2-Tetrachloroethane | 10.52 | 83 | 123316 | 10.75362 | ppb | | 98 |
| 75) 1,2,3-Trichloropropane | 10.55 | 110 | 34553 | 9.96029 | ppb | | 95 |
| 76) t-1,4-Dichloro-2-Butene | 10.58 | 53 | 27941 | 9.54177 | ppb | | 95 |
| 77) Bromobenzene | 10.49 | 156 | 130882 | 9.67480 | ppb | | 94 |
| 78) n-Propylbenzene | 10.63 | 91 | 510142 | 10.44106 | ppb | | 97 |
| 79) 4-Ethyltoluene | 10.75 | 105 | 423634 | 10.37065 | ppb | | 98 |
| 80) 2-Chlorotoluene | 10.70 | 91 | 329135 | 10.42569 | ppb | | 98 |
| 81) 1,3,5-Trimethylbenzene | 10.82 | 105 | 390100 | 10.65641 | ppb | | 98 |
| 82) 4-Chlorotoluene | 10.81 | 91 | 402445 | 10.86215 | ppb | | 97 |
| 83) Tert-Butylbenzene | 11.13 | 119 | 290387 | 9.88906 | ppb | | 98 |
| 84) 1,2,4-Trimethylbenzene | 11.18 | 105 | 365679 | 10.31571 | ppb | | 98 |
| 85) Sec-Butylbenzene | 11.35 | 105 | 448432 | 10.53198 | ppb | | 99 |
| 86) p-Isopropyltoluene | 11.50 | 119 | 370087 | 10.17991 | ppb | | 98 |
| 87) Benzyl Chloride | 11.67 | 91 | 165314 | 10.62811 | ppb | | 98 |
| 88) 1,3-DCB | 11.43 | 146 | 250194 | 10.06411 | ppb | | 98 |
| 89) 1,4-DCB | 11.53 | 146 | 259763 | 9.54805 | ppb | | 99 |
| 90) n-Butylbenzene | 11.90 | 91 | 357271 | 10.13295 | ppb | | 99 |
| 91) 1,2-DCB | 11.89 | 146 | 229478 | 9.59654 | ppb | | 97 |
| 92) Hexachloroethane | 12.14 | 117 | 90887 | 9.71613 | ppb | | 96 |
| 93) 1,2-Dibromo-3-chloropropan | 12.66 | 157 | 20500 | 8.95142 | ppb | # | 83 |
| 94) 1,2,4-Trichlorobenzene | 13.49 | 180 | 135445 | 9.19160 | ppb | | 94 |
| 95) Hexachlorobutadiene | 13.68 | 225 | 92220 | 9.47460 | ppb | | 97 |
| 96) Naphthalene | 13.72 | 128 | 134272 | 9.84041 | ppb | | 99 |
| 97) 1,2,3-Trichlorobenzene | 13.96 | 180 | 87192 | 9.32122 | ppb | | 99 |

(#) = qualifier out of range (m) = manual integration

Quantitation Report

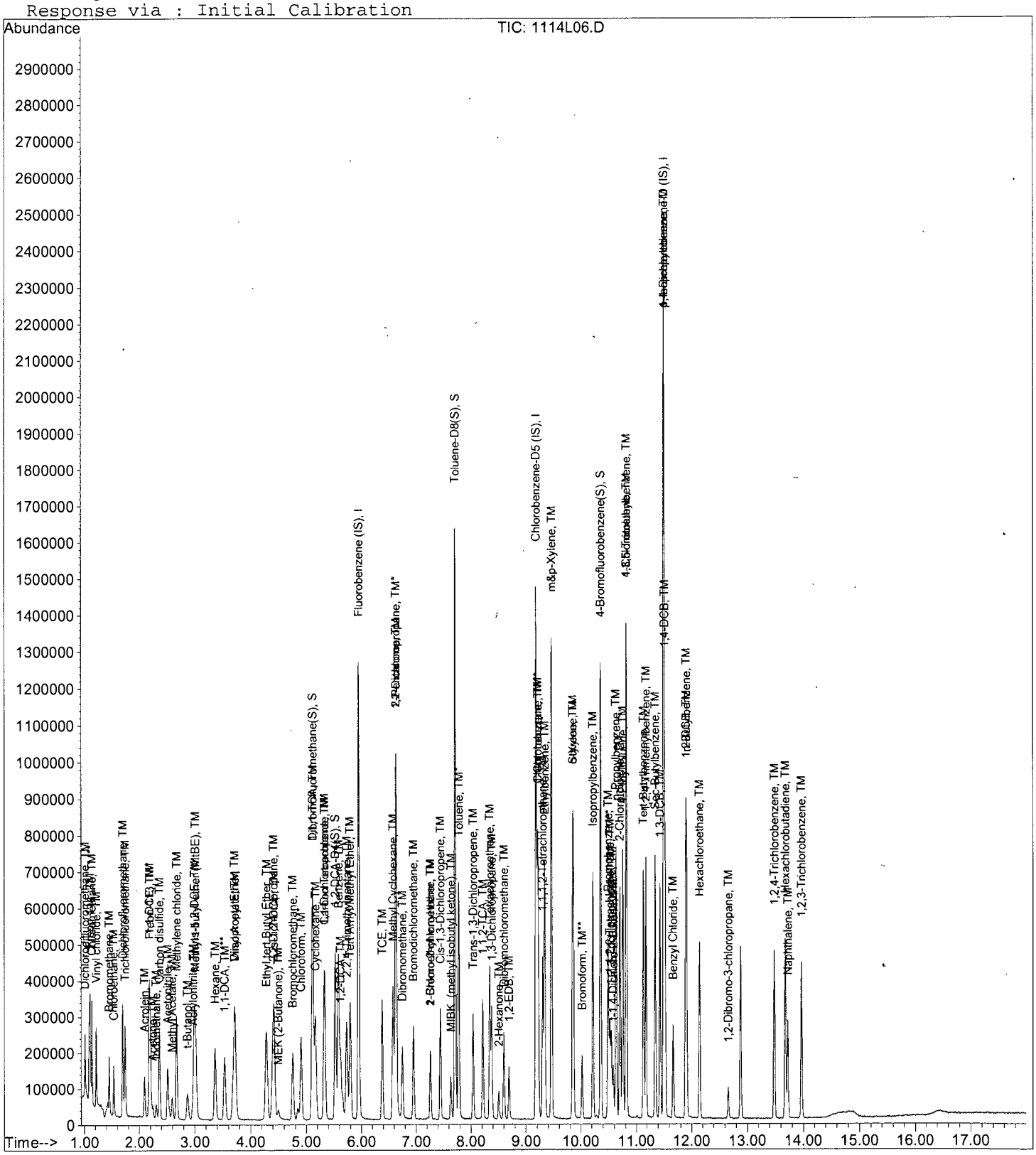
Data File : M:\LOKI\DATA\141110\1114L06.D
Acq On : 14 Nov 14 10:12
Sample : 141114A LCS-WL
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 5
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Nov 18 10:57 2014

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\141104\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Tue Nov 18 10:54:23 2014
Response via : Initial Calibration

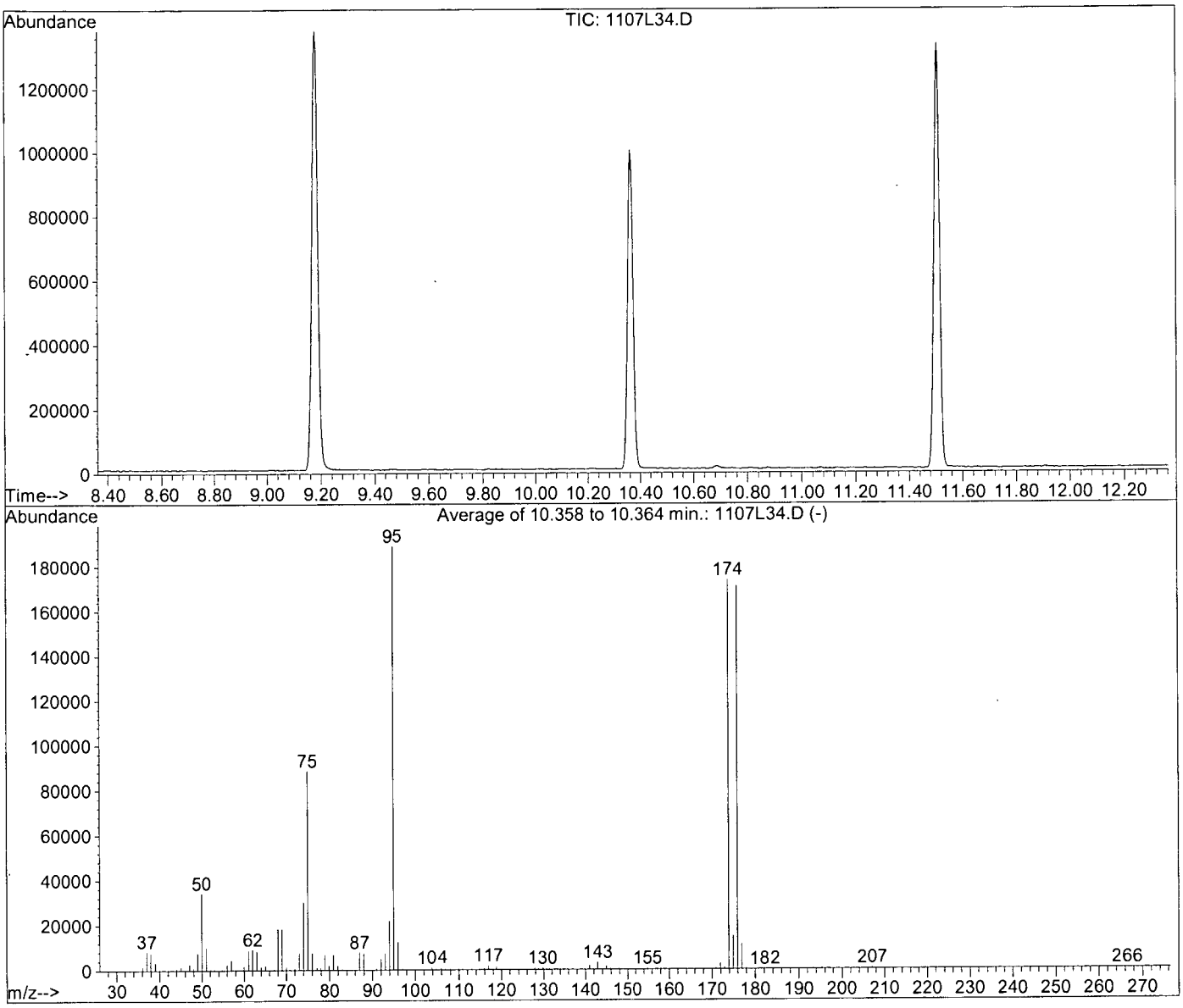


BFB

Data File : M:\LOKI\DATA\141104\1107L34.D
Acq On : 8 Nov 14 2:17
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2ul

Vial: 29
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LCREDW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2916

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 18.1 | 34157 | PASS |
| 75 | 95 | 30 | 60 | 46.8 | 88595 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 189141 | PASS |
| 96 | 95 | 5 | 9 | 6.6 | 12407 | PASS |
| 173 | 174 | 0.00 | 2 | 0.4 | 703 | PASS |
| 174 | 95 | 50 | 100 | 91.9 | 173888 | PASS |
| 175 | 174 | 5 | 9 | 8.5 | 14829 | PASS |
| 176 | 174 | 95 | 101 | 98.3 | 170965 | PASS |
| 177 | 176 | 5 | 9 | 6.6 | 11317 | PASS |

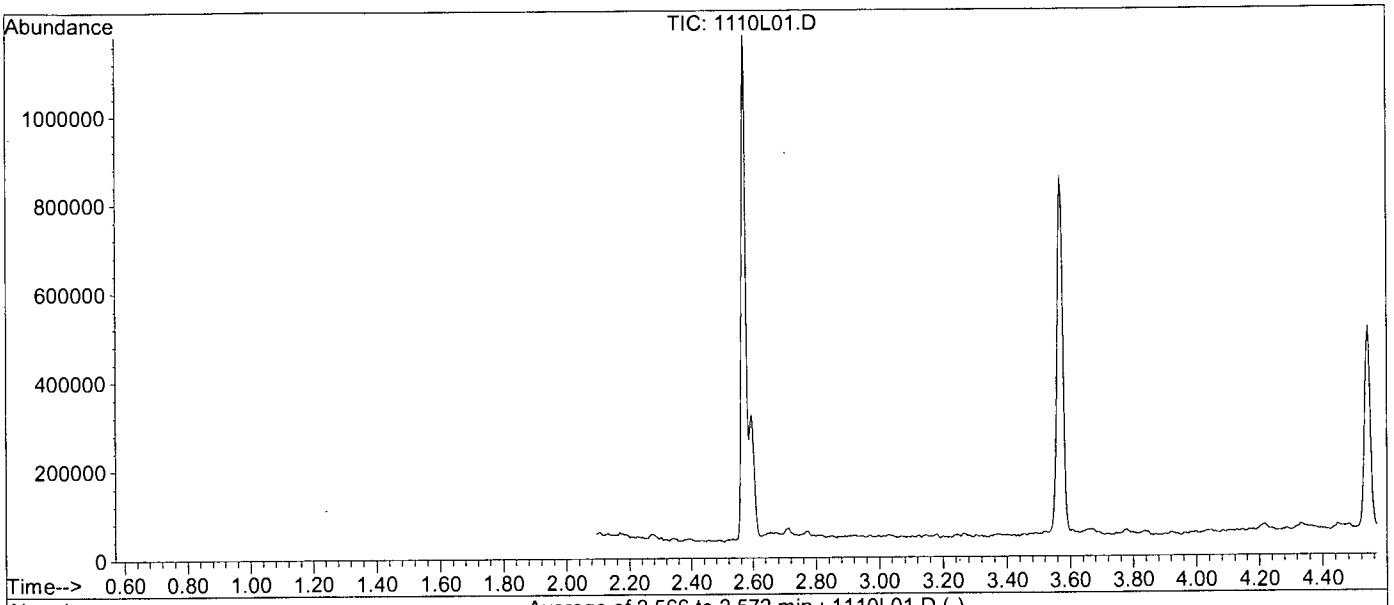
1107L34.D LCREDW.M Fri Dec 05 16:17:55 2014

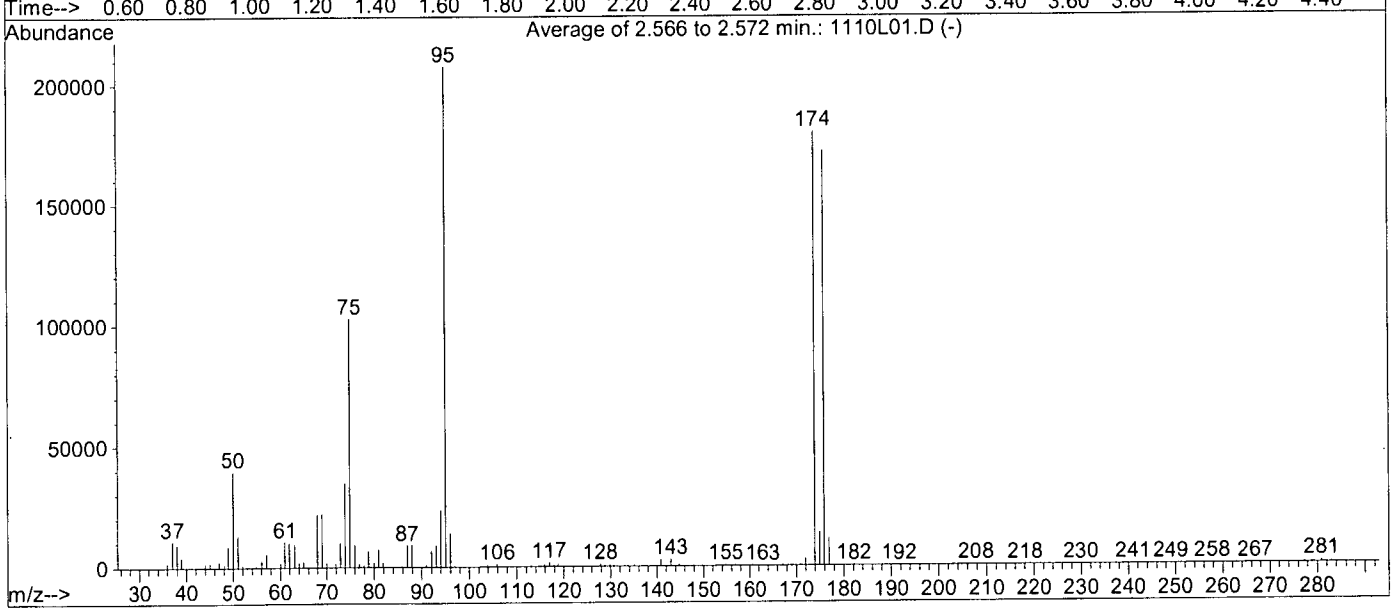
BFB

Data File : M:\LOKI\DATA\141110\1110L01.D
Acq On : 10 Nov 14 16:17
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LCREDW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 148, 149, 150; Background Corrected with Scan 137

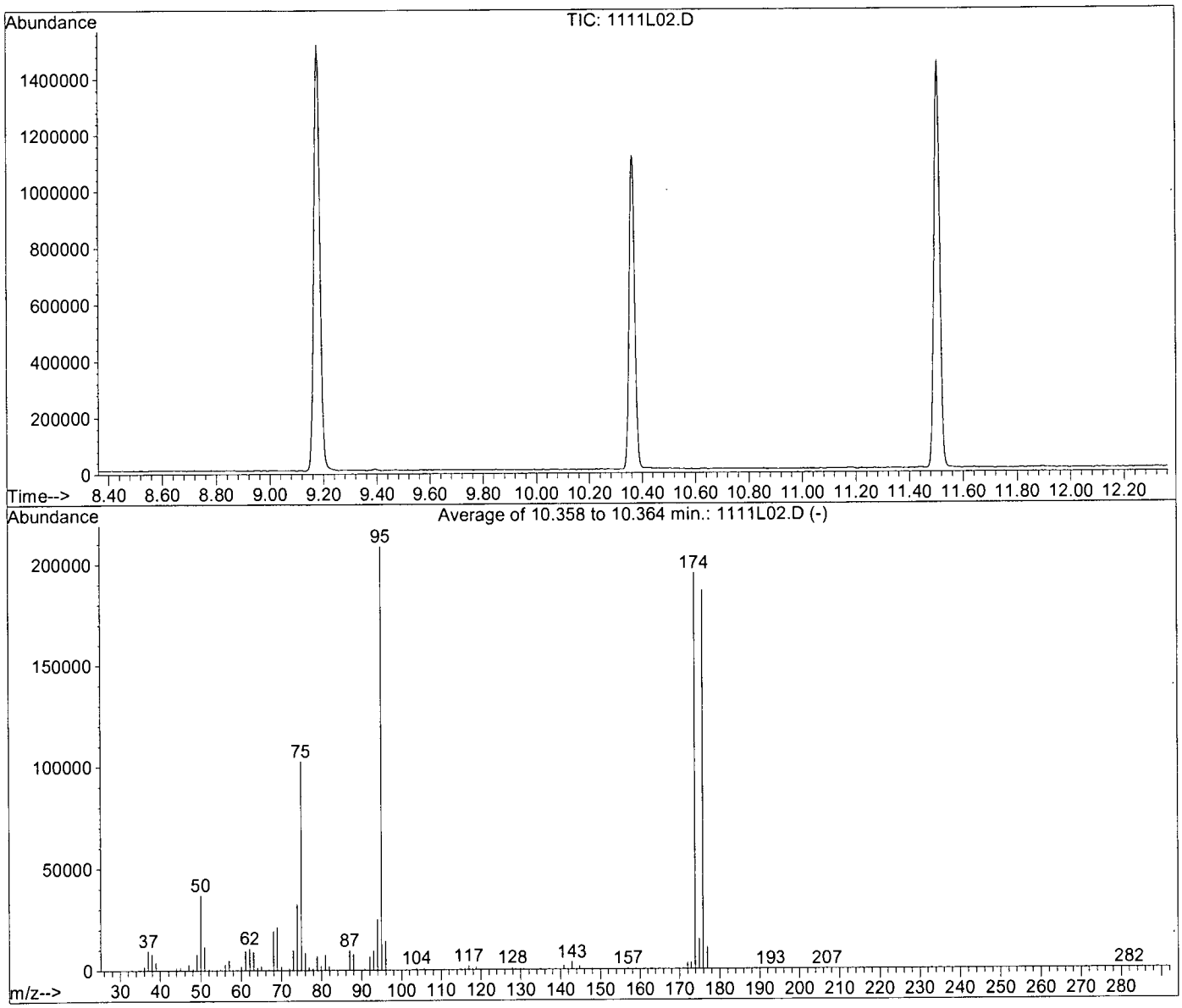
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 19.1 | 39611 | PASS |
| 75 | 95 | 30 | 60 | 49.5 | 102680 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 207616 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 13905 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 86.7 | 180032 | PASS |
| 175 | 174 | 5 | 9 | 7.7 | 13877 | PASS |
| 176 | 174 | 95 | 101 | 95.6 | 172032 | PASS |
| 177 | 176 | 5 | 9 | 6.5 | 11249 | PASS |

BFB

Data File : M:\LOKI\DATA\141110\1111L02.D
Acq On : 11 Nov 14 12:31
Sample : 25ug/mL BFB Std 09-30-14
Misc : 10mL w/5uL IS&S:10-06-14

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LCREDW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2915

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 17.6 | 36824 | PASS |
| 75 | 95 | 30 | 60 | 49.1 | 102552 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 208683 | PASS |
| 96 | 95 | 5 | 9 | 6.9 | 14397 | PASS |
| 173 | 174 | 0.00 | 2 | 1.7 | 3234 | PASS |
| 174 | 95 | 50 | 100 | 93.5 | 195072 | PASS |
| 175 | 174 | 5 | 9 | 7.6 | 14808 | PASS |
| 176 | 174 | 95 | 101 | 95.6 | 186560 | PASS |
| 177 | 176 | 5 | 9 | 5.7 | 10680 | PASS |

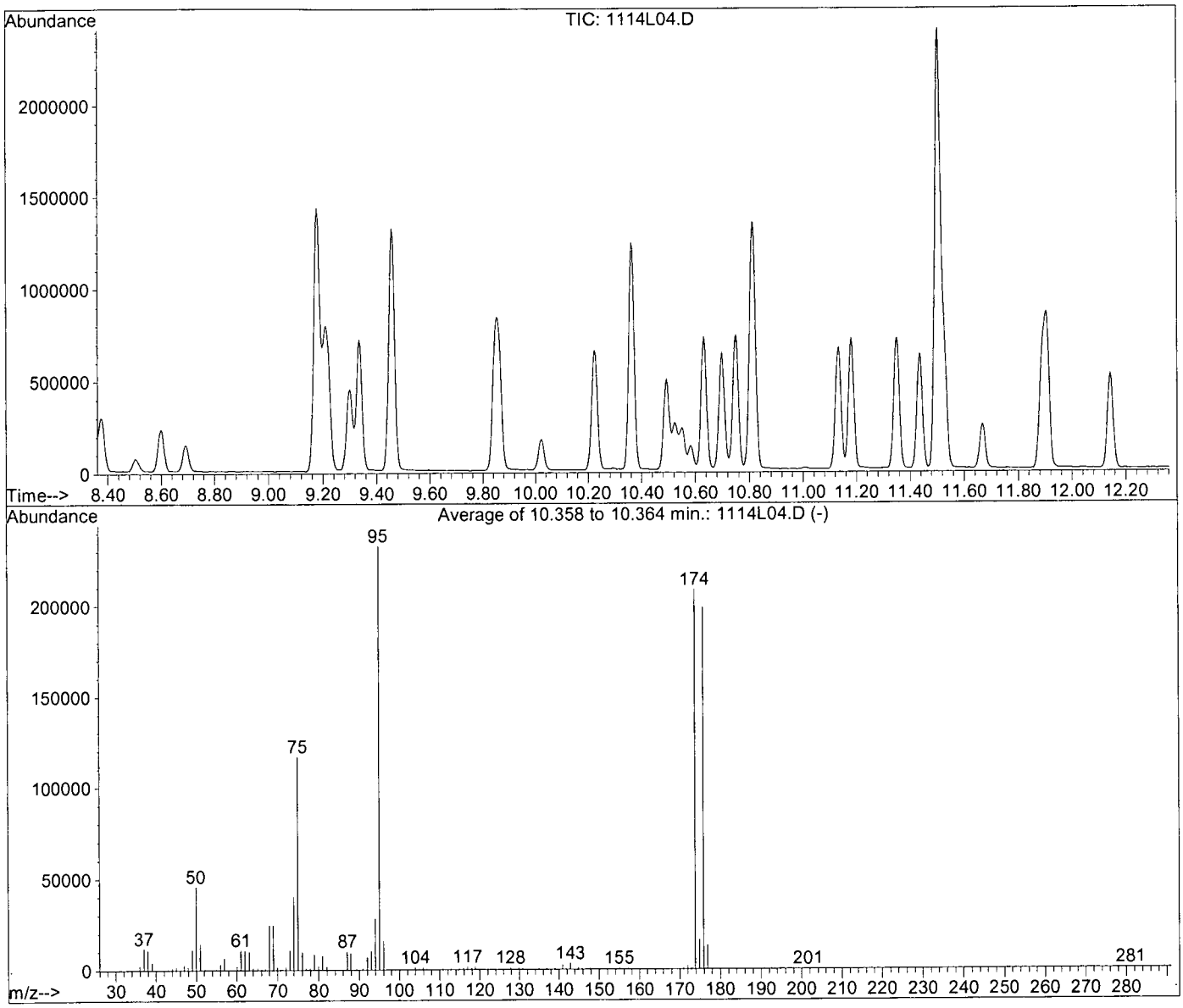
1111L02.D LCREDW.M Fri Dec 05 16:29:15 2014

BFB

Data File : M:\LOKI\DATA\141110\1114L04.D
Acq On : 14 Nov 14 9:16
Sample : 25ug/mL BFB Std 09-30-14
Misc : 2ul

Vial: 3
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\141110\LCREDW.M (RTE Integrator)
Title : METHOD 8260B




AutoFind: Scans 2929, 2930, 2931; Background Corrected with Scan 2916

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 19.6 | 45617 | PASS |
| 75 | 95 | 30 | 60 | 50.2 | 116944 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 232939 | PASS |
| 96 | 95 | 5 | 9 | 6.7 | 15648 | PASS |
| 173 | 174 | 0.00 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 89.6 | 208683 | PASS |
| 175 | 174 | 5 | 9 | 7.7 | 15987 | PASS |
| 176 | 174 | 95 | 101 | 95.2 | 198677 | PASS |
| 177 | 176 | 5 | 9 | 6.5 | 12851 | PASS |

4/25/14
RS

| 04/25/14Y | | | | | | |
|---|---|---|---|---|---|---|
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P | | | | | | |
| Exp:05/14/14 | | | Conc. | | Date | Exp. |
| Supplier | ID # | | ug/ml | Lot # | Code | Date |
| O2SI | 120166-01 | Volatile Mix 4-3 | 2000 | 207774-33198 | 04/14/14B | 04/23/15 |
| O2SI | 020229-09 | Acrolein | 10000 | 225983-33480 | 04/14/14C | 05/17/14 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00745 | 04/13/14 | 07/09/18 |

4/25/14
RS

| 04/25/14Z | | | | | | |
|---|---|---|---|---|---|---|
| 50ug/ml VOC Std#5 | | | | | | |
| Exp:05/14/14 | | | | | | |
| | | | Conc. | | Date | Exp. |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940-33541 | 04/25/14I | 01/24/17 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33214 | 04/25/14J | 12/16/15 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00745 | 04/13/14 | 07/09/18 |
| 04/25/14AA | | | | | | |
| 50ug/ml VOC Std#6 | | | | | | |
| Exp:05/14/14 | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date |
| O2SI | 120023-03-SS | VOC'S 54 COMP. | 2000 | 208329-32739 | 04/25/14K | 05/02/15 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32958 | 04/25/14L | 01/23/15 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 222674-33301 | 04/25/14M | 05/19/14 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-32311 | 04/25/14N | 03/12/15 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33530 | 04/25/14O | 04/07/16 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00745 | 04/13/14 | 07/09/18 |
| 04/25/14AB | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P | | | | | | |
| Exp:05/14/14 | | | Conc. | | Date | Exp. |
| Supplier | ID # | | ug/ml | Lot # | Code | Date |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS) | 2000 | 189667-33302 | 04/02/14B | 05/18/15 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 225984-33482 | 04/14/14E | 05/17/14 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00745 | 04/13/14 | 07/09/18 |

A-

4/28/14
RS

4-Bromofluorobenzene
Solution, 2,500 mg/L, 1 ml
020135-03.
Lot# 195506 Storage ≤ -10 Degrees C Expiry 9/15/15
Solv: P/T Methanol
For R&D only, not human consump. Made in the USA.

4-Bromofluorobenzene
Lot #: 195506 - 31423
Rec: 9/20/12 MFR exp. 9/15/15

RS

| 04-28-14B | | | | | | |
|---|---|---|---|---|---|---|
| 25ug/ml BFB STD | | | Conc. | | Date | EXP: |
| EXP:05/28/14 | | | ug/ml | Lot# | CODE | Date |
| O2SI | 020135-03 | 4-Bromofluorobenzene | 2500 | 176675-31423 | 04-28-14A | 08/02/14 |
| J&T Baker | | Purge & Trap MeOH | | 49909-00745 | 04/13/14 | 07/09/18 |

4/28/14
RS

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOK! | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 04/29/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 04-25-14T | 04-25-14U | 04-25-14V | 04-25-14X | 04-25-14P | 04-25-14R | 04-25-14Q | 04-25-14S | 04-25-14W | 04-25-14Y | w/P&T H2O |
| Date/code | µg/L | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | Exp:05-25-14 | mL |
| 04-28-14C | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 3 | 50 |
| 04-28-14D | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 04-28-14E | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 04-28-14F | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 04-28-14G | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 04-28-14H | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 04-28-14I | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 04-28-14J | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

9/26/14 RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 09/26/14U | | | | | | | |
| 50ug/ml VOC Std#5 | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940-33548 | 09/15/14F | 04/15/17 | 50 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33222 | 09/26/14F | 12/16/15 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1900 |
| 09/26/14V | | | | | | | |
| 50ug/ml VOC Std#6 | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120023-03-SS | VOC'S 54 COMP. | 2000 | 208329-32741 | 09/26/14G | 05/02/15 | 50 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32960 | 09/26/14H | 01/23/15 | 50 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 232116-33844 | 09/15/14G | 10/08/14 | 50 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-33678 | 09/26/14I | 03/12/15 | 100 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33531 | 09/26/14J | 04/07/16 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1650 |
| 09/26/14W | | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P | | | | | | | |
| Exp:10/26/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS) | 2000 | 189667-33305 | 09/03/14K | 05/18/15 | 250 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 234095-33910 | 09/03/14L | 08/25/14 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1700 |

9/29/14 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI

| Exp: Date: | 09/30/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp.10-26-14 | Exp:10-26-14 | Exp 10-26-14 | Exp:10-26-14 | Exp.10-26-14 | mL |
| 09-29-14A | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 09-29-14B | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 09-29-14C | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 09-29-14D | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 09-29-14E | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 09-29-14F | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 09-29-14G | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 09-29-14H | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 09-29-14I | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

9/29/14 RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp: Date: | 09/30/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp 10-26-14 | Exp.10-26-14 | Exp:10-26-14 | Exp 10-26-14 | Exp.10-26-14 | Exp 10-26-14 | Exp.10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | mL |
| 09-29-14J | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 09-29-14K | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 09-29-14L | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 09-29-14M | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 09-29-14N | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 09-29-14O | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 09-29-14P | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 09-29-14Q | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

9/30/14 RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 09/30/14A | | | | | | | |
| 25ug/ml BFB STD | | | Conc. | | Date | EXP: | |
| EXP:10/30/14 | | | ug/ml | Lot# | CODE | Date | ul |
| O2SI | 020135-03 | 4-Bromofluorobenzene | 2500 | 195506-31423 | 04-28-14A | 09/15/15 | 20 |
| J&T Baker | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1980 |

9/30/14 RS

Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR

| Exp: Date: | 10/01/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp 10-26-14 | Exp 10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp 10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | mL |
| 09-30-14B | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 09-30-14C | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 09-30-14D | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 09-30-14E | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 09-30-14F | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 09-30-14G | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 09-30-14H | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 09-30-14I | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

10/03/14
RS

| Volatile Standard Curve Preparation for 10mL Purge (524 water)-THOR | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Exp Date: | 10/04/14 | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #12 | Vol Std #7 | Vol Std #8 | Vol Std #2 | TAPD | Final Vol |
| | Conc. | 09-26-14O | 09-26-14Q | 09-26-14K | 09-26-14M | 09-26-14N | 09-26-14T | w/P&T H2O |
| Date/code | µg/L | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp.10-26-14 | mL |
| 10-03-14A | 0.2 | 2 | 2 | n/a | n/a | n/a | 2 | 50 |
| 10-03-14B | 0.5 | 5 | 5 | n/a | n/a | n/a | 5 | 50 |
| 10-03-14C | 1 | 10 | 10 | n/a | n/a | n/a | 10 | 50 |
| 10-03-14D | 5 | n/a | n/a | 5 | 5 | 5 | 20 | 50 |
| 10-03-14E | 10 | n/a | n/a | 10 | 10 | 10 | 25 | 50 |
| 10-03-14F | 40 | n/a | n/a | 40 | 40 | 40 | 35 | 50 |
| 10-03-14G | 100 | n/a | n/a | 100 | 100 | 100 | 40 | 50 |

Didn't Run Instrument was down. RS 10/06

A-

10/06/14
RS

8260 Internal Standard Solution, 2,000 mg/L, 1 ml
120004-02
Lot # 202974 Storage ≤-10 Degrees C Expiry 1/30/15
Solv: PT Methanol
R&D only, not human consump. Made in the USA
Supplies

8260 Internal Standard
Lot #: 202974 - 32757
Rec: 7/25/13 MFR exp. 1/30/15

RS

B-

10/06/14
RS

Method 8260B Surrogate Solution, 2,000 mg/L, 1 ml
120002-01
Lot # 185763 Storage ≤-10 Degrees C Expiry 2/19/15
Solv: PT Methanol
R&D only, not human consump. Made in the USA

Method 8260B Surrogate
Lot #: 185763 - 33556
Rec: 4/15/14 MFR exp. 2/19/15

RS

10/06/14
RS

| LOKI | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10-06-14C | | | | | | | |
| 50ug/ml 8260 Internal Standard | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | |
| O2SI | 120004-02 | Internal Standard Mix | 2000 | 195507-31436 | 10-06-14A | 09/10/15 | |
| J.T Baker | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 02/19/18 | 14 |
| | | | | | | | |
| 10-06-14D | | | | | | | |
| 50ug/ml 8260B Surrogate-LOKI | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | |
| O2SI | 120002-01 | Surrogate Standards | 2000 | 185763-31770 | 10-06-14B | 02/19/15 | 3 |
| J.T Baker | | Purge & Trap MeOH | | 49909-00766 | 10/03/14 | 02/19/18 | 14 |

10/06/14
RS

| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 10/07/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vo |
| | Conc. | 09-26-14O | 09-26-14P | 09-26-14Q | 09-26-14S | 09-26-14K | 09-26-14M | 09-26-14L | 09-26-14N | 09-26-14R | 09-26-14T | w/P&T H2 |
| Date/code | µg/L | Exp:10-26-14 | Exp:10-26-14 | Exp 10-26-14 | Exp 10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp:10-26-14 | Exp 10-26-14 | Exp 10-26-14 | mL |
| 10-06-14E | 0.1 | 1 | 1 | 1 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 50 |
| 10-06-14F | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 10-06-14G | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 10-06-14H | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 10-06-14I | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 10-06-14J | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 10-06-14K | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 10-06-14L | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 10-06-14M | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

9/26/14 RS D-

2-Chloroethyl Vinyl Ether Solution, 2,000 mg/L, 2 x 0.6 mL
020145-02-02
Lot # 229586 Storage ≤-10 Degrees Expiry 3/Jun/2017
Solv: P/T Methanol

2-Chloroethyl vinyl ether
Lot #: 229586 - 33689
Rec: 6/3/14 MFR exp. 6/3/17

RS

9/26/14 RS E-

Ketones Solution, 2,000 mg/L, 1 ml
121020-05
Lot # 232379 Storage ≤-10 °C Expiry 14/Jul/2015
Solv: P/T MeOH:Water 9:1

Ketones
Lot #: 232379 - 33883
Rec: 7/22/14 MFR exp. 7/14/15

RS

9/26/14 RS F-

2-Chloroethyl Vinyl Ether Solution (Second Source), 2,000 mg/L, 2 X 0.6 ml
020145-02-02-SS
Lot # 219465 Storage ≤-10 Degrees C Expiry 12/16/15
Solv: P/T Methanol

2-Chloroethyl vinyl ether (SS)
Lot #: 219465 - 33222
Rec: 12/19/13 MFR exp. 12/16/15

RS

9/26/14 RS G-

8260 VOC Liquids Solution (Second Source), 2,000 mg/L, 1 ml
120023-03-SS
Lot # 208329 Storage ≤-10 Degrees C Expiry 5/2/15
Solv: P/T Methanol

8260 VOC Liquids (SS)
Lot #: 208329 - 32741
Rec: 7/25/13 MFR exp. 5/2/15

RS

9/26/14 RS H-

Custom 8260 Solution, Second Source, 2,000 mg/L, 1 ml
120296-01-SS
Lot # 212199 Storage ≤-10 Degrees C Expiry 1/23/15
Solv: P/T Methanol

Custom 8260 Solution, 2000mg/L (SS)
Lot #: 212199 - 32960
Rec: 10/15/13 MFR exp. 1/23/15

RS

9/26/14 RS I-

n-Hexane Solution (Second Source), 1,000 mg/L, 1 ml
020428-02-SS
Lot # 205230 Storage Expiry 3/12/15
Solv: P/T Methanol

n-Hexane (SS) 1000mg/L
Lot #: 205230 - 33678
Rec: 6/3/14 MFR exp. 3/12/15

RS

Hexachloroethane (Second Source) Solution, 1000 mg/L, 1 ml
020049-02-SS
Lot # | Storage | Expiry
226063 ≤ -10 Degrees C | 7/Apr/2016
Solv: P/T Methanol

Hexachloroethane (SS)
Lot #: 226063 - 33532
Rec: 4/15/14 MFR exp. 4/7/16

9/26/14 RS

J-

RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **09/26/14K** | | | | | | | |
| **50ug/ml Vol Work Std #7** | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 120016-03 | Gas Mix | 2000 | 231710-33813 | 09/26/14A | 03/30/17 | 100 |
| 02SI | 020049-02 | HEXACHLOROETHANE | 1000 | 234821-33990 | 09/03/14B | 08/26/16 | 200 |
| 02SI | 020228-02 | Benzyl Chloride | 1000 | 200704-33538 | 09/15/13B | 12/10/14 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 3500 |
| **09/26/14L** | | | | | | | |
| **50ug/ml Vol Work Std #1** | | | | | | | |
| Exp:10/26/14 | | | | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 020145-02-02 | 2-CEVE | 2000 | 229586-33689 | 09/26/14D | 06/03/17 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 1950 |
| **09/26/14M** | | | | | | | |
| **50ug/ml Vol Work Std #8** | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 122039-02 | Volatile Mix, 20-29 | 2000 | 210086-32534 | 09/26/14B | 06/06/15 | 100 |
| 02SI | 120023-03 | VOC'S-54 COMP | 2000 | 216122-32920 | 08/12/14G | 10/11/15 | 100 |
| 02SI | 020232-02 | Vinyl Acetate | 2000 | 229682-33659 | 09/03/14E | 08/28/14 | 100 |
| 02SI | 020620-02 | n-Hexane | 1000 | 195505-33674 | 09/26/13C | 09/09/17 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 3500 |
| **09/26/14N** | | | | | | | |
| **50ug/ml Vol Work Std #2** | | | | | | | |
| Exp:10/26/14 | | | | | | | |
| Supplier | ID # | ID | ug/ml | | | | |
| 02SI | 121020-05 | HSL'S-Ketone Solution | 2000 | 232379-33883 | 09/26/14E | 10/10/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 3900 |
| | | **09/26/14O** | | | | | |
| | | **5ug/ml Vol Work Std #9** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #7 | | **09/26/14K** | 10/26/14 | 200 | |
| | | 50ug/ml Vol Work Std #8 | | **09/26/14M** | 10/26/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1600 | |
| | | **09/26/14P** | | | | | |
| | | **5ug/ml Vol Work Std #10** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #1 | | **09/26/14L** | 10/26/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1800 | |
| | | **09/26/14Q** | | | | | |
| | | **5ug/ml Vol Work Std #12** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #2 | | **09/26/14N** | 10/26/14 | 200 | |
| | | J&T Brand | | 09/25/14 | 07/09/18 | 1800 | |
| **09/26/14R** | | | | | | | |
| **50ug/ml 8260 Surrogate** | | | Conc. | | Date | Exp. | |
| Exp:10/26/14 | | | ug/ml | Lot # | Code | Date | uL |
| 02SI | 120002-01 | 8260B Surr Solution | 2000 | 229269-33845 | 09/03/14F | 02/19/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 3900 |
| **09/26/14S** | | | | | | | |
| **5.0ug/ml 8260 Surrogate** | | | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml 8260 Surrogate | | **09/26/14R** | 10/26/14 | 200 | |
| J&T Brand | | Purge & Trap MeOH | | 09/25/14 | 07/09/18 | 1800 | |
| **09/26/14T** | | | | | | | |
| **250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P** | | | | | | | |
| Exp:10/26/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| 02SI | 120166-01 | Volatile Mix 4-3 | 2000 | 229587-33995 | 09/15/14D | 05/29/16 | 500 |
| 02SI | 020229-09 | Acrolein | 10000 | 235659-34043 | 09/15/14E | 10/20/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00765 | 09/25/14 | 07/09/18 | 3400 |

9/26/14 RS

9/15/14 RS B-

Benzyl Chloride Solution, 1000 mg/L, 1 ml
020228-02

| Lot # | Storage | Expiry |
|---|---|---|
| 200704 | ≤ -10 Degrees C | 12/10/14 |

Solv: P/T Methanol

Benzyl Chloride
Lot #: 200704 - 33538
Rec: 4/15/14 MFR exp. 12/10/14

RS

9/15/14 RS C-

2-Chloroethyl Vinyl Ether Solution, 2,000 mg/L, 2 x 0.6 mL
020145-02-02

| Lot # | Storage | Expiry |
|---|---|---|
| 229586 | ≤ -10 Degrees | 3/Jun/2017 |

Solv: P/T Methanol

2-Chloroethyl vinyl ether
Lot #: 229586 - 33688
Rec: 6/3/14 MFR exp. 6/3/17

RS

9/15/14 RS D-

VOC Mix 4-3, 2,000 mg/L, 1 mL
120166-01

| Lot # | Storage | Expiry |
|---|---|---|
| 229587 | ≤ 6 Degrees C | 29/May/2016 |

Solv: P/T Methanol

VOC Mix 4-3, 2000mg/L
Lot #: 229587 - 33995
Rec: 8/27/14 MFR exp. 5/29/16

RS

9/15/14 RS E-

Acrolein Solution, 10,000 mg/L, 2 x 0.6 mL
024229-09-02

| Lot # | Storage | Expiry |
|---|---|---|
| 235659 | ≤ 6 °C | 20/Oct/2014 |

Solv: Water, HPLC Grade

Acrolein
Lot #: 235659 - 34043
Rec: 9/10/14 MFR exp. 10/20/14

RS

9/15/14 RS F-

Method 8260 Gases (Second Source), 2,000 mg/L, 2 X 0.6 ml
120016-83-SS

| Lot # | Storage | Expiry |
|---|---|---|
| 220940 | ≤ -10 Degrees C | 1/24/17 |

Solv: P/T Methanol

Method 8260 Gases (SS)
Lot #: 220940 - 33548
Rec: 4/15/14 MFR exp. 1/24/17

RS

9/15/14 RS G-

Vinyl Acetate Solution (Second Source), 2,000 mg/L, 1ml
020232-02-SS

| Lot # | Storage | Expiry |
|---|---|---|
| 232116 | ≤ -10 °C | 8/Oct/2014 |

Solv: P/T Methanol

Vinyl Acetate (SS)
Lot #: 232116 - 33844
Rec: 7/15/14 MFR exp. 10/8/14

RS

11/10/14
RS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **11/10/14D** | | | | | | | |
| **50ug/ml Vol Work Std #7** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 120016-03 | Gas Mix | 2000 | 231710-33816 | 11/10/14A | 03/30/17 | 100 |
| 02SI | 020049-02 | HEXACHLOROETHANE | 1000 | 234821-33991 | 10/28/14B | 08/26/16 | 200 |
| 02SI | 020228-02 | Benzyl Chloride | 1000 | 227320-33830 | 10/28/13C | 04/28/16 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| **11/10/14E** | | | | | | | |
| **50ug/ml Vol Work Std #1** | | | | | | | |
| Exp:12/10/14 | | | | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 020145-02-02 | 2-CEVE | 2000 | 229586-33691 | 10/28/14D | 06/03/17 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1950 |
| **11/10/14F** | | | | | | | |
| **50ug/ml Vol Work Std #8** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| 02SI | 122039-02 | Volatile Mix, 20-29 | 2000 | 212173-32728 | 10/28/14E | 07/22/15 | 100 |
| 02SI | 120023-03 | VOC'S-54 COMP | 2000 | 216122-32922 | 10/28/14F | 10/11/15 | 100 |
| 02SI | 020232-02 | Vinyl Acetate | 2000 | 229682-33660 | 10/28/14G | 08/28/14 | 100 |
| 02SI | 020620-02 | n-Hexane | 1000 | 195505-33675 | 11/10/13B | 09/09/17 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| **11/10/14G** | | | | | | | |
| **50ug/ml Vol Work Std #2** | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| Supplier | ID # | ID | ug/ml | | | | |
| 02SI | 121020-05 | HSL'S-Ketone Solution | 2000 | 232379-33874 | 10/20/14B | 07/14/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| | | **11/10/14H** | | | | | |
| | | **5ug/ml Vol Work Std #9** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #7 | | **11/10/14D** | 11/28/14 | 200 | |
| | | 50ug/ml Vol Work Std #8 | | **11/10/14F** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1600 | |
| | | **11/10/14I** | | | | | |
| | | **5ug/ml Vol Work Std #10** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #1 | | **11/10/14E** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |
| | | **11/10/14J** | | | | | |
| | | **5ug/ml Vol Work Std #12** | | | | | |
| | | **SOURCES** | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml Vol Work Std #2 | | **11/10/14G** | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |
| **11/10/14K** | | | | | | | |
| **50ug/ml 8260 Surrogate** | | | Conc. | | Date | Exp. | |
| Exp:12/10/14 | | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120002-01 | 8260B Surr Solution | 2000 | 185763-33557 | 10/28/14H | 02/19/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| **11/10/14L** | | | | | | | |
| **5.0ug/ml 8260 Surrogate** | | | **Lot** | **APPL Code** | **APPL Exp Date** | ul | |
| | | 50ug/ml 8260 Surrogate | | **11/10/14K** | 11/28/14 | 200 | |
| J&T Brand | | Purge & Trap MeOH | | 10/15/14 | 07/09/18 | 1800 | |
| **11/10/14M** | | | | | | | |
| **250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P** | | | | | | | |
| Exp:12/10/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| 02SI | 120166-01 | Volatile Mix 4-3 | 2000 | 229254-33997 | 11/10/14C | 05/29/16 | 500 |
| 02SI | 020229-09 | Acrolein | 10000 | 237721-34134 | 10/20/14D | 11/18/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3400 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11/10/14N | | | | | | | |
| 50ug/ml VOC Std#5 | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03-SS | 8260 Gases(SS) | 2000 | 220940-33548 | 09/15/14F | 04/15/17 | 50 |
| O2SI | 020145-02-02-S | 2-CEVE | 2000 | 219465-33222 | 09/26/14F | 12/16/15 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1900 |
| 11/10/14O | | | | | | | |
| 50ug/ml VOC Std#6 | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120023-03-SS | VOC'S 54 COMP. | 2000 | 208329-32741 | 09/26/14G | 05/02/15 | 50 |
| O2SI | 120296-01-SS | Custom 8260 Solution | 2000 | 212199-32960 | 09/26/14H | 01/23/15 | 50 |
| O2SI | 020232-02-SS | Vinyl Acetate(SS) | 2000 | 232116-33844 | 09/15/14G | 10/08/14 | 50 |
| O2SI | 020620-02-SS | n-Hexane | 1000 | 205203-33678 | 09/26/14I | 03/12/15 | 100 |
| O2SI | 020049-02-SS | HEXACHLOROETHANE | 1000 | 226063-33531 | 09/26/14J | 04/07/16 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1650 |
| 11/10/14P | | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P | | | | | | | |
| Exp:12/10/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01-SS | VOC Mix 4-3 (SS) | 2000 | 189667-33305 | 09/03/14K | 05/18/15 | 250 |
| O2SI | 020229-09-SS | Acrolein SOLUTION (SS) | 10000 | 234095-33910 | 09/03/14L | 08/25/14 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1700 |

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|---|---|---|---|---|---|---|---|
| 11/10/14Q | | | | | | | |
| 50ug/ml Vol Work Std #7-B | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 120016-03 | Gas Mix | 2000 | 231710-33816 | 11/10/14A | 03/30/17 | 100 |
| O2SI | 020049-02 | HEXACHLOROETHANE | 1000 | 234821-33991 | 10/28/14B | 08/26/16 | 200 |
| O2SI | 020228-02 | Benzyl Chloride | 1000 | 227320-33830 | 10/28/13C | 04/28/16 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| 11/10/14R | | | | | | | |
| 50ug/ml Vol Work Std #1-B | | | | | | | |
| Exp:12/10/14 | | | | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 020145-02-02 | 2-CEVE | 2000 | 229586-33691 | 10/28/14D | 06/03/17 | 50 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 1950 |
| 11/10/14S | | | | | | | |
| 50ug/ml Vol Work Std #8-B | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| | | | Conc. | | Date | Exp. | |
| Supplier | ID # | ID | ug/ml | Lot # | Code | Date | ul |
| O2SI | 122039-02 | Volatile Mix, 20-29 | 2000 | 212173-32728 | 10/28/14E | 07/22/15 | 100 |
| O2SI | 120023-03 | VOC'S-54 COMP | 2000 | 216122-32922 | 10/28/14F | 10/11/15 | 100 |
| O2SI | 020232-02 | Vinyl Acetate | 2000 | 229682-33660 | 10/28/14G | 08/28/14 | 100 |
| O2SI | 020620-02 | n-Hexane | 1000 | 195505-33675 | 11/10/13B | 09/09/17 | 200 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3500 |
| 11/10/14T | | | | | | | |
| 50ug/ml Vol Work Std #2-B | | | | | | | |
| Exp:12/10/14 | | | | | | | |
| Supplier | ID # | ID | ug/ml | | | | |
| O2SI | 121020-05 | HSL'S-Ketone Solution | 2000 | 232379-33874 | 10/20/14B | 07/14/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| | | 11/10/14U | | | | | |
| | | 5ug/ml Vol Work Std #9-B | | | | | |
| | | SOURCES | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml Vol Work Std #7 | | 11/10/14Q | 11/28/14 | 200 | |
| | | 50ug/ml Vol Work Std #8 | | 11/10/14S | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1600 | |
| | | 11/10/14V | | | | | |
| | | 5ug/ml Vol Work Std #10-B | | | | | |
| | | SOURCES | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml Vol Work Std #1 | | 11/10/14R | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |
| | | 11/10/14W | | | | | |
| | | 5ug/ml Vol Work Std #12-B | | | | | |
| | | SOURCES | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml Vol Work Std #2 | | 11/10/14T | 11/28/14 | 200 | |
| | | J&T Brand | | 10/15/14 | 07/09/18 | 1800 | |

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|---|---|---|---|---|---|---|---|
| 11/10/14X | | | | | | | |
| 50ug/ml 8260 Surrogate-B | | | Conc. | | Date | Exp. | |
| Exp:12/10/14 | | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120002-01 | 8260B Surr Solution | 2000 | 185763-33557 | 10/28/14H | 02/19/15 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3900 |
| 11/10/14Y | | | | | | | |
| 5.0ug/ml 8260 Surrogate-B | | | Lot | APPL Code | APPL Exp Date | ul | |
| | | 50ug/ml 8260 Surrogate | | 11/10/14X | 11/28/14 | 200 | |
| J&T Brand | | Purge & Trap MeOH | | 10/15/14 | 07/09/18 | 1800 | |
| 11/10/14Z | | | | | | | |
| 250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P-B | | | | | | | |
| Exp:12/10/14 | | | Conc. | | Date | Exp. | |
| Supplier | ID # | | ug/ml | Lot # | Code | Date | uL |
| O2SI | 120166-01 | Volatile Mix 4-3 | 2000 | 229254-33997 | 11/10/14C | 05/29/16 | 500 |
| O2SI. | 020229-09 | Acrolein | 10000 | 237721-34134 | 10/20/14D | 11/18/14 | 100 |
| J&T Brand | | Purge & Trap MeOH | | 49909-00768 | 10/27/14 | 07/09/18 | 3400 |

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| Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 11/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 11-10-14U | 11-10-14V | 11-10-14W | 11-10-14Y | 11-10-14Q | 11-10-14S | 11-10-14R | 11-10-14T | 11-10-14X | 11-10-14Z | w/P&T H2O |
| Date/code | µg/L | Exp 12-10-14 | Exp.12-10-14 | Exp:12-10-14 | Exp:12-10-14 | Exp:12-10-14 | Exp.12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | mL |
| 11-10-14AA | 0.3 | 3 | 3 | 3 | 6 | n/a | n/a | n/a | n/a | n/a | 2 | 50 |
| 11-10-14AB | 0.5 | 5 | 5 | 5 | 10 | n/a | n/a | n/a | n/a | n/a | 5 | 50 |
| 11-10-14AC | 1 | 10 | 10 | 10 | 20 | n/a | n/a | n/a | n/a | n/a | 10 | 50 |
| 11-10-14AD | 5 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 10 | 20 | 50 |
| 11-10-14AE | 10 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 25 | 25 | 50 |
| 11-10-14AF | 20 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 40 | 30 | 50 |
| 11-10-14AG | 40 | n/a | n/a | n/a | n/a | 40 | 40 | 40 | 40 | 80 | 35 | 50 |
| 11-10-14AH | 100 | n/a | n/a | n/a | n/a | 100 | 100 | 100 | 100 | 100 | 40 | 50 |

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| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 11/11/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 11-10-14H | 11-10-14I | 11-10-14J | 11-10-14L | 11-10-14O | 11-10-14F | 11-10-14E | 11-10-14G | 11-10-14K | 11-10-14M | w/P&T H2O |
| Date/code | µg/L | Exp.12-10-14 | Exp 12-10-14 | Exp:12-10-14 | Exp:12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp.12-10-14 | Exp 12-10-14 | mL |
| 11-10-14AI | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 11-10-14AJ | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 11-10-14AK | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 11-10-14AL | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 11-10-14AM | 30 | 30 | 30 | 30 | 30 | n/a | n/a | n/a | n/a | n/a | 4.2 | 5 |
| 11-10-14AN | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 11-10-14AO | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 11-10-14AP | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 11-10-14AQ | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

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| Volatile Standard Curve Preparation for 5mL Purge (8260 soil)-THOR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp: Date: | 11/12/14 | 5µg/mL | 5µg/mL | 5µg/mL | 5µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 50µg/mL | 250µg/mL | |
| | | Vol Std #9 | Vol Std #10 | Vol Std #12 | Surrogate | Vol Std #7 | Vol Std #8 | Vol Std #1 | Vol Std #2 | Surrogate | TBA | Final Vol |
| | Conc. | 11-10-14U | 11-10-14V | 11-10-14W | 11-10-14Y | 11-10-14Q | 11-10-14S | 11-10-14R | 11-10-14T | 11-10-14X | 11-10-14Z | w/P&T H2O |
| Date/code | µg/L | Exp.12-10-14 | Exp.12-10-14 | Exp 12-10-14 | Exp.12-10-14 | Exp.12-10-14 | Exp:12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | Exp 12-10-14 | mL |
| 11-11-14A | 2 | 2 | 2 | 2 | 2 | n/a | n/a | n/a | n/a | n/a | 1 | 5 |
| 11-11-14B | 5 | 5 | 5 | 5 | 5 | n/a | n/a | n/a | n/a | n/a | 2 | 5 |
| 11-11-14C | 10 | 10 | 10 | 10 | 10 | n/a | n/a | n/a | n/a | n/a | 3 | 5 |
| 11-11-14D | 20 | 20 | 20 | 20 | 20 | n/a | n/a | n/a | n/a | n/a | 4 | 5 |
| 11-11-14E | 50 | n/a | n/a | n/a | n/a | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 11-11-14F | 100 | n/a | n/a | n/a | n/a | 10 | 10 | 10 | 10 | 10 | 6 | 5 |
| 11-11-14G | 150 | n/a | n/a | n/a | n/a | 15 | 15 | 15 | 15 | 15 | 7 | 5 |
| 11-11-14H | 200 | n/a | n/a | n/a | n/a | 20 | 20 | 20 | 20 | 20 | 8 | 5 |

11/12/14
RS

Butane Solution, 2,000 mg/L, 1 ml
021009-03
Lot # 223481 | Storage ≤-10 Degrees C | Expiry 3/7/17
Solv: P/T Methanol
R&D only, not human consumption. Made in the USA

Butane
Lot #: 223481 - 34025
Rec: 9/9/14 MFR exp. 3/7/17

RS

# Injection Log

Directory: M:\LOKI\DATA\141104\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 29 | 1107L34.D | 1 | 25ug/mL BFB Std 09-30-14 | 2ul | 8 Nov 14 2:17 |
| 2 | 30 | 1107L35.D | 1 | 0.1ug/L Vol Std 11-07-14 | 10mL w/5uL IS:10-06-14 | 8 Nov 14 2:45 |
| 3 | 1 | 1110L01.D | 1 | 25ug/mL BFB Std 09-30-14 | 2uL | 10 Nov 14 16:17 |
| 4 | 5 | 1110L06.D | 1 | 0.5ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 18:32 |
| 5 | 6 | 1110L07.D | 1 | 1.0ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 19:01 |
| 6 | 7 | 1110L08.D | 1 | 5.0ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 19:29 |
| 7 | 8 | 1110L09.D | 1 | 10ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 19:57 |
| 8 | 9 | 1110L10.D | 1 | 20ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 20:25 |
| 9 | 10 | 1110L11.D | 1 | 40ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 20:54 |
| 10 | 11 | 1110L12.D | 1 | 100ug/L Vol Std 11-10-14 | 10mL w/5uL IS&S:10-06-14 | 10 Nov 14 21:22 |
| 11 | 1 | 1111L02.D | 1 | 25ug/mL BFB Std 09-30-14 | 10mL w/5uL IS&S:10-06-14 | 11 Nov 14 12:31 |
| 12 | 3 | 1111L04.D | 1 | 141111A LCS-WL(SS) | 10mL w/5uL IS&S:10-06-14 | 11 Nov 14 13:28 |
| 13 | 3 | 1114L04.D | 1 | 25ug/mL BFB Std 09-30-14 | 2ul | 14 Nov 14 9:16 |
| 14 | 4 | 1114L05.D | 1 | 10ug/L Vol Std 11-14-14 | 10mL w/5uL IS&S:10-06-14 | 14 Nov 14 9:44 |
| 15 | 5 | 1114L06.D | 1 | 141114A LCS-WL | 10mL w/5uL IS&S:10-06-14 | 14 Nov 14 10:12 |
| 16 | 10 | 1114L11.D | 1 | 141114A BLK-WL | 10mL w/5uL IS&S:10-06-14 | 14 Nov 14 12:33 |
| 17 | 13 | 1114L14.D | 1 | AZ07201W01 | 10mL w/5uL IS&S:10-06-14 | 14 Nov 14 13:57 |
| 18 | 19 | 1114L20.D | 1 | AZ07202W01 | 10mL w/5uL IS&S:10-06-14 | 14 Nov 14 16:45 |
| 19 | 20 | 1114L21.D | 1 | AZ07203W01 | 10mL w/5uL IS&S:10-06-14 | 14 Nov 14 17:13 |

# RSK-175

APPL, INC.

# RSK-175
# QC Summary

APPL, INC.

# Method Blank

## MEE

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141116W-07202 - 192465**
Batch ID: #RSK50-141116AA

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 11/16/14 | 11/16/14 |

Quant Method: RSK175Q.M
Run #: 1115F028
Instrument: Frodo
Sequence: 141115
Initials: SD

*GC SC-Blank-REG MDLs*
*Printed: 12/01/14 3:23:11 PM*

# Laboratory Control Spike Recovery

## MEE

APPL ID: **141116W-07202 LCS - 192465**
Batch ID: #RSK50-141116AA

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| METHANE | 133 | 161 | 121 | 72-125 |

Comments:

| Primary | SPK |
|---|---|
| Quant Method : | RSK175Q.M |
| Extraction Date : | 11/16/14 |
| Analysis Date : | 11/16/14 |
| Instrument : | Frodo |
| Run : | 1115F029 |
| Initials : | SD |

*Printed: 12/01/14 3:23:00 PM*
*APPL Standard LCS*

# RSK 175

Form 4

## Blank Summary

Lab Name: APPL, Inc. SDG No: 74924

Case No: 74924 Date Analyzed: 11/16/14

Matrix: WATER Instrument: Frodo

Blank ID: 141116AA-BLK Time Analyzed: 1212

| APPL ID. | Client Sample No. | File ID. | Date Analyzed |
|---|---|---|---|
| 141116AA-BLK | Blank | 1115F028 | 11/16/14 1212 |
| 141116AA-LCS | Lab Control Spike | 1115F029 | 11/16/14 1212 |
| AZ07202 | HW111214-01 | 1115F037 | 11/16/14 1300 |
| AZ07203 | HW111214-02 | 1115F038 | 11/16/14 1304 |

Comments: Batch: #RSK50-141116AA

# RSK-175
# Sample Data

APPL, INC.

# MEE

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-01**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07202**
QCG: #RSK50-141116AA-192465

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| RSK 175 | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 11/16/14 | 11/16/14 |

| | |
|---|---|
| Quant Method: | RSK175Q.M |
| Run #: | 1115F037 |
| Instrument: | Frodo |
| Sequence: | 141115 |
| Dilution Factor: | 1 |
| Initials: | SD |

*Printed: 12/01/14 3:23:05 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\141115\1115F037.D Vial: 4
Acq On : 16 Nov 2014 13:00 Operator: SD
Sample : AZ07202W05 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Dec 2 15:47 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\141115\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Dec 02 15:43:37 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

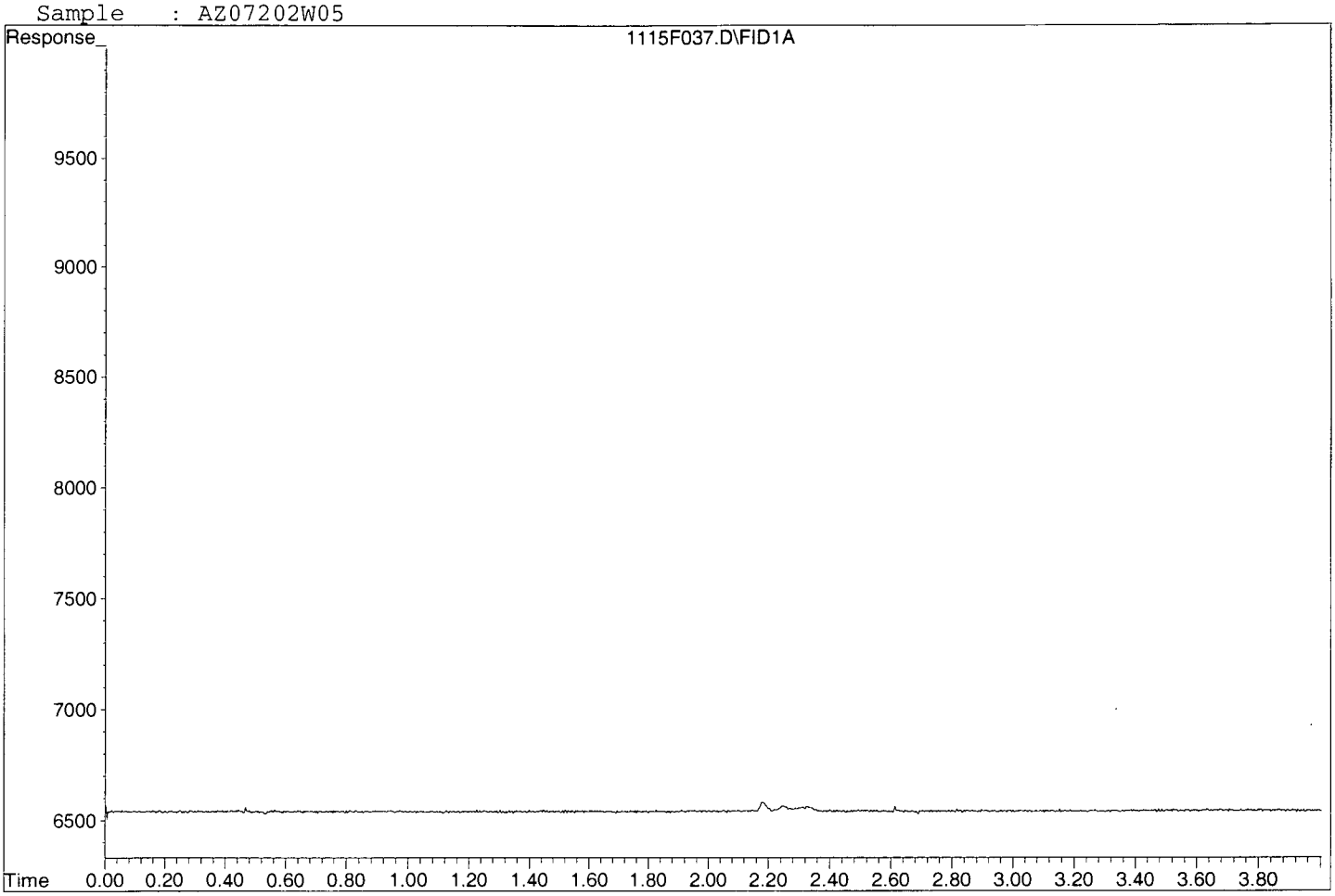
| Compound | R.T. | Response | Conc | Units |
|---|---|---|---|---|

Target Compounds



(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\141115\1115F037.D
Sample : AZ07202W05



# MEE

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-02**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07203**
QCG: #RSK50-141116AA-192465

| Method | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| RSK 175 | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 11/16/14 | 11/16/14 |

| | |
|---|---|
| Quant Method: | RSK175Q.M |
| Run #: | 1115F038 |
| Instrument: | Frodo |
| Sequence: | 141115 |
| Dilution Factor: | 1 |
| Initials: | SD |

*Printed: 12/01/14 3:23:05 PM*
*APPL-F1-SC-NoMC-REG MDLs*

Quantitation Report (Not Reviewed)

Data File : V:\FRODO\DATA\141115\1115F038.D Vial: 4
Acq On : 16 Nov 2014 13:04 Operator: SD
Sample : AZ07203W05 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Dec 2 15:21 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\141115\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Dec 02 15:43:37 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc | Units |
|---|---|---|---|---|

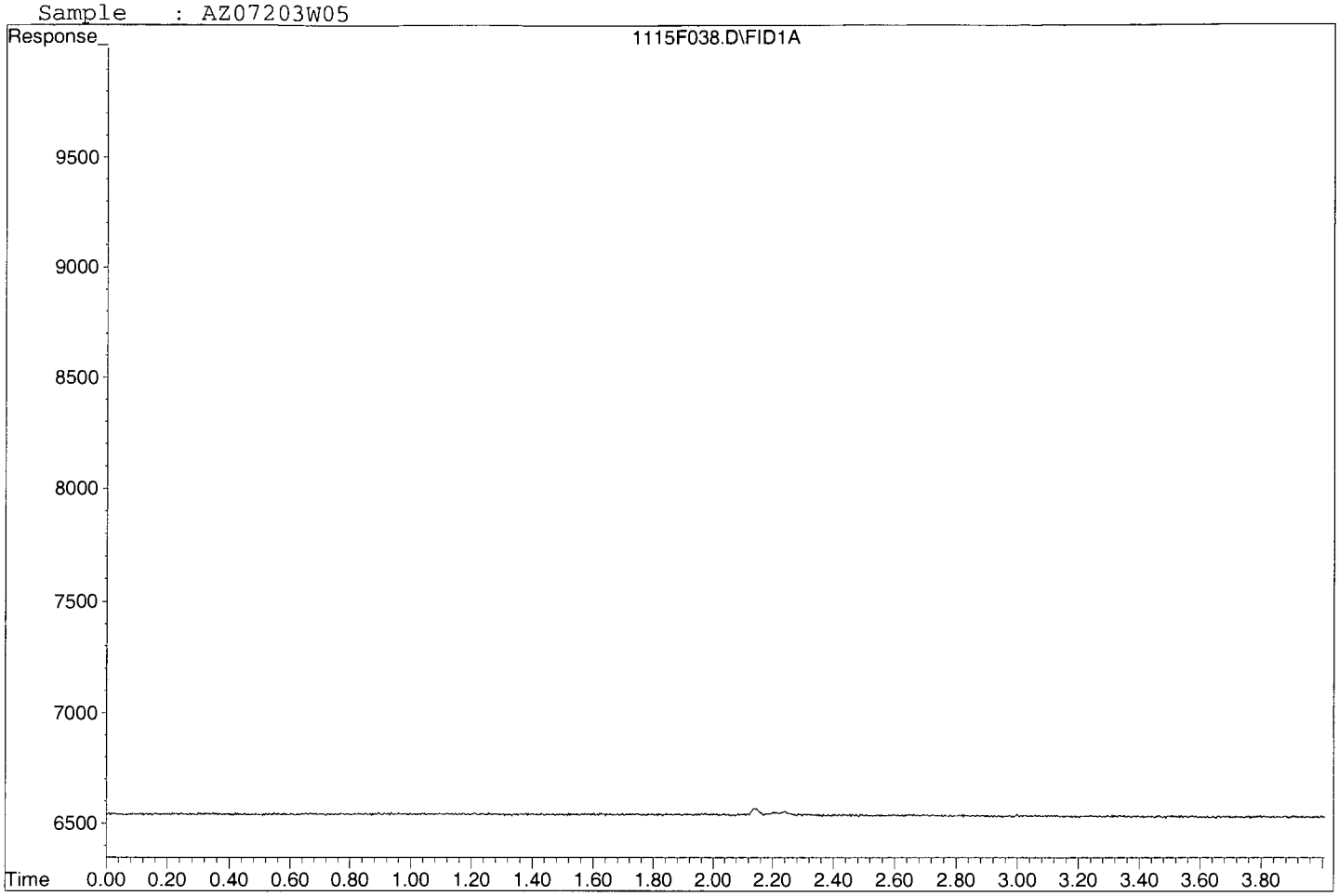
Target Compounds



(f)=RT Delta > 1/2 Window (m)=manual int.
1115F038.D RSK175Q.M Tue Dec 02 15:47:41 2014 Page 1

Quantitation Report

Data File: V:\FRODO\DATA\141115\1115F038.D
Sample : AZ07203W05



# RSK-175
# Calibration Data

APPL, INC.

# Form 6
## Initial Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Initial Cal. Date: 03/06/13
Instrument: Frodo
Initials: LF

| | | Compound | 1 | 2 | 3 | 4 | 5 | | | Avg | %RSD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0306F001.D | 0306F002.D | 0306F003.D | 0306F004.D | 0306F005.D | | | | | | |
| 1 | ATML | Methane | 1275 | 462 | 373 | 359 | 357 | | | 565 | 71 | ATML | 1.00 |
| 2 | ATM | Ethane | 304 | 260 | 315 | 313 | 369 | | | 312 | 12 | ATM | |
| 3 | ATM | Ethene | 351 | 249 | 326 | 328 | 387 | | | 328 | 15 | ATM | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
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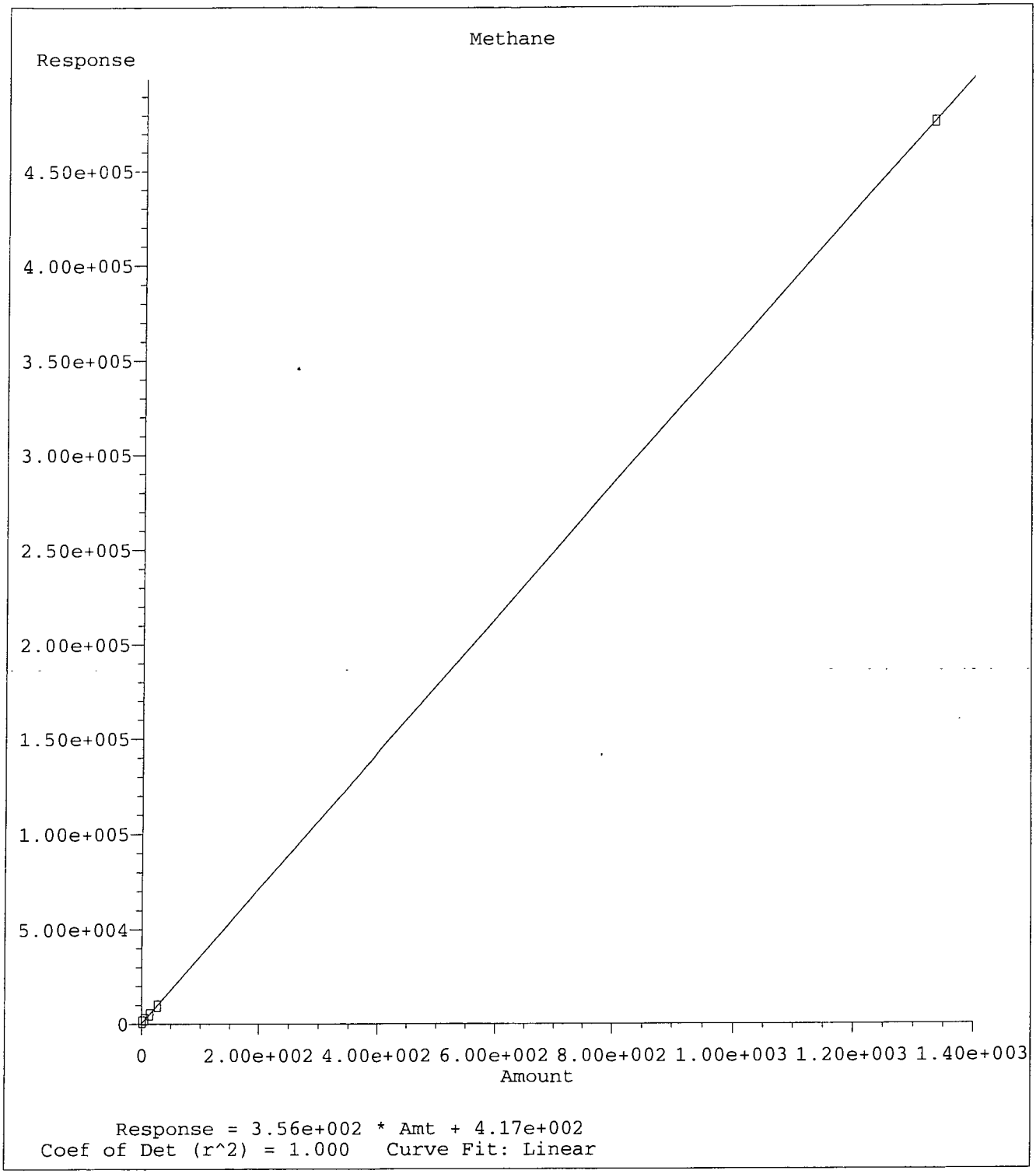
2.8108498




Method Name: V:\FRODO\DATA\130306\RSK175Q.M
Calibration Table Last Updated: Mon Dec 01 13:33:36 2014

# RSK Calibration Concentration Summary 130306

Compound #1: Methane (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 0.900 | 1147 | | | |
| 2 | 5.100 | 2355 | | | |
| 3 | 13.338 | 4981 | | | |
| 4 | 26.700 | 9581 | | | |
| 5 | 1333.800 | 475739 | | | |
| cca | 133.380 | | | | |
| | | | | | |
| ccb | 267.760 | | | | |
| | | | | | |
| | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass 0.00

Correction Factor 0.000

Prev Next Plot Page 1 Page 2 OK Cancel Help

Compound #2: Ethane (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 1.700 | 516 | | | |
| 2 | 9.500 | 2472 | | | |
| 3 | 25.000 | 7865 | | | |
| 4 | 50.000 | 15656 | | | |
| 5 | 2500.100 | 921885 | | | |
| cca | 250.010 | | | | |
| | | | | | |
| ccb | 500.020 | | | | |
| | | | | | |
| | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass 0.00

Correction Factor 0.000

Prev Next Plot Page 1 Page 2 OK Cancel Help

Compound #3: Ethene (Page 3)

| Lvl ID | Conc | Response | Lvl ID | Conc | Response |
|---|---|---|---|---|---|
| 1 | 1.600 | 562 | | | |
| 2 | 8.900 | 2219 | | | |
| 3 | 23.300 | 7603 | | | |
| 4 | 46.600 | 15290 | | | |
| 5 | 2332.500 | 901927 | | | |
| cca | 233.250 | | | | |
| | | | | | |
| ccb | 466.500 | | | | |
| | | | | | |
| | | | | | |

| | Integration Parameter File | Sum? |
|---|---|---|
| Tgt | | |
| Q1 | | ☐ |
| Q2 | | ☐ |
| Q3 | | ☐ |

Area Correction Mass 0.00

Correction Factor 0.000

Prev Next Plot Page 1 Page 2 OK Cancel Help

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F001.D Vial: 1
Acq On : 6 Mar 2013 10:46 Operator: lsf
Sample : RSK L-1 03-06-13 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:31 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

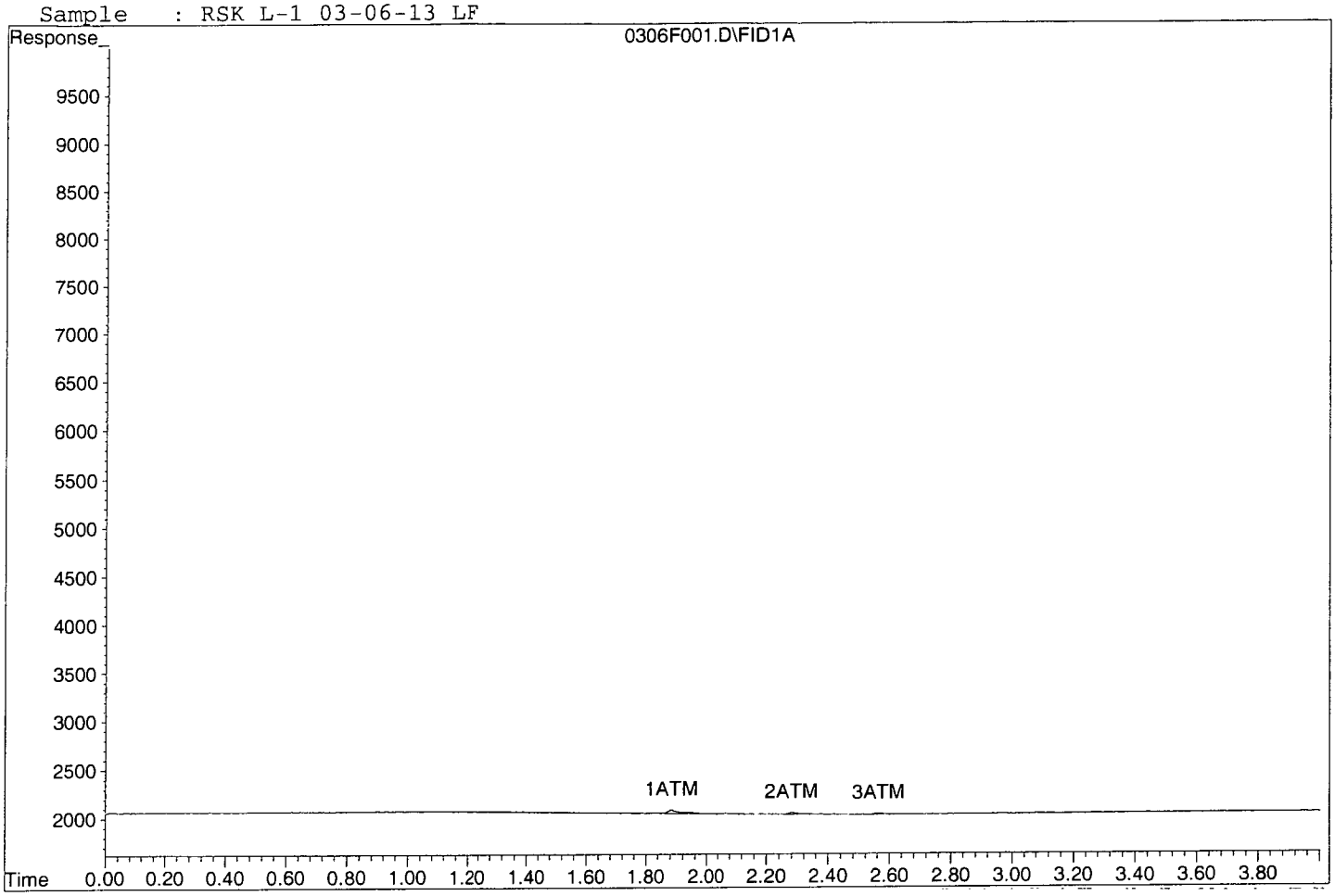
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.89 | 1147 | 2.051 ppb |
| 2) ATM Ethane | 2.28 | 516 | 1.654 ppb |
| 3) ATM Ethene | 2.57 | 562 | 1.711 ppb |



(f)=RT Delta > 1/2 Window (m)=manual int.
0306F001.D RSK175Q.M Mon Dec 01 13:27:40 2014 Page 1

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F001.D
Sample : RSK L-1 03-06-13 LF



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F002.D Vial: 2
Acq On : 6 Mar 2013 10:55 Operator: lsf
Sample : RSK L-2 03-06-13 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:00 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

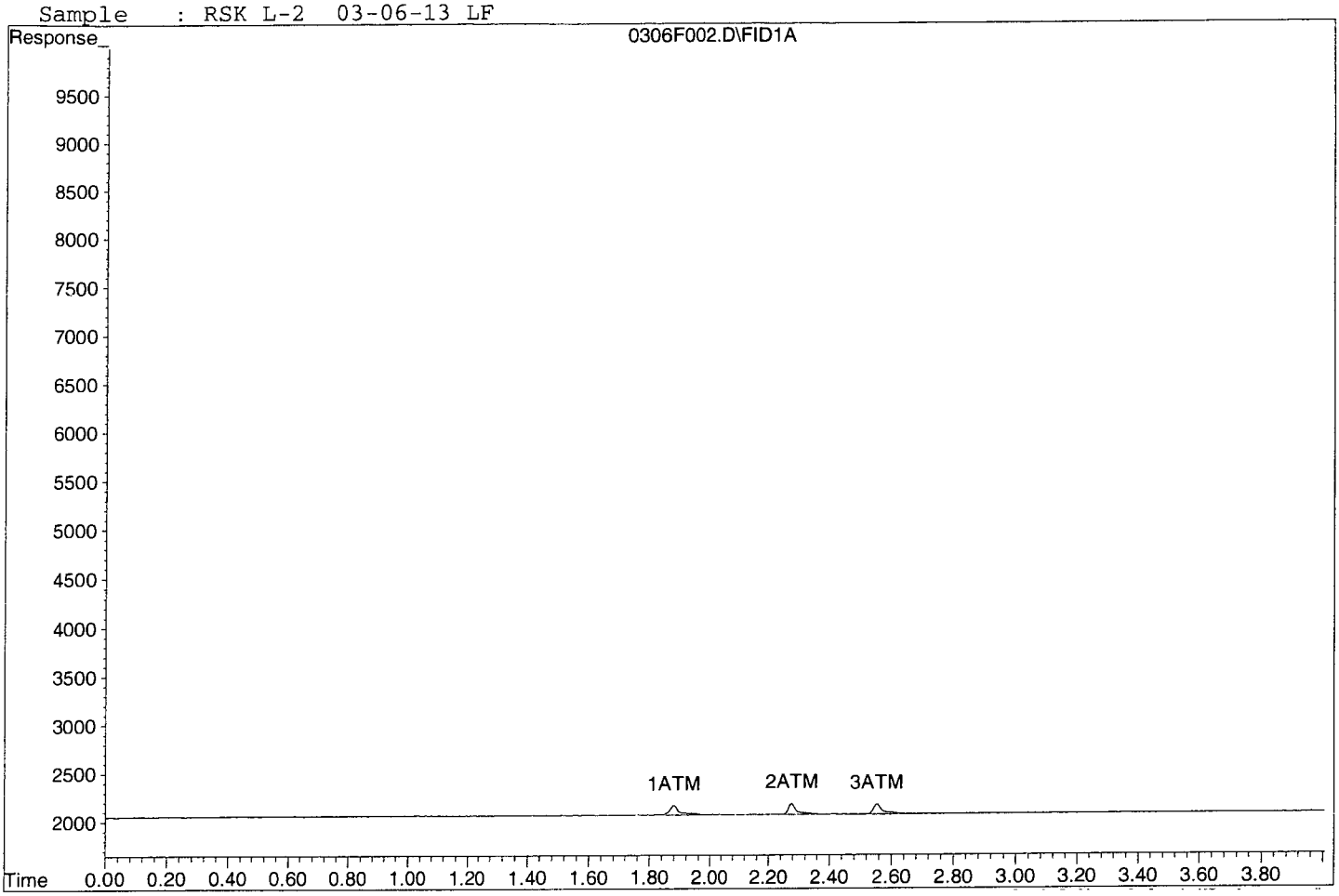
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 2355 | 1.146 ppb |
| 2) ATM Ethane | 2.28 | 2472 | 3.396 ppb |
| 3) ATM Ethene | 2.55 | 2219 | 3.381 ppb |



(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F002.D
Sample : RSK L-2 03-06-13 LF



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F003.D
Acq On : 6 Mar 2013 11:00
Sample : RSK L-3 03-06-13 LF
Misc : Water
IntFile : events.e
Quant Time: Mar 6 11:05 2013 Quant Results File: RSK175Q.RES

Vial: 3
Operator: lsf
Inst : Frodo
Multiplr: 1.00

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

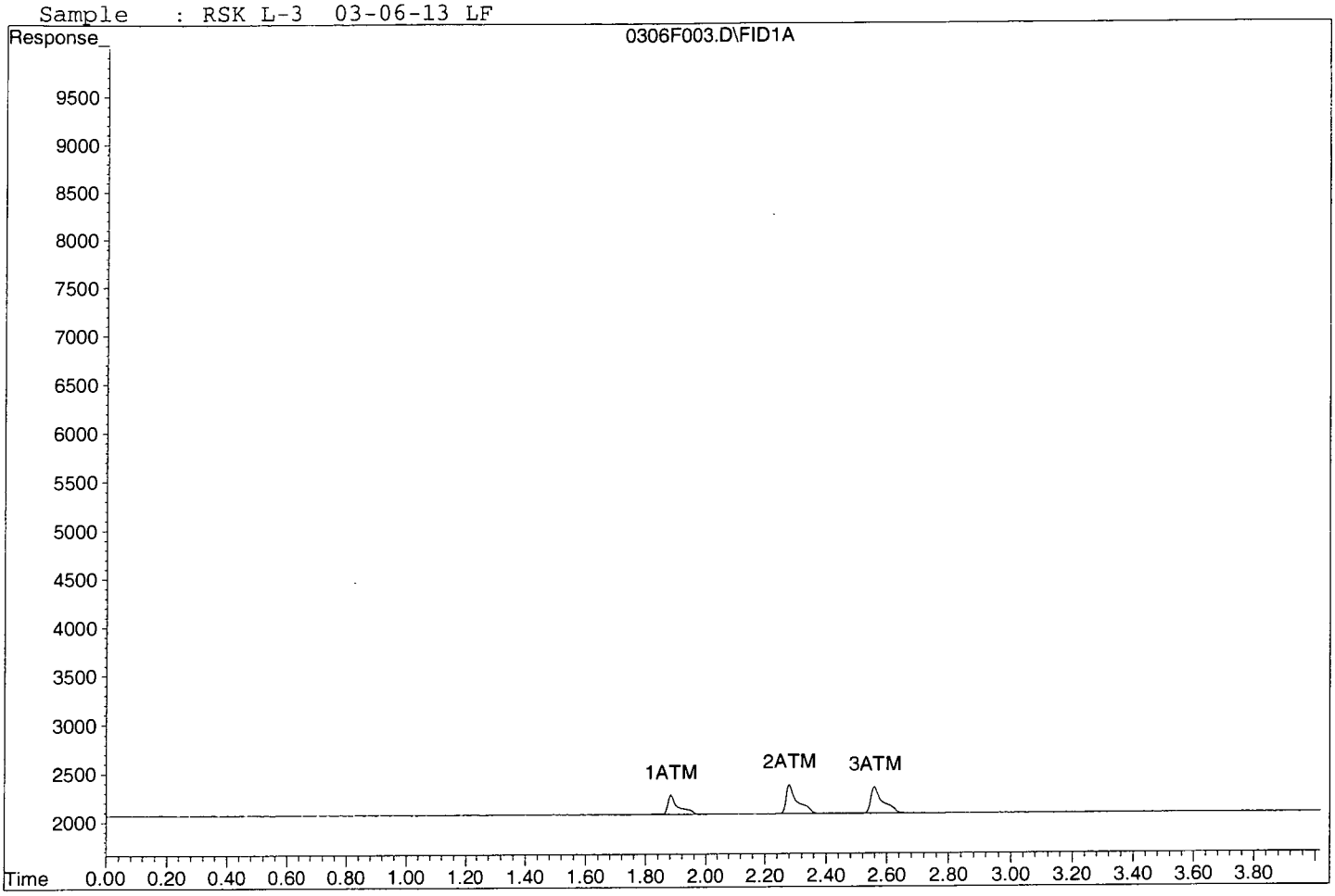
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 4981 | 4.212 ppb |
| 2) ATM Ethane | 2.28 | 7865 | 20.444 ppb |
| 3) ATM Ethene | 2.56 | 7603 | 20.362 ppb |



(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F003.D
Sample : RSK L-3 03-06-13 LF



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F004.D Vial: 4
Acq On : 6 Mar 2013 11:05 Operator: lsf
Sample : RSK L-4 03-06-13 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:25 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

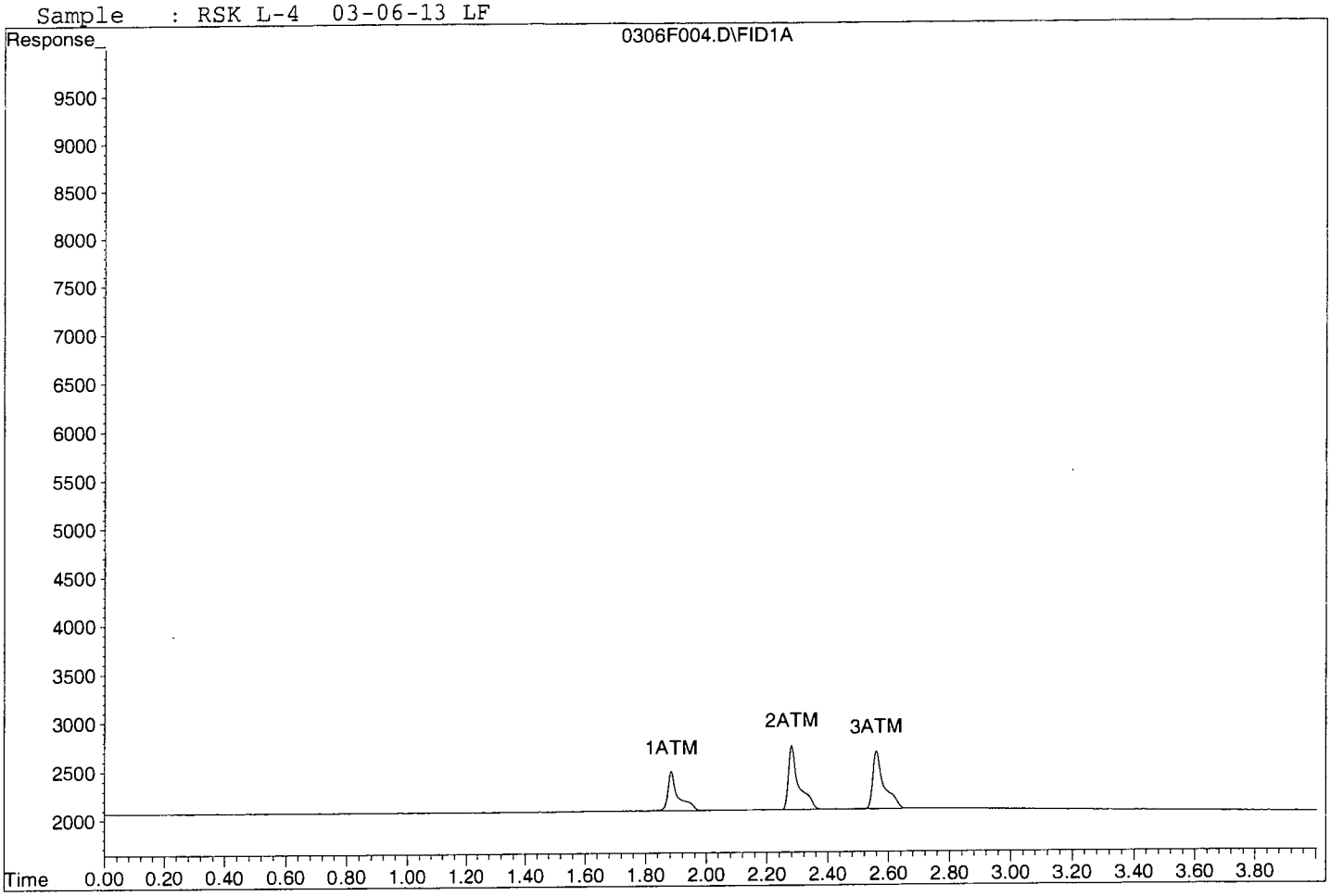
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 9581 | 25.717 ppb |
| 2) ATM Ethane | 2.28 | 15656 | 45.982 ppb |
| 3) ATM Ethene | 2.56 | 15290 | 42.993 ppb |



(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F004.D
Sample : RSK L-4 03-06-13 LF



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F005.D Vial: 5
Acq On : 6 Mar 2013 11:09 Operator: lsf
Sample : RSK L-7 03-06-13 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:15 2013 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

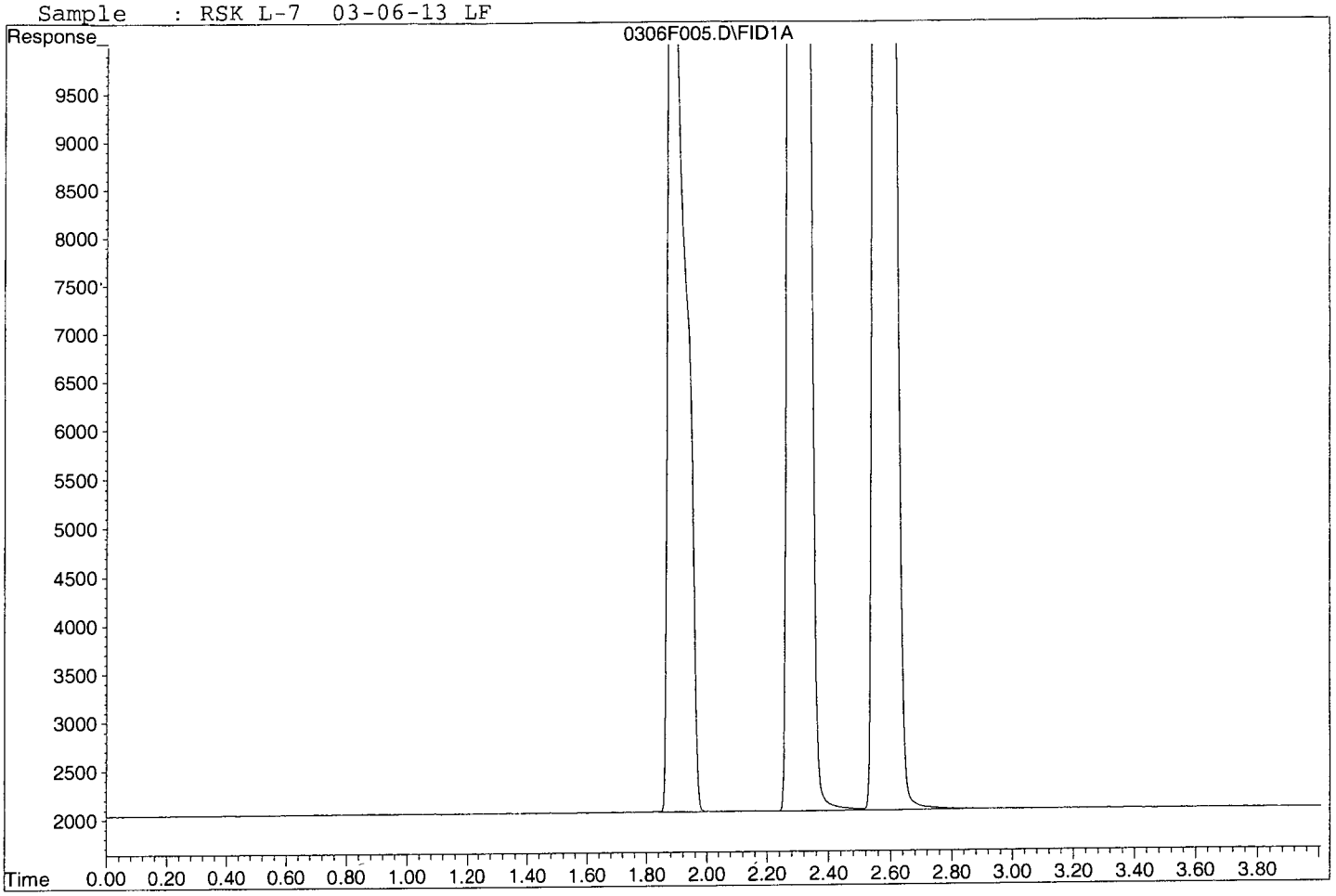
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 475739 | 614.401 ppb |
| 2) ATM Ethane | 2.28 | 921885 | 2639.481 ppb |
| 3) ATM Ethene | 2.56 | 901927 | 2574.780 ppb |



(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F005.D
Sample : RSK L-7 03-06-13 LF



Form 7

# Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 6 Mar 2013 11:53
Instrument: Frodo
Initial Cal. Date: 03/06/13
Data File: 0306F008.D

| | | Compound | MEAN | CCRF | %D | | %Drift |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 323 | 43 | ATML | 14 |
| 2 | ATM | Ethane | 312 | 308 | 1.2 | ATM | |
| 3 | ATM | Ethene | 328 | 321 | 2.4 | ATM | |
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| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 15.5 | | |

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F008.D Vial: 8
Acq On : 6 Mar 2013 11:53 Operator: lsf
Sample : 130306A LCS-1 (SS) Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 7 13:33 2013 Quant Results File: RSK175Q.RES

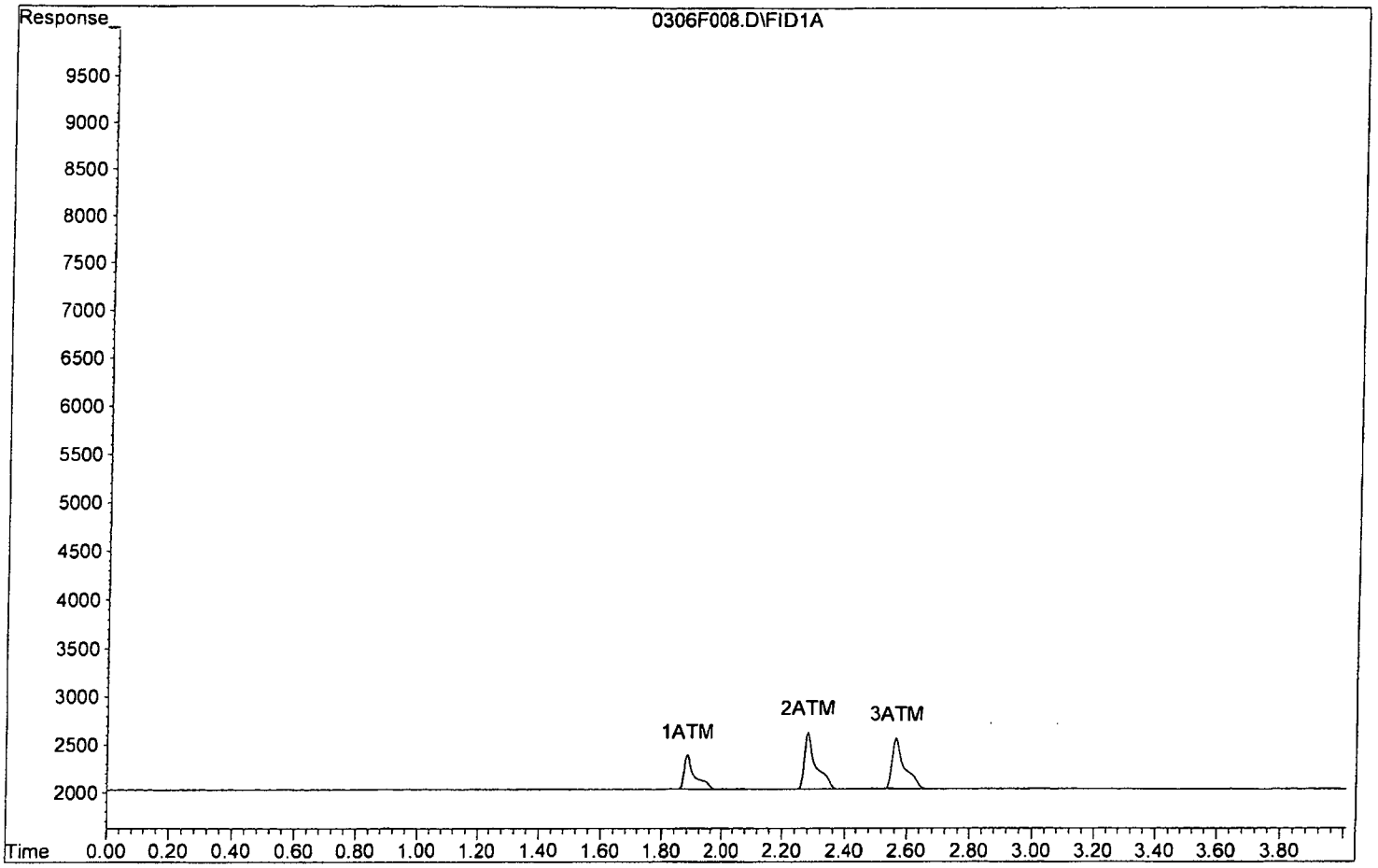
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Thu Mar 07 13:29:20 2013
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 1.88 | 8635 | 23.062 ppb |
| 2) ATM Ethane | 2.28 | 15416 | 49.407 ppb |
| 3) ATM Ethene | 2.56 | 14936 | 45.493 ppb |

Quantitation Report

Data File: V:\FRODO\DATA\130306\0306F008.D
Sample : 130306A LCS-1 (SS)



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 11/16/14
Instrument: Frodo
Initial Cal. Date: 11/15/14
Data File: 1115F027.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 273 | 52 | ATML | 24 |
| 2 | ATM | Ethane | 312 | 329 | 5.4 | ATM | |
| 3 | ATM | Ethene | 328 | 337 | 2.6 | ATM | |
| 4 | | | | | | | |
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| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 20.0 | | |

Quantitation Report (Not Reviewed)

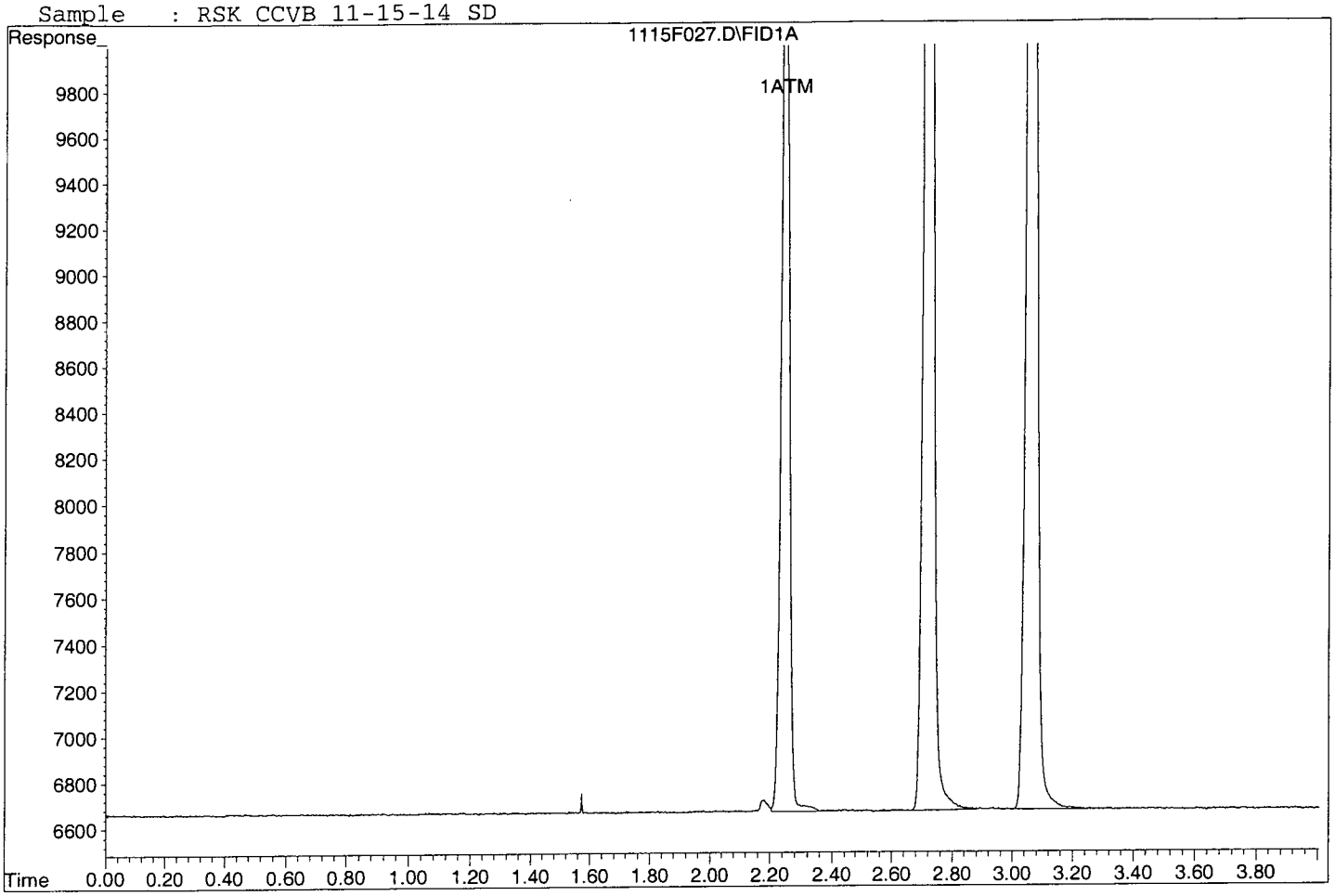
Data File : V:\FRODO\DATA\141115\1115F027.D Vial: 1
Acq On : 16 Nov 2014 12:05 Operator: SD
Sample : RSK CCVB 11-15-14 SD Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Dec 2 12:31 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\141115\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Dec 02 12:25:38 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 2.25 | 73222 | 204.302 ppb |
| 2) ATM Ethane | 2.72 | 164453 | 527.024 ppb |
| 3) ATM Ethene | 3.06 | 157082 | 478.421 ppb |

Data File: V:\FRODO\DATA\141115\1115F027.D
Sample : RSK CCVB 11-15-14 SD



Form 7

# Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix:

SDG No:
Date Analyzed: 11/16/14
Instrument: Frodo
Initial Cal. Date: 11/15/14
Data File: 1115F041.D

| | | Compound | MEAN | CCRF | %D | %Drift | |
|---|---|---|---|---|---|---|---|
| 1 | ATML | Methane | 565 | 278 | 51 | ATML | 23 |
| 2 | ATM | Ethane | 312 | 330 | 5.6 | ATM | |
| 3 | ATM | Ethene | 328 | 347 | 5.7 | ATM | |
| 4 | | | | | | | |
| 5 | | | | | | | |
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| 23 | | | | | | | |
| 24 | | | | | | | |
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| 27 | | | | | | | |
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| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| | | Average | | | 20.8 | | |

Quantitation Report (Not Reviewed)

Data File : V:\FRODO\DATA\141115\1115F041.D Vial: 2
Acq On : 16 Nov 2014 13:37 Operator: SD
Sample : RSK CCVA 11-15-14 SD Inst : Frodo
Misc : Multiplr: 1.00
IntFile : events.e
Quant Time: Dec 2 15:12 2014 Quant Results File: RSK175Q.RES

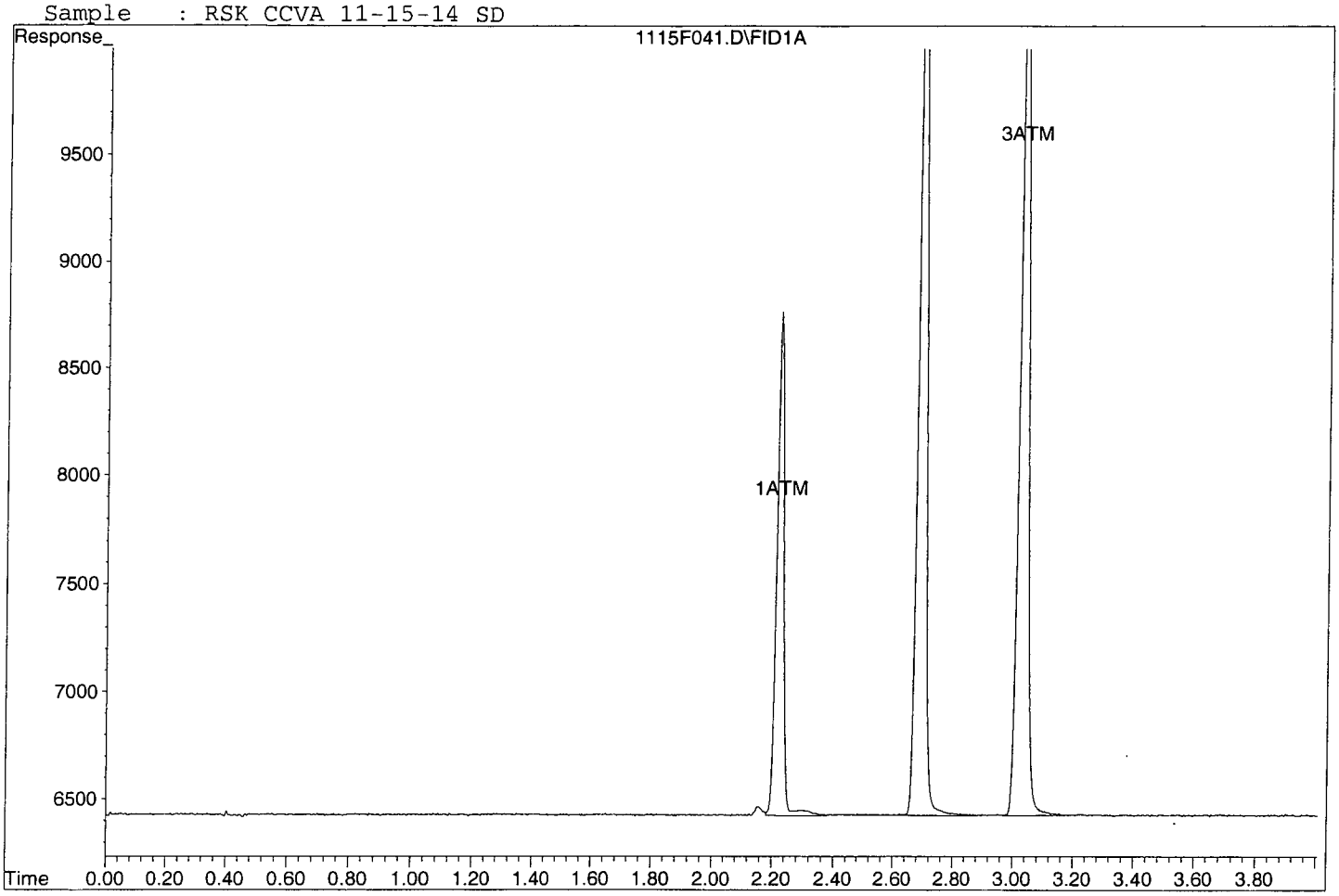
Method : V:\FRODO\DATA\141115\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Dec 02 15:02:55 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 2.22 | 37029 | 102.741 ppb |
| 2) ATM Ethane | 2.69 | 82380 | 264.006 ppb |
| 3) ATM Ethene | 3.03 | 80982 | 246.643 ppb |

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\141115\1115F041.D
Sample : RSK CCVA 11-15-14 SD



# RSK-175
# Raw Data

APPL, INC.

# Method Blank

## MEE

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **141116W-07202 - 192465**
Batch ID: #RSK50-141116AA

| Sample Type | Analyte | Result | LOQ | LOD | DL | Units | Extraction Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| BLANK | METHANE | 0.45 U | 1.0 | 0.45 | 0.25 | ug/L | 11/16/14 | 11/16/14 |

Quant Method: RSK175Q.M
Run #: 1115F028
Instrument: Frodo
Sequence: 141115
Initials: SD

*GC SC-Blank-REG MDLs*
*Printed: 12/01/14 3:23:09 PM*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\141115\1115F028.D
Acq On : 16 Nov 2014 12:12
Sample : 141116B BLK-2
Misc : Water
IntFile : events.e
Quant Time: Dec 2 15:43 2014 Quant Results File: RSK175Q.RES

Vial: 1
Operator: SD
Inst : Frodo
Multiplr: 1.00

Method : V:\FRODO\DATA\141115\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Dec 02 15:41:38 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|

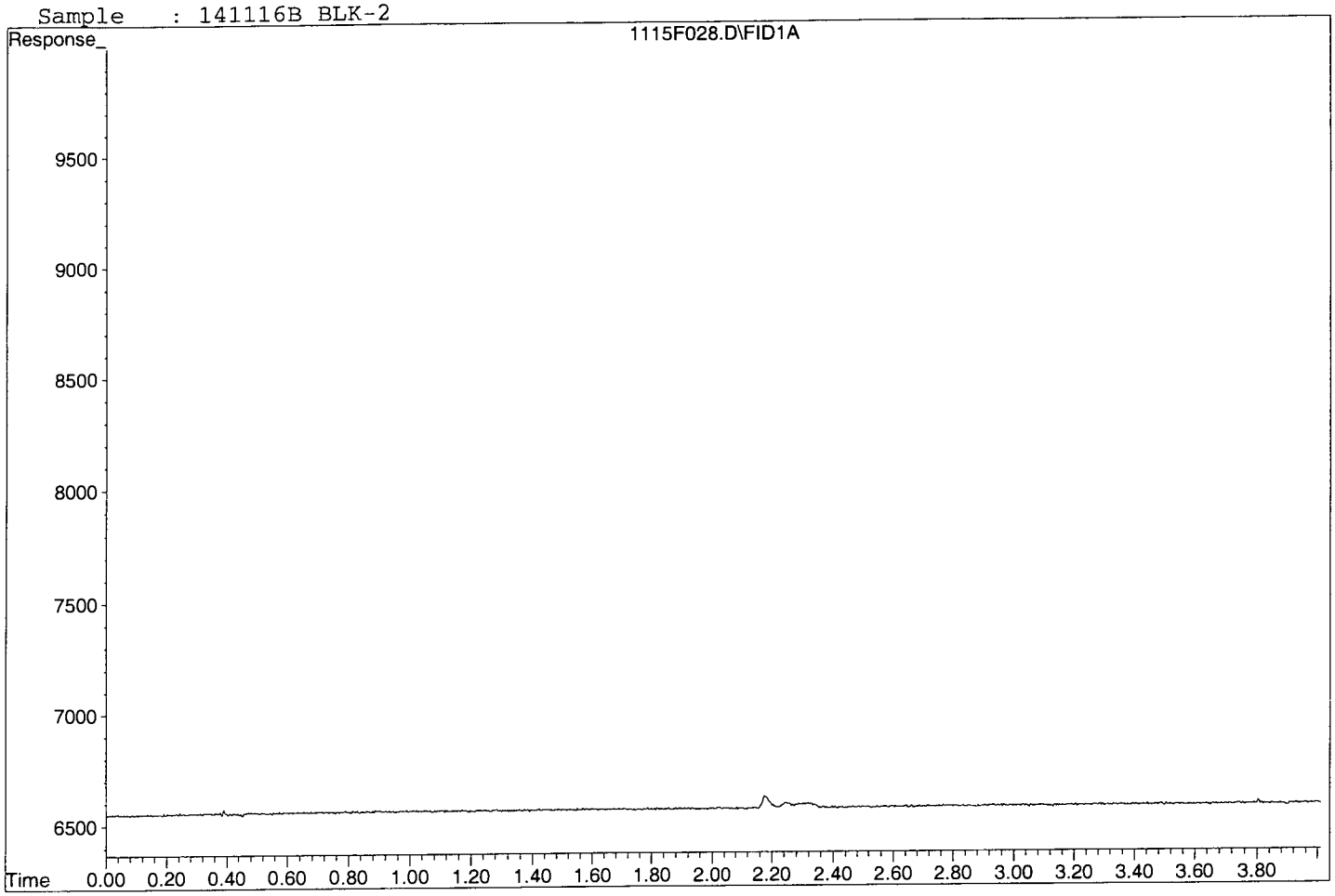
Target Compounds



(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\141115\1115F028.D
Sample : 141116B BLK-2



# Laboratory Control Spike Recovery

## MEE

APPL ID: **141116W-07202 LCS - 192465**
Batch ID: #RSK50-141116AA

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits |
|---|---|---|---|---|
| METHANE | 133 | 161 | 121 | 72-125 |

Comments: _____

| Primary | SPK |
|---|---|
| Quant Method : | RSK175Q.M |
| Extraction Date : | 11/16/14 |
| Analysis Date : | 11/16/14 |
| Instrument : | Frodo |
| Run : | 1115F029 |
| Initials : | SD |

*Printed: 12/01/14 3:23:00 PM*
*APPL Standard LCS*

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\141115\1115F029.D Vial: 2
Acq On : 16 Nov 2014 12:17 Operator: SD
Sample : 141116 LCS-2 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Dec 2 17:32 2014 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\141115\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Dec 02 15:51:04 2014
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

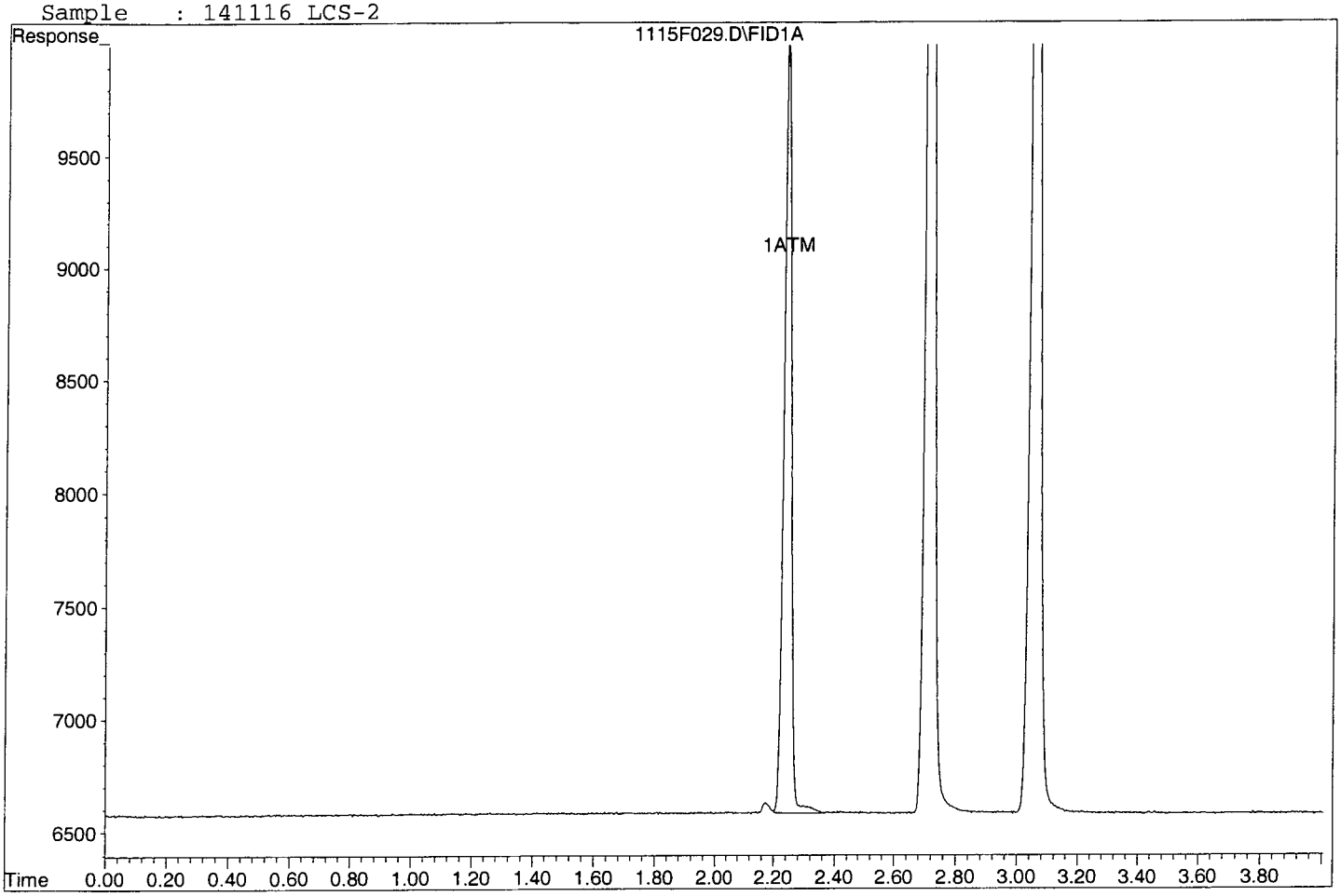
| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Target Compounds | | | |
| 1) ATM Methane | 2.24 | 57659 | 160.632 ppb |



(f)=RT Delta > 1/2 Window (m)=manual int.
1115F029.D RSK175Q.M Tue Dec 02 17:32:21 2014 Page 1

Quantitation Report

Data File: V:\FRODO\DATA\141115\1115F029.D
Sample : 141116 LCS-2



VF 12/3/12

**Intermediate Calibration Stock Standard**
12/3/12A is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Expires: 9/11/13
193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane, and Ethene opened 9/11/12 VF

**Level-4 continuing calibration verification standard**
4mL of 12/3/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

**LCS 121203A**
4mL of 12/3/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

VF

VF 12/11/12

**Intermediate Calibration Stock Standard**
12/11/12A is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Expires: 9/11/13
193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane, and Ethene opened 9/11/12

**Level-4 continuing calibration verification standard**
4mL of 12/11/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

**LCS 121211A**
4mL of 12/11/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

VF

VF 12/17/12

**Intermediate Calibration Stock Standard**
12/17/12A is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Expires: 9/11/13
193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane, and Ethene opened 9/11/12

**Level-4 continuing calibration verification standard**
4mL of 12/17/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

**LCS 121217A**
4mL of 12/17/12A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

3/6/13 VF Opened new standard lot# 248PLU2SPC03L-31312
Contains 10000ppmV of methane, Ethane, & Ethene
exp 3/6/14

RSK Standard Prep Logbook B

UF 3/6/13

UF

**Intermediate Calibration Stock Standard**
03/6/13 A is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 248PLU2SPC03L-31312 standard.
Expires: 03/16/14
248PLU2SPC03L-31312 is Stock Standard of 10000ppmv of Methane Ethane and Ethene opened 3/06/13
Helium Lot #. 105-400107481-1

**Calibration Standards**
Methane mw = 16.0426

| aliquot of std (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc (ug/mL) |
|---|---|---|---|---|---|
| 0.135 | 100 | 3/6/13 A | 0.009 | 10 | 0.0009 |
| 0.76 | 100 | 3/6/13 A | 0.051 | 10 | 0.0051 |
| 2 | 100 | 3/6/13 A | 0.133 | 10 | 0.0133 |
| 4 | 100 | 3/6/13 A | 0.267 | 10 | 0.0267 |
| 2 | 10000 | 248PLU2SPC03L-31312 standard. | 13.336 | 10 | 1.3338 |

Ethane mw = 30.0694

| aliquot of std. (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc. (ug/mL) |
|---|---|---|---|---|---|
| 0.135 | 100 | 3/6/13 A | 0.017 | 10 | 0.0017 |
| 0.76 | 100 | 3/6/13 A | 0.095 | 10 | 0.0095 |
| 2 | 100 | 3/6/13 A | 0.250 | 10 | 0.0250 |
| 4 | 100 | 3/6/13 A | 0.500 | 10 | 0.0500 |
| 2 | 10000 | 248PLU2SPC03L-31312 standard. | 25.001 | 10 | 2.5001 |

Ethene mw = 28.0536

| aliquot of std (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc (ug/mL) |
|---|---|---|---|---|---|
| 0.135 | 100 | 3/6/13 A | 0.016 | 10 | 0.0016 |
| 0.76 | 100 | 3/6/13 A | 0.089 | 10 | 0.0089 |
| 2 | 100 | 3/6/13 A | 0.233 | 10 | 0.0233 |
| 4 | 100 | 3/6/13 A | 0.466 | 10 | 0.0466 |
| 2 | 10000 | 248PLU2SPC03L-31312 standard. | 23.325 | 10 | 2.3325 |

**Methane/Ethane/Ethene Second Source**
193PLU2SPC04L-31276 is Stock Standard of 10000ppmv of Methane, Ethane and Ethene
opened 9/11/12 exp 9/11/13

**Intermediate Second Source Stock Standard**
3/6/13 B is prepared in a 1 L Tedlar bag. Add 990 mL Helium and 10 mL of 193PLU2SPC04L-31276 standard.
Concentration. 1000ppmv of Methane, Ethane, and Ethene
Expires 9/11/13

**Second Source Working Standard**

| aliquot of std. (mL) | std conc (ppmv) | stock std ID | ug into vial | water volume (mL) | water conc. (ug/mL) |
|---|---|---|---|---|---|
| 4 | 100 | 3/06/10 B | 0.267 | 10 | 0.0267 Methane |
| | | | 0.500 | | 0.0500 Ethane |
| | | | 0.466 | | 0.0466 Ethene |

**Level-4 continuing calibration verification standard**
4mL of 3/06/13 A into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane and 46.6ppb Ethene

**LCS 130306A 130306B**
4mL of 3/06/13 B into 10mL P & T Water
Final conc: 26.7ppb Methane, 50 ppb Ethane, and 46.6ppb Ethene

Reviewed by [illegible] 3/6/13

RSK Standard Prep Log B

**Intermediate Calibration Stock Standard 11/15/14**
11/15/2014 A is prepared in a 1 L Tedlar bag. Add 900mL Helium and 100mL of 248PLU2SPC03L-31312 standard. SD
Expires 12/15/14

**CCVA 11/15/14** Expires 12/15/14
2mL of Intermediate cal stock 11/15/14A into 10mL P&T water SD
final conc:133ppb Methane, 250ppb Ethane, and 233ppb Ethene

**CCVB 11/15/14** Expires 12/15/14
4mL of Intermediate cal stock 11/15/14A into 10mL P&T water SD
final conc:267ppb Methane, 500ppb Ethane, and 466ppb Ethene

**LCS 141116A**
4mL of Intermediate cal stock 11/15/14A into 10mL P&T water SD
final conc:267ppb Methane, 500ppb Ethane, and 466ppb Ethene

**LCS 141119A**
4mL of Intermediate cal stock 11/15/14A into 10mL P&T water SD
final conc:267ppb Methane, 500ppb Ethane, and 466ppb Ethene

**CCVA 11/26/14** Expires 12/26/14
2mL of Intermediate cal stock 11/15/14A into 10mL P&T water SD
final conc:133ppb Methane, 250ppb Ethane, and 233ppb Ethene

**CCVB 11/26/14** Expires 12/26/14
4mL of Intermediate cal stock 11/15/14A into 10mL P&T water SD
final conc:267ppb Methane, 500ppb Ethane, and 466ppb Ethene

**LCS 141126A**
4mL of Intermediate cal stock 11/15/14A into 10mL P&T water SD
final conc:267ppb Methane, 500ppb Ethane, and 466ppb Ethene

SD 12-3-14

# Injection Log

Directory: V:\FRODO\DATA\130306\

| Line | Vial | FileName | Multiplier | SampleName | Misc Info | Injected |
|---|---|---|---|---|---|---|
| 1 | 1 | 0306F001.D | 1 | RSK L-1 03-06-13 LF | Water | 6 Mar 2013 10:46 |
| 2 | 2 | 0306F002.D | 1 | RSK L-2 03-06-13 LF | Water | 6 Mar 2013 10:55 |
| 3 | 3 | 0306F003.D | 1 | RSK L-3 03-06-13 LF | Water | 6 Mar 2013 11:00 |
| 4 | 4 | 0306F004.D | 1 | RSK L-4 03-06-13 LF | Water | 6 Mar 2013 11:05 |
| 5 | 5 | 0306F005.D | 1 | RSK L-7 03-06-13 LF | Water | 6 Mar 2013 11:09 |
| 6 | 8 | 0306F008.D | 1 | 130306A LCS-1 (SS) | Water | 6 Mar 2013 11:53 |
| 33 | 1 | 1115F027.D | 1 | RSK CCVB 11-15-14 SD | Water | 16 Nov 2014 12:05 |
| 34 | 1 | 1115F028.D | 1 | 141116B BLK-2 | Water | 16 Nov 2014 12:12 |
| 35 | 2 | 1115F029.D | 1 | 141116 LCS-2 | Water | 16 Nov 2014 12:17 |
| 43 | 4 | 1115F037.D | 1 | AZ07202W05 | Water | 16 Nov 2014 13:00 |
| 44 | 4 | 1115F038.D | 1 | AZ07203W05 | Water | 16 Nov 2014 13:04 |
| 47 | 2 | 1115F041.D | 1 | RSK CCVA 11-15-14 SD | | 16 Nov 2014 13:37 |

# METALS

APPL, INC.

# METALS

## QC Summary

APPL, INC.

# METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| 6020A | LEAD (PB) (DISSOL | 0.40 U | 3.0 | 0.40 | 0.19 | ug/L | 11/26/14 | 12/03/14 | #62A14-141126B-AZ07203 |

*Metals SC-Blank-REG MDLs*
*Printed: 12/04/14 10:42:24 AM*

# Laboratory Control Spike Recovery

## METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVED) | 50.0 | 46.8 | 93.6 | 80-120 | 11/26/14 | 12/03/14 | #62A14-141126B-AZ07203 |

Comments:

# Matrix Spike Recoveries

## METALS

APPL ID: **141126W-07203 MS - 192570**

Sample ID: AZ07203

Client ID: HW111214-02

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl ug/L | Matrix Res ug/L | SPK Res ug/L | DUP Res ug/L | SPK % Recovery | DUP % Recovery | RPD | RPD Max | Recovery Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVE | 50.0 | 0.67 | 47.4 | 47.5 | 93.5 | 93.7 | 0.2 | 20 | 80-120 | 11/26/14 | 12/03/14 | 11/26/14 | 12/03/14 | 192570 | AZ07203 |

Comments: _____

# METALS

## Sample Data

APPL, INC.

# Metals Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-01**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07202**

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 6020A/3015^ | LEAD (PB) (DISSOLVED) | 12.2 | 3.0 | 0.40 | 0.19 | ug/L | 1 | 11/26/14 | 12/03/14 |

*Printed: 12/04/14 10:42:36 AM*
*APPL-F1-SC-NoMC-REG MDLs*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ07202W11 |
| Data File Name | 034SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T20:12:40-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.063 | -0.070 | -7.34 | 3 | 173.21 | 10000 | |
| B | 11 | 45 | NoGas | 85.847 | 95.385 | 2.11 | 60788 | 0.76 | 10000 | |
| Na | 23 | 45 | He | 28905.125 | 32116.805 | 2.08 | 29421984 | 2.33 | 1000000 | |
| Mg | 24 | 45 | He | 18955.283 | 21061.425 | 2.68 | 11126355 | 2.70 | 1000000 | |
| Al | 27 | 45 | He | 25.181 | 27.979 | 1.40 | 10663 | 1.00 | 1000000 | |
| K | 39 | 45 | He | 2125.524 | 2361.693 | 0.71 | 1829400 | 0.37 | 500000 | |
| Ca | 44 | 45 | He | 24149.538 | 26832.820 | 1.16 | 986278 | 0.88 | 500000 | |
| Ti | 47 | 45 | He | 0.084 | 0.094 | 98.79 | 79 | 25.47 | 10000 | |
| V | 51 | 45 | He | 8.257 | 9.175 | 1.26 | 53409 | 1.02 | 10000 | |
| Cr | 52 | 45 | He | 2.592 | 2.880 | 4.00 | 24426 | 2.90 | 10000 | |
| Mn | 55 | 45 | He | 1.073 | 1.192 | 5.19 | 8420 | 4.12 | 50000 | |
| Fe | 56 | 45 | He | 9.330 | 10.367 | 2.29 | 118610 | 1.54 | 1000000 | |
| Co | 59 | 45 | He | -0.038 | -0.042 | -13.51 | 501 | 11.16 | 10000 | |
| Ni | 60 | 45 | He | 18.895 | 20.995 | 0.33 | 54975 | 0.51 | 10000 | |
| Cu | 63 | 45 | He | 5.819 | 6.466 | 1.59 | 48612 | 1.48 | 10000 | |
| Zn | 66 | 115 | He | 15.646 | 17.385 | 1.02 | 28855 | 0.84 | 50000 | |
| As | 75 | 115 | He | 0.750 | 0.834 | 4.67 | 1145 | 3.94 | 2000 | |
| Se | 78 | 72 | H2 | 0.784 | 0.871 | 5.99 | 225 | 6.17 | 10000 | |
| Se | 78 | 115 | He | 1.410 | 1.567 | 7.92 | 363 | 3.36 | 10000 | |
| Sr | 88 | 115 | NoGas | 160.515 | 178.350 | 1.45 | 6232522 | 0.81 | 50000 | |
| Mo | 95 | 115 | NoGas | -1.198 | -1.331 | -3.10 | 3360 | 7.37 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.692 | 0.769 | 0.93 | 15411 | 0.50 | 5000 | |
| Cd | 111 | 115 | He | 1.677 | 1.863 | 2.07 | 4945 | 2.24 | 10000 | |
| Sn | 118 | 115 | He | 0.230 | 0.256 | 4.38 | 2823 | 2.32 | 10000 | |
| Sn | 118 | 115 | NoGas | 0.231 | 0.257 | 2.18 | 5361 | 2.00 | 10000 | |
| Sb | 121 | 115 | NoGas | -0.173 | -0.192 | -2.80 | 673 | 12.37 | 10000 | |
| Ba | 137 | 165 | NoGas | 12.921 | 14.357 | 1.04 | 94962 | 1.24 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.021 | 0.023 | 15.51 | 2254 | 8.25 | 5000 | |
| Pb | 208 | 165 | NoGas | 10.998 | 12.220 | 0.92 | 843427 | 0.61 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 33230 | 0.62 | 29515 | 112.59 | 70 | 120 | |
| Sc | 45 | H2 | 143483 | 0.08 | 120885 | 118.69 | 70 | 120 | |
| Sc | 45 | He | 116442 | 0.31 | 90842 | 128.18 | 70 | 120 | ISTD Failed |
| Sc | 45 | NoGas | 723858 | 1.41 | 581580 | 124.46 | 70 | 120 | ISTD Failed |
| Ge | 72 | H2 | 65563 | 1.00 | 55430 | 118.28 | 70 | 120 | |
| Ge | 72 | He | 81149 | 0.27 | 65257 | 124.35 | 70 | 120 | ISTD Failed |
| Ge | 72 | NoGas | 252448 | 1.09 | 205384 | 122.92 | 70 | 120 | ISTD Failed |
| In | 115 | H2 | 1760104 | 0.90 | 1539397 | 114.34 | 70 | 120 | |
| In | 115 | He | 988052 | 0.41 | 837505 | 117.98 | 70 | 120 | |
| In | 115 | NoGas | 2184733 | 1.36 | 1847093 | 118.28 | 70 | 120 | |
| Tb | 159 | H2 | 3644701 | 0.63 | 3319426 | 109.80 | 70 | 120 | |
| Tb | 159 | He | 2442023 | 1.05 | 2158455 | 113.14 | 70 | 120 | |
| Tb | 159 | NoGas | 3512511 | 0.43 | 3040386 | 115.53 | 70 | 120 | |
| Ho | 165 | H2 | 3603489 | 1.69 | 3213372 | 112.14 | 70 | 120 | |
| Ho | 165 | He | 2388818 | 2.00 | 2137675 | 111.75 | 70 | 120 | |
| Ho | 165 | NoGas | 3466907 | 0.48 | 2965292 | 116.92 | 70 | 120 | |

# Metals Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright
Project: 749435 Red Hill Phase 1b TO 0068
**Sample ID: HW111214-02**
Sample Collection Date: 11/12/14

ARF: 74924
**APPL ID: AZ07203**

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 6020A/3015^ | LEAD (PB) (DISSOLVED) | 0.67 J | 3.0 | 0.40 | 0.19 | ug/L | 1 | 11/26/14 | 12/03/14 |

J = Estimated value.

*Printed: 12/04/14 10:42:36 AM*
*APPL-F1-SC-NoMC-REG MDLs*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ07203W11 |
| Data File Name | 035SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T20:18:40-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.066 | -0.073 | 0.00 | 0 | #DIV/0! | 10000 | |
| B | 11 | 45 | NoGas | 79.010 | 87.789 | 0.73 | 55690 | 0.74 | 10000 | |
| Na | 23 | 45 | He | 33552.868 | 37280.964 | 1.41 | 33451246 | 0.69 | 1000000 | |
| Mg | 24 | 45 | He | 19387.000 | 21541.111 | 1.56 | 11158048 | 1.96 | 1000000 | |
| Al | 27 | 45 | He | 15.196 | 16.885 | 2.79 | 7046 | 1.33 | 1000000 | |
| K | 39 | 45 | He | 2166.251 | 2406.945 | 0.74 | 1825895 | 0.91 | 500000 | |
| Ca | 44 | 45 | He | 25031.061 | 27812.291 | 0.75 | 1002285 | 0.94 | 500000 | |
| Ti | 47 | 45 | He | 0.281 | 0.312 | 30.97 | 124 | 17.43 | 10000 | |
| V | 51 | 45 | He | 8.741 | 9.712 | 0.95 | 55392 | 1.44 | 10000 | |
| Cr | 52 | 45 | He | 1.428 | 1.587 | 2.20 | 15569 | 1.56 | 10000 | |
| Mn | 55 | 45 | He | 18.481 | 20.534 | 0.72 | 108711 | 0.73 | 50000 | |
| Fe | 56 | 45 | He | 31.544 | 35.049 | 1.57 | 276722 | 1.14 | 1000000 | |
| Co | 59 | 45 | He | 0.363 | 0.403 | 3.02 | 4884 | 2.31 | 10000 | |
| Ni | 60 | 45 | He | 8.732 | 9.702 | 0.26 | 25240 | 1.02 | 10000 | |
| Cu | 63 | 45 | He | 3.204 | 3.560 | 1.04 | 27457 | 0.43 | 10000 | |
| Zn | 66 | 115 | He | 12.520 | 13.911 | 1.38 | 23158 | 1.89 | 50000 | |
| As | 75 | 115 | He | 0.050 | 0.056 | 12.92 | 165 | 4.93 | 2000 | |
| Se | 78 | 72 | H2 | 0.131 | 0.146 | 18.38 | 51 | 12.52 | 10000 | |
| Se | 78 | 115 | He | 0.896 | 0.995 | 20.30 | 297 | 7.77 | 10000 | |
| Sr | 88 | 115 | NoGas | 165.919 | 184.355 | 1.54 | 6451908 | 0.57 | 50000 | |
| Mo | 95 | 115 | NoGas | -1.144 | -1.271 | -1.33 | 3784 | 2.25 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.007 | 0.008 | 25.55 | 227 | 18.37 | 5000 | |
| Cd | 111 | 115 | He | 0.009 | 0.010 | 43.52 | 35 | 32.19 | 10000 | |
| Sn | 118 | 115 | He | 0.280 | 0.312 | 8.77 | 3133 | 5.54 | 10000 | |
| Sn | 118 | 115 | NoGas | 0.270 | 0.300 | 2.79 | 5881 | 1.89 | 10000 | |
| Sb | 121 | 115 | NoGas | -0.142 | -0.158 | -2.86 | 1257 | 5.18 | 10000 | |
| Ba | 137 | 165 | NoGas | 16.481 | 18.313 | 1.16 | 120223 | 1.72 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.019 | 0.021 | 16.82 | 2127 | 7.47 | 5000 | |
| Pb | 208 | 165 | NoGas | 0.599 | 0.665 | 1.93 | 57182 | 2.05 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 32746 | 4.40 | 29515 | 110.95 | 70 | 120 | |
| Sc | 45 | H2 | 141576 | 1.74 | 120885 | 117.12 | 70 | 120 | |
| Sc | 45 | He | 114172 | 1.03 | 90842 | 125.68 | 70 | 120 | ISTD Failed |
| Sc | 45 | NoGas | 718645 | 1.00 | 581580 | 123.57 | 70 | 120 | ISTD Failed |
| Ge | 72 | H2 | 66002 | 0.79 | 55430 | 119.07 | 70 | 120 | |
| Ge | 72 | He | 80453 | 1.08 | 65257 | 123.29 | 70 | 120 | ISTD Failed |
| Ge | 72 | NoGas | 246777 | 0.53 | 205384 | 120.15 | 70 | 120 | ISTD Failed |
| In | 115 | H2 | 1721980 | 2.29 | 1539397 | 111.86 | 70 | 120 | |
| In | 115 | He | 973441 | 0.64 | 837505 | 116.23 | 70 | 120 | |
| In | 115 | NoGas | 2187950 | 0.96 | 1847093 | 118.45 | 70 | 120 | |
| Tb | 159 | H2 | 3589380 | 0.45 | 3319426 | 108.13 | 70 | 120 | |
| Tb | 159 | He | 2426259 | 1.40 | 2158455 | 112.41 | 70 | 120 | |
| Tb | 159 | NoGas | 3509867 | 1.08 | 3040386 | 115.44 | 70 | 120 | |
| Ho | 165 | H2 | 3519832 | 1.23 | 3213372 | 109.54 | 70 | 120 | |
| Ho | 165 | He | 2366269 | 1.46 | 2137675 | 110.69 | 70 | 120 | |
| Ho | 165 | NoGas | 3443961 | 0.60 | 2965292 | 116.14 | 70 | 120 | |

# METALS

## Calibration Data

APPL, INC.

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74924 SDG: 74924
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 12/03/14 Concentration Units: ug/L

| Analyte | Initial Calibration | | | Continuing Calibration | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True | Found 17:30 | %R(1) | True CCV1 | Found 18:12 | %R(1) | True CCV1 | Found 20:48 | %R(1) | |
| Lead (Pb) | 100 | 95.5352 | 95.5 | 50 | 49.1768 | 98.4 | 50 | 49.4570 | 98.9 | P |

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74924 SDG: 74924

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 12/03/14

| Analyte | Initial Calibration Blank (ug/L) | | Continuing Calibration Blank (ug/L) | | | | | | Preparation Blank | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 17:42 | C | 1 18:24 | C | 2 21:00 | C | 3 | C | 18:54 | C | |
| Lead (Pb) | 3.00 | U | 3.00 | U | 3.00 | U | | | 3.00 | U | P |

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: A.P.P.L. INC.
ARF No.: 74924
ICP ID Number: Megatron

Contract: Parsons
SDG: 74924
ICS Source: Environmental Express

Analysis Date: 12/03/14

Concentration Units: ug/L

| Analyte | True | | Initial Found | | |
|---|---|---|---|---|---|
| | Sol A | Sol AB | Sol A 18:30 | Sol AB 18:42 | %R(1) |
| Lead (Pb) | | 100 | -0.030932 | 87.25419 | 87.3 |

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
9
ICP SERIAL DILUTION

CLIENT SAMPLE NO.
HW111214-02

Lab Name: A.P.P.L. INC.
Contract: Parsons
ARF No.: 74924
SDG: 74924
Matrix: water

Analysis Date: 12/03/14
Concentration Units: ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | %D | Q | M |
|---|---|---|---|---|---|---|---|
| Lead (Pb) | 0.665118 | | 0.26342 | | NA | | |

Comments:

12/03/14 20:18 AZ07203W11

12/03/14 20:42 AZ07203W11 1/5

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ07203W11 1/5 |
| Data File Name | 039SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T20:42:43-08:00 |
| Sample Type | Sample |
| Dilution | 5.555555556 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.059 | -0.330 | -18.25 | 7 | 173.21 | 10000 | |
| B | 11 | 45 | NoGas | 19.698 | 109.434 | 2.67 | 12681 | 3.92 | 10000 | |
| Na | 23 | 45 | He | 6719.619 | 37331.215 | 1.90 | 6085876 | 1.18 | 1000000 | |
| Mg | 24 | 45 | He | 3995.626 | 22197.925 | 1.58 | 2042307 | 0.68 | 1000000 | |
| Al | 27 | 45 | He | -0.048 | -0.264 | -497.41 | 1635 | 3.38 | 1000000 | |
| K | 39 | 45 | He | 412.085 | 2289.360 | 2.37 | 390814 | 0.54 | 500000 | |
| Ca | 44 | 45 | He | 4980.811 | 27671.171 | 0.86 | 178347 | 1.76 | 500000 | |
| Ti | 47 | 45 | He | -0.103 | -0.572 | -39.70 | 29 | 29.04 | 10000 | |
| V | 51 | 45 | He | 1.987 | 11.041 | 3.90 | 11696 | 2.47 | 10000 | |
| Cr | 52 | 45 | He | 0.127 | 0.706 | 8.49 | 5499 | 2.49 | 10000 | |
| Mn | 55 | 45 | He | 3.815 | 21.195 | 2.45 | 21366 | 0.98 | 50000 | |
| Fe | 56 | 45 | He | 2.486 | 13.809 | 4.95 | 59333 | 1.97 | 1000000 | |
| Co | 59 | 45 | He | 0.035 | 0.192 | 29.15 | 1142 | 9.63 | 10000 | |
| Ni | 60 | 45 | He | 1.816 | 10.088 | 3.09 | 5087 | 1.83 | 10000 | |
| Cu | 63 | 45 | He | 0.604 | 3.358 | 5.94 | 6547 | 2.81 | 10000 | |
| Zn | 66 | 115 | He | 2.574 | 14.301 | 10.90 | 6308 | 7.06 | 50000 | |
| As | 75 | 115 | He | 0.109 | 0.606 | 10.08 | 243 | 5.85 | 2000 | |
| Se | 78 | 72 | H2 | 0.128 | 0.709 | 0.25 | 48 | 1.44 | 10000 | |
| Se | 78 | 115 | He | 0.638 | 3.546 | 36.10 | 263 | 9.94 | 10000 | |
| Sr | 88 | 115 | NoGas | 31.595 | 175.530 | 0.92 | 1197963 | 1.11 | 50000 | |
| Mo | 95 | 115 | NoGas | -1.296 | -7.201 | -0.81 | 2544 | 3.72 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.842 | 4.679 | 2.09 | 18287 | 0.94 | 5000 | |
| Cd | 111 | 115 | He | 0.002 | 0.009 | 250.47 | 14 | 85.71 | 10000 | |
| Sn | 118 | 115 | He | 0.192 | 1.066 | 4.62 | 2484 | 2.13 | 10000 | |
| Sn | 118 | 115 | NoGas | 0.151 | 0.840 | 1.08 | 4206 | 1.15 | 10000 | |
| Sb | 121 | 115 | NoGas | 0.595 | 3.304 | 3.89 | 14677 | 2.90 | 10000 | |
| Ba | 137 | 165 | NoGas | 3.180 | 17.669 | 4.03 | 23647 | 5.50 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.012 | 0.065 | 27.32 | 1767 | 10.16 | 5000 | |
| Pb | 208 | 165 | NoGas | 0.047 | 0.263 | 9.07 | 15887 | 1.02 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 25464 | 2.59 | 29515 | 86.28 | 70 | 120 | |
| Sc | 45 | H2 | 134822 | 0.88 | 120885 | 111.53 | 70 | 120 | |
| Sc | 45 | He | 101317 | 1.27 | 90842 | 111.53 | 70 | 120 | |
| Sc | 45 | NoGas | 600557 | 1.66 | 581580 | 103.26 | 70 | 120 | |
| Ge | 72 | H2 | 63852 | 1.43 | 55430 | 115.19 | 70 | 120 | |
| Ge | 72 | He | 77180 | 0.75 | 65257 | 118.27 | 70 | 120 | |
| Ge | 72 | NoGas | 234403 | 0.68 | 205384 | 114.13 | 70 | 120 | |
| In | 115 | H2 | 1760336 | 1.33 | 1539397 | 114.35 | 70 | 120 | |
| In | 115 | He | 961330 | 0.35 | 837505 | 114.79 | 70 | 120 | |
| In | 115 | NoGas | 2132076 | 1.27 | 1847093 | 115.43 | 70 | 120 | |
| Tb | 159 | H2 | 3725186 | 1.51 | 3319426 | 112.22 | 70 | 120 | |
| Tb | 159 | He | 2437034 | 2.27 | 2158455 | 112.91 | 70 | 120 | |
| Tb | 159 | NoGas | 3523696 | 0.35 | 3040386 | 115.90 | 70 | 120 | |
| Ho | 165 | H2 | 3592356 | 0.30 | 3213372 | 111.79 | 70 | 120 | |
| Ho | 165 | He | 2355014 | 1.40 | 2137675 | 110.17 | 70 | 120 | |
| Ho | 165 | NoGas | 3463560 | 1.79 | 2965292 | 116.80 | 70 | 120 | |

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
HW111214-02

Lab Name: A.P.P.L. INC.
Contract: Parsons
ARF No.: 74924
SDG: 74924

Analysis Date: 12/03/14
Concentration Units: ug/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Lead (Pb) | 75-125 | 257.50762 | | 0.665118 | | 250.000 | 103 | | |

Comments:
12/03/14 20:18 AZ07203W11
12/03/14 20:36 AZ07203W11-A

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ07203W11-A |
| Data File Name | 038SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T20:36:43-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 44.745 | 49.717 | 2.82 | 59394 | 2.27 | 10000 | |
| B | 11 | 45 | NoGas | 307.652 | 341.836 | 1.39 | 224136 | 1.42 | 10000 | |
| Na | 23 | 45 | He | 54119.135 | 60132.372 | 1.00 | 53720029 | 0.32 | 1000000 | |
| Mg | 24 | 45 | He | 41708.251 | 46342.501 | 0.79 | 23949336 | 0.42 | 1000000 | |
| Al | 27 | 45 | He | 1935.940 | 2151.044 | 0.60 | 661386 | 1.28 | 1000000 | |
| K | 39 | 45 | He | 6803.617 | 7559.574 | 0.51 | 5477019 | 1.29 | 500000 | |
| Ca | 44 | 45 | He | 50109.049 | 55676.722 | 0.75 | 2000301 | 1.09 | 500000 | |
| Ti | 47 | 45 | He | 247.961 | 275.512 | 2.00 | 59243 | 1.59 | 10000 | |
| V | 51 | 45 | He | 280.090 | 311.211 | 0.91 | 1747509 | 1.48 | 10000 | |
| Cr | 52 | 45 | He | 259.062 | 287.847 | 1.06 | 1867786 | 2.09 | 10000 | |
| Mn | 55 | 45 | He | 281.253 | 312.504 | 0.47 | 1621681 | 1.31 | 50000 | |
| Fe | 56 | 45 | He | 1057.181 | 1174.646 | 1.14 | 7667445 | 0.10 | 1000000 | |
| Co | 59 | 45 | He | 251.860 | 279.844 | 1.97 | 2753860 | 1.71 | 10000 | |
| Ni | 60 | 45 | He | 244.416 | 271.573 | 0.62 | 688452 | 0.71 | 10000 | |
| Cu | 63 | 45 | He | 244.481 | 271.645 | 1.58 | 1887223 | 1.78 | 10000 | |
| Zn | 66 | 115 | He | 523.359 | 581.510 | 0.31 | 871136 | 0.50 | 50000 | |
| As | 75 | 115 | He | 255.841 | 284.268 | 0.27 | 346580 | 1.03 | 2000 | |
| Se | 78 | 72 | H2 | 226.544 | 251.715 | 1.03 | 62180 | 1.73 | 10000 | |
| Se | 78 | 115 | He | 245.498 | 272.776 | 1.33 | 28895 | 0.58 | 10000 | |
| Sr | 88 | 115 | NoGas | 415.136 | 461.262 | 2.14 | 16296406 | 1.41 | 50000 | |
| Mo | 95 | 115 | NoGas | 271.282 | 301.424 | 2.93 | 2129120 | 0.96 | 10000 | |
| Ag | 107 | 115 | NoGas | 46.868 | 52.075 | 22.77 | 1048981 | 22.02 | 5000 | |
| Cd | 111 | 115 | He | 46.869 | 52.076 | 0.34 | 133870 | 0.92 | 10000 | |
| Sn | 118 | 115 | He | 263.081 | 292.312 | 1.31 | 1808571 | 2.02 | 10000 | |
| Sn | 118 | 115 | NoGas | 260.724 | 289.693 | 1.70 | 3480734 | 0.36 | 10000 | |
| Sb | 121 | 115 | NoGas | 272.233 | 302.482 | 1.46 | 5152975 | 1.01 | 10000 | |
| Ba | 137 | 165 | NoGas | 274.705 | 305.227 | 2.37 | 2030984 | 1.70 | 50000 | |
| Tl | 205 | 165 | NoGas | 229.909 | 255.454 | 0.57 | 12736476 | 0.46 | 5000 | |
| Pb | 208 | 165 | NoGas | 231.757 | 257.508 | 0.49 | 17700998 | 0.29 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 34967 | 3.50 | 29515 | 118.47 | 70 | 120 | |
| Sc | 45 | H2 | 150639 | 1.11 | 120885 | 124.61 | 70 | 120 | ISTD Failed |
| Sc | 45 | He | 113930 | 1.04 | 90842 | 125.41 | 70 | 120 | ISTD Failed |
| Sc | 45 | NoGas | 760191 | 0.83 | 581580 | 130.71 | 70 | 120 | ISTD Failed |
| Ge | 72 | H2 | 67330 | 0.77 | 55430 | 121.47 | 70 | 120 | ISTD Failed |
| Ge | 72 | He | 85349 | 0.92 | 65257 | 130.79 | 70 | 120 | ISTD Failed |
| Ge | 72 | NoGas | 257666 | 0.50 | 205384 | 125.46 | 70 | 120 | ISTD Failed |
| In | 115 | H2 | 1750067 | 1.19 | 1539397 | 113.69 | 70 | 120 | |
| In | 115 | He | 958773 | 0.76 | 837505 | 114.48 | 70 | 120 | |
| In | 115 | NoGas | 2209194 | 2.00 | 1847093 | 119.60 | 70 | 120 | |
| Tb | 159 | H2 | 3638145 | 0.73 | 3319426 | 109.60 | 70 | 120 | |
| Tb | 159 | He | 2363462 | 1.51 | 2158455 | 109.50 | 70 | 120 | |
| Tb | 159 | NoGas | 3548299 | 1.24 | 3040386 | 116.71 | 70 | 120 | |
| Ho | 165 | H2 | 3561619 | 0.32 | 3213372 | 110.84 | 70 | 120 | |
| Ho | 165 | He | 2343243 | 1.03 | 2137675 | 109.62 | 70 | 120 | |
| Ho | 165 | NoGas | 3501524 | 0.79 | 2965292 | 118.08 | 70 | 120 | |

# Calibration Blank Report

**Sample Table**

| | |
|---|---|
| Sample Name | Calibration Blank |
| Data File Name | 002CALB.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:00:02-08:00 |
| Sample Type | CalBlk |
| Level | 1 |
| Dilution | 1 |
| Comment | |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD |
|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 67 | 45.83 |
| B | 11 | 45 | NoGas | 1387 | 9.02 |
| Na | 23 | 45 | He | 158206 | 0.71 |
| Mg | 24 | 45 | He | 2087 | 9.91 |
| Al | 27 | 45 | He | 1479 | 6.19 |
| K | 39 | 45 | He | 91492 | 3.37 |
| Ca | 44 | 45 | He | 1515 | 3.56 |
| Ti | 47 | 45 | He | 46 | 15.23 |
| V | 51 | 45 | He | 608 | 3.57 |
| Cr | 52 | 45 | He | 4202 | 8.12 |
| Mn | 55 | 45 | He | 1643 | 7.24 |
| Fe | 56 | 45 | He | 38915 | 6.54 |
| Co | 59 | 45 | He | 722 | 22.25 |
| Ni | 60 | 45 | He | 488 | 8.54 |
| Cu | 63 | 45 | He | 2157 | 3.48 |
| Zn | 66 | 115 | He | 1762 | 6.02 |
| As | 75 | 115 | He | 83 | 32.53 |
| Se | 78 | 72 | H2 | 13 | 53.31 |
| Se | 78 | 115 | He | 164 | 6.87 |
| Sr | 88 | 115 | NoGas | 703 | 8.21 |
| Mo | 95 | 115 | NoGas | 10660 | 2.51 |
| Ag | 107 | 115 | NoGas | 60 | 66.67 |
| Cd | 111 | 115 | He | 8 | 66.14 |
| Sn | 118 | 115 | He | 1012 | 2.47 |
| Sn | 118 | 115 | NoGas | 1955 | 6.01 |
| Sb | 121 | 115 | NoGas | 3310 | 6.13 |
| Ba | 137 | 165 | NoGas | 327 | 17.94 |
| Tl | 205 | 165 | NoGas | 960 | 4.54 |
| [Pb] | 206 | 165 | NoGas | 2664 | 6.72 |
| [Pb] | 207 | 165 | NoGas | 2337 | 4.73 |
| Pb | 208 | 165 | NoGas | 10535 | 2.76 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD |
|---|---|---|---|---|
| Li | 6 | NoGas | 29515 | 2.34 |
| Sc | 45 | H2 | 120885 | 0.30 |
| Sc | 45 | He | 90842 | 0.25 |
| Sc | 45 | NoGas | 581580 | 0.85 |
| Ge | 72 | H2 | 55430 | 0.88 |
| Ge | 72 | He | 65257 | 1.18 |
| Ge | 72 | NoGas | 205384 | 1.59 |
| In | 115 | H2 | 1539397 | 0.86 |
| In | 115 | He | 837505 | 0.91 |
| In | 115 | NoGas | 1847093 | 2.13 |
| Tb | 159 | H2 | 3319426 | 1.01 |
| Tb | 159 | He | 2158455 | 0.43 |
| Tb | 159 | NoGas | 3040386 | 0.36 |
| Ho | 165 | H2 | 3213372 | 0.78 |
| Ho | 165 | He | 2137675 | 0.93 |
| Ho | 165 | NoGas | 2965292 | 2.60 |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 1 |
| Data File Name | 003CALS.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:06:01-08:00 |
| Sample Type | CalStd |
| Level | 2 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 40 | 25.00 | 0.9999 |
| B | 11 | 45 | NoGas | 1280 | 15.09 | 1.0000 |
| Na | 23 | 45 | He | 153706 | 0.37 | 0.9999 |
| Mg | 24 | 45 | He | 613 | 10.15 | 0.9999 |
| Al | 27 | 45 | He | 638 | 5.29 | 1.0000 |
| K | 39 | 45 | He | 90949 | 4.06 | 0.9999 |
| Ca | 44 | 45 | He | 847 | 10.72 | 1.0000 |
| Ti | 47 | 45 | He | 29 | 35.25 | 1.0000 |
| V | 51 | 45 | He | 648 | 3.35 | 1.0000 |
| Cr | 52 | 45 | He | 3916 | 8.46 | 1.0000 |
| Mn | 55 | 45 | He | 1077 | 11.07 | 1.0000 |
| Fe | 56 | 45 | He | 17804 | 3.39 | 1.0000 |
| Co | 59 | 45 | He | 147 | 36.57 | 1.0000 |
| Ni | 60 | 45 | He | 287 | 9.30 | 1.0000 |
| Cu | 63 | 45 | He | 1806 | 1.40 | 1.0000 |
| Zn | 66 | 115 | He | 918 | 14.11 | 1.0000 |
| As | 75 | 115 | He | 87 | 9.95 | 1.0000 |
| Se | 78 | 72 | H2 | 9 | 11.62 | 1.0000 |
| Se | 78 | 115 | He | 183 | 7.91 | 1.0000 |
| Sr | 88 | 115 | NoGas | 530 | 37.15 | 1.0000 |
| Mo | 95 | 115 | NoGas | 5591 | 8.24 | 0.9999 |
| Ag | 107 | 115 | NoGas | 60 | 28.87 | 1.0000 |
| Cd | 111 | 115 | He | 10 | 80.00 | 1.0000 |
| Sn | 118 | 115 | He | 680 | 11.10 | 1.0000 |
| Sn | 118 | 115 | NoGas | 1385 | 1.81 | 1.0000 |
| Sb | 121 | 115 | NoGas | 2710 | 4.11 | 0.9996 |
| Ba | 137 | 165 | NoGas | 343 | 12.13 | 1.0000 |
| Ti | 205 | 165 | NoGas | 580 | 19.43 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 2150 | 4.58 | |
| [Pb] | 207 | 165 | NoGas | 1807 | 11.69 | |
| Pb | 208 | 165 | NoGas | 8411 | 1.56 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 30097 | 1.94 | 29515 | 101.97 | 70 | 120 | |
| Sc | 45 | H2 | 121858 | 0.86 | 120885 | 100.80 | 70 | 120 | |
| Sc | 45 | He | 91685 | 0.67 | 90842 | 100.93 | 70 | 120 | |
| Sc | 45 | NoGas | 576851 | 1.14 | 581580 | 99.19 | 70 | 120 | |
| Ge | 72 | H2 | 56229 | 1.02 | 55430 | 101.44 | 70 | 120 | |
| Ge | 72 | He | 66298 | 1.09 | 65257 | 101.59 | 70 | 120 | |
| Ge | 72 | NoGas | 205740 | 0.85 | 205384 | 100.17 | 70 | 120 | |
| In | 115 | H2 | 1505222 | 2.06 | 1539397 | 97.78 | 70 | 120 | |
| In | 115 | He | 839414 | 0.10 | 837505 | 100.23 | 70 | 120 | |
| In | 115 | NoGas | 1842451 | 1.26 | 1847093 | 99.75 | 70 | 120 | |
| Tb | 159 | H2 | 3325515 | 1.23 | 3319426 | 100.18 | 70 | 120 | |
| Tb | 159 | He | 2173909 | 2.02 | 2158455 | 100.72 | 70 | 120 | |
| Tb | 159 | NoGas | 3047784 | 1.89 | 3040386 | 100.24 | 70 | 120 | |
| Ho | 165 | H2 | 3207505 | 1.45 | 3213372 | 99.82 | 70 | 120 | |
| Ho | 165 | He | 2147524 | 0.63 | 2137675 | 100.46 | 70 | 120 | |
| Ho | 165 | NoGas | 2980813 | 1.49 | 2965292 | 100.52 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 2 |
| Data File Name | 004CALS.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:12:02-08:00 |
| Sample Type | CalStd |
| Level | 3 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 1080 | 10.52 | 0.9999 |
| B | 11 | 45 | NoGas | 1964 | 12.08 | 1.0000 |
| Na | 23 | 45 | He | 173259 | 0.29 | 0.9999 |
| Mg | 24 | 45 | He | 24331 | 3.27 | 0.9999 |
| Al | 27 | 45 | He | 8524 | 4.82 | 1.0000 |
| K | 39 | 45 | He | 111410 | 3.82 | 0.9999 |
| Ca | 44 | 45 | He | 2601 | 4.04 | 1.0000 |
| Ti | 47 | 45 | He | 234 | 2.17 | 1.0000 |
| V | 51 | 45 | He | 6437 | 3.19 | 1.0000 |
| Cr | 52 | 45 | He | 10036 | 1.82 | 1.0000 |
| Mn | 55 | 45 | He | 6192 | 1.78 | 1.0000 |
| Fe | 56 | 45 | He | 149528 | 1.19 | 1.0000 |
| Co | 59 | 45 | He | 9983 | 1.35 | 1.0000 |
| Ni | 60 | 45 | He | 2781 | 3.17 | 1.0000 |
| Cu | 63 | 45 | He | 8935 | 1.88 | 1.0000 |
| Zn | 66 | 115 | He | 2424 | 3.72 | 1.0000 |
| As | 75 | 115 | He | 1337 | 1.68 | 1.0000 |
| Se | 78 | 72 | H2 | 257 | 6.50 | 1.0000 |
| Se | 78 | 115 | He | 279 | 0.95 | 1.0000 |
| Sr | 88 | 115 | NoGas | 34748 | 2.46 | 1.0000 |
| Mo | 95 | 115 | NoGas | 9970 | 5.67 | 0.9999 |
| Ag | 107 | 115 | NoGas | 10037 | 2.79 | 1.0000 |
| Cd | 111 | 115 | He | 2633 | 1.25 | 1.0000 |
| Sn | 118 | 115 | He | 7049 | 2.76 | 1.0000 |
| Sn | 118 | 115 | NoGas | 12805 | 3.75 | 1.0000 |
| Sb | 121 | 115 | NoGas | 16602 | 2.24 | 0.9996 |
| Ba | 137 | 165 | NoGas | 6878 | 6.92 | 1.0000 |
| Tl | 205 | 165 | NoGas | 51058 | 1.23 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 19983 | 3.96 | |
| [Pb] | 207 | 165 | NoGas | 16933 | 3.82 | |
| Pb | 208 | 165 | NoGas | 78160 | 0.93 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 29349 | 1.90 | 29515 | 99.44 | 70 | 120 | |
| Sc | 45 | H2 | 125279 | 0.26 | 120885 | 103.63 | 70 | 120 | |
| Sc | 45 | He | 93024 | 1.28 | 90842 | 102.40 | 70 | 120 | |
| Sc | 45 | NoGas | 589414 | 0.55 | 581580 | 101.35 | 70 | 120 | |
| Ge | 72 | H2 | 56760 | 0.44 | 55430 | 102.40 | 70 | 120 | |
| Ge | 72 | He | 66302 | 1.19 | 65257 | 101.60 | 70 | 120 | |
| Ge | 72 | NoGas | 207666 | 1.50 | 205384 | 101.11 | 70 | 120 | |
| In | 115 | H2 | 1546963 | 0.89 | 1539397 | 100.49 | 70 | 120 | |
| In | 115 | He | 848104 | 0.45 | 837505 | 101.27 | 70 | 120 | |
| In | 115 | NoGas | 1880155 | 0.25 | 1847093 | 101.79 | 70 | 120 | |
| Tb | 159 | H2 | 3345941 | 0.75 | 3319426 | 100.80 | 70 | 120 | |
| Tb | 159 | He | 2218114 | 0.89 | 2158455 | 102.76 | 70 | 120 | |
| Tb | 159 | NoGas | 3064065 | 0.49 | 3040386 | 100.78 | 70 | 120 | |
| Ho | 165 | H2 | 3286409 | 1.82 | 3213372 | 102.27 | 70 | 120 | |
| Ho | 165 | He | 2148946 | 0.21 | 2137675 | 100.53 | 70 | 120 | |
| Ho | 165 | NoGas | 3020874 | 1.79 | 2965292 | 101.87 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 3 |
| Data File Name | 005CALS.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:18:02-08:00 |
| Sample Type | CalStd |
| Level | 4 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 51344 | 1.51 | 0.9999 |
| B | 11 | 45 | NoGas | 29724 | 1.71 | 1.0000 |
| Na | 23 | 45 | He | 1233156 | 0.59 | 0.9999 |
| Mg | 24 | 45 | He | 1252048 | 3.56 | 0.9999 |
| Al | 27 | 45 | He | 293926 | 0.55 | 1.0000 |
| K | 39 | 45 | He | 749035 | 0.57 | 0.9999 |
| Ca | 44 | 45 | He | 87051 | 0.23 | 1.0000 |
| Ti | 47 | 45 | He | 10262 | 1.70 | 1.0000 |
| V | 51 | 45 | He | 266247 | 1.22 | 1.0000 |
| Cr | 52 | 45 | He | 309894 | 0.26 | 1.0000 |
| Mn | 55 | 45 | He | 245774 | 0.55 | 1.0000 |
| Fe | 56 | 45 | He | 6181060 | 0.49 | 1.0000 |
| Co | 59 | 45 | He | 467359 | 0.63 | 1.0000 |
| Ni | 60 | 45 | He | 120887 | 0.79 | 1.0000 |
| Cu | 63 | 45 | He | 333381 | 0.75 | 1.0000 |
| Zn | 66 | 115 | He | 75449 | 0.64 | 1.0000 |
| As | 75 | 115 | He | 59532 | 1.24 | 1.0000 |
| Se | 78 | 72 | H2 | 11613 | 1.54 | 1.0000 |
| Se | 78 | 115 | He | 5343 | 1.44 | 1.0000 |
| Sr | 88 | 115 | NoGas | 1683946 | 1.68 | 1.0000 |
| Mo | 95 | 115 | NoGas | 338970 | 2.51 | 0.9999 |
| Ag | 107 | 115 | NoGas | 482464 | 0.60 | 1.0000 |
| Cd | 111 | 115 | He | 125860 | 1.01 | 1.0000 |
| Sn | 118 | 115 | He | 304555 | 0.46 | 1.0000 |
| Sn | 118 | 115 | NoGas | 571196 | 0.45 | 1.0000 |
| Sb | 121 | 115 | NoGas | 774758 | 0.32 | 0.9996 |
| Ba | 137 | 165 | NoGas | 319799 | 0.61 | 1.0000 |
| Tl | 205 | 165 | NoGas | 2437711 | 1.25 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 808653 | 0.42 | |
| [Pb] | 207 | 165 | NoGas | 708976 | 0.25 | |
| Pb | 208 | 165 | NoGas | 3294837 | 0.45 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 30266 | 1.31 | 29515 | 102.55 | 70 | 120 | |
| Sc | 45 | H2 | 125820 | 1.68 | 120885 | 104.08 | 70 | 120 | |
| Sc | 45 | He | 96669 | 0.96 | 90842 | 106.41 | 70 | 120 | |
| Sc | 45 | NoGas | 604658 | 0.69 | 581580 | 103.97 | 70 | 120 | |
| Ge | 72 | H2 | 57066 | 1.19 | 55430 | 102.95 | 70 | 120 | |
| Ge | 72 | He | 67868 | 1.16 | 65257 | 104.00 | 70 | 120 | |
| Ge | 72 | NoGas | 210536 | 1.00 | 205384 | 102.51 | 70 | 120 | |
| In | 115 | H2 | 1511782 | 3.17 | 1539397 | 98.21 | 70 | 120 | |
| In | 115 | He | 854937 | 0.04 | 837505 | 102.08 | 70 | 120 | |
| In | 115 | NoGas | 1886682 | 0.45 | 1847093 | 102.14 | 70 | 120 | |
| Tb | 159 | H2 | 3348403 | 1.74 | 3319426 | 100.87 | 70 | 120 | |
| Tb | 159 | He | 2230718 | 3.58 | 2158455 | 103.35 | 70 | 120 | |
| Tb | 159 | NoGas | 3151485 | 0.83 | 3040386 | 103.65 | 70 | 120 | |
| Ho | 165 | H2 | 3217728 | 1.10 | 3213372 | 100.14 | 70 | 120 | |
| Ho | 165 | He | 2189062 | 2.28 | 2137675 | 102.40 | 70 | 120 | |
| Ho | 165 | NoGas | 3041926 | 0.87 | 2965292 | 102.58 | 70 | 120 | |

# Calibration Standard Report

**Sample Table**

| | |
|---|---|
| Sample Name | Standard 4 |
| Data File Name | 006CALS.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:24:02-08:00 |
| Sample Type | CalStd |
| Level | 5 |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | CPS | %RSD | Cal Coef |
|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 109065 | 0.61 | 0.9999 |
| B | 11 | 45 | NoGas | 60731 | 1.28 | 1.0000 |
| Na | 23 | 45 | He | 2328856 | 0.52 | 0.9999 |
| Mg | 24 | 45 | He | 2497805 | 0.98 | 0.9999 |
| Al | 27 | 45 | He | 596043 | 0.86 | 1.0000 |
| K | 39 | 45 | He | 1488257 | 0.57 | 0.9999 |
| Ca | 44 | 45 | He | 175702 | 0.98 | 1.0000 |
| Ti | 47 | 45 | He | 20891 | 2.18 | 1.0000 |
| V | 51 | 45 | He | 545754 | 0.48 | 1.0000 |
| Cr | 52 | 45 | He | 633363 | 0.37 | 1.0000 |
| Mn | 55 | 45 | He | 505777 | 0.82 | 1.0000 |
| Fe | 56 | 45 | He | 12641654 | 1.30 | 1.0000 |
| Co | 59 | 45 | He | 955728 | 0.35 | 1.0000 |
| Ni | 60 | 45 | He | 246267 | 0.36 | 1.0000 |
| Cu | 63 | 45 | He | 674694 | 0.47 | 1.0000 |
| Zn | 66 | 115 | He | 150370 | 0.23 | 1.0000 |
| As | 75 | 115 | He | 121543 | 0.36 | 1.0000 |
| Se | 78 | 72 | H2 | 23789 | 0.27 | 1.0000 |
| Se | 78 | 115 | He | 10633 | 1.12 | 1.0000 |
| Sr | 88 | 115 | NoGas | 3416186 | 0.49 | 1.0000 |
| Mo | 95 | 115 | NoGas | 693407 | 0.82 | 0.9999 |
| Ag | 107 | 115 | NoGas | 974268 | 0.63 | 1.0000 |
| Cd | 111 | 115 | He | 255913 | 0.38 | 1.0000 |
| Sn | 118 | 115 | He | 616219 | 1.52 | 1.0000 |
| Sn | 118 | 115 | NoGas | 1164371 | 0.47 | 1.0000 |
| Sb | 121 | 115 | NoGas | 1669235 | 1.19 | 0.9996 |
| Ba | 137 | 165 | NoGas | 652918 | 1.12 | 1.0000 |
| Tl | 205 | 165 | NoGas | 4869461 | 0.22 | 1.0000 |
| [Pb] | 206 | 165 | NoGas | 1727484 | 0.81 | |
| [Pb] | 207 | 165 | NoGas | 1443343 | 0.68 | |
| Pb | 208 | 165 | NoGas | 6756419 | 0.98 | 1.0000 |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 33285 | 2.18 | 29515 | 112.77 | 70 | 120 | |
| Sc | 45 | H2 | 129826 | 0.83 | 120885 | 107.40 | 70 | 120 | |
| Sc | 45 | He | 99681 | 0.03 | 90842 | 109.73 | 70 | 120 | |
| Sc | 45 | NoGas | 620812 | 0.70 | 581580 | 106.75 | 70 | 120 | |
| Ge | 72 | H2 | 58307 | 0.88 | 55430 | 105.19 | 70 | 120 | |
| Ge | 72 | He | 69289 | 0.64 | 65257 | 106.18 | 70 | 120 | |
| Ge | 72 | NoGas | 216663 | 1.12 | 205384 | 105.49 | 70 | 120 | |
| In | 115 | H2 | 1580861 | 1.32 | 1539397 | 102.69 | 70 | 120 | |
| In | 115 | He | 856608 | 0.98 | 837505 | 102.28 | 70 | 120 | |
| In | 115 | NoGas | 1923927 | 1.05 | 1847093 | 104.16 | 70 | 120 | |
| Tb | 159 | H2 | 3336767 | 0.11 | 3319426 | 100.52 | 70 | 120 | |
| Tb | 159 | He | 2236933 | 0.79 | 2158455 | 103.64 | 70 | 120 | |
| Tb | 159 | NoGas | 3194327 | 0.32 | 3040386 | 105.06 | 70 | 120 | |
| Ho | 165 | H2 | 3273346 | 1.06 | 3213372 | 101.87 | 70 | 120 | |
| Ho | 165 | He | 2186659 | 1.18 | 2137675 | 102.29 | 70 | 120 | |
| Ho | 165 | NoGas | 3087604 | 1.33 | 2965292 | 104.12 | 70 | 120 | |

# Initial Calibration Verification (ICV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICV |
| Data File Name | 007_ICV.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:30:03-08:00 |
| Sample Type | ICV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 96.291 | 1.866 | 105496 | 1.99 | 100 | 96.3 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 94.709 | 1.624 | 58027 | 1.71 | 100 | 94.7 | 89.6 | 110.4 | |
| Na | 23 | 45 | He | 2332.050 | 2.093 | 2247749 | 1.98 | 2500 | 93.3 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2449.652 | 0.550 | 1264508 | 0.77 | 2500 | 98.0 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 2424.468 | 0.694 | 742826 | 0.50 | 2500 | 97.0 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 2401.902 | 1.361 | 1801704 | 1.46 | 2500 | 96.1 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2559.324 | 1.089 | 93300 | 1.44 | 2500 | 102.4 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 96.893 | 2.286 | 20807 | 2.64 | 100 | 96.9 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 97.320 | 0.623 | 545316 | 1.19 | 100 | 97.3 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 94.576 | 1.002 | 614817 | 0.27 | 100 | 94.6 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 94.724 | 1.102 | 491315 | 0.89 | 100 | 94.7 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 2405.385 | 1.188 | 15599388 | 0.22 | 2500 | 96.2 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 95.429 | 1.127 | 936849 | 0.10 | 100 | 95.4 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 96.457 | 1.113 | 244132 | 0.14 | 100 | 96.5 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 95.513 | 1.252 | 663064 | 0.21 | 100 | 95.5 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 96.258 | 1.120 | 149285 | 1.07 | 100 | 96.3 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 86.455 | 0.314 | 108069 | 0.55 | 100 | 86.5 | 89.6 | 110.4 | >+\- 10% |
| Se | 78 | 72 | H2 | 93.880 | 2.388 | 23178 | 1.98 | 100 | 93.9 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 94.993 | 0.986 | 10418 | 0.67 | 100 | 95.0 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 95.780 | 2.113 | 3325860 | 1.03 | 100 | 95.8 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 98.661 | 0.902 | 692209 | 1.29 | 100 | 98.7 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 50.040 | 0.873 | 992119 | 1.29 | 50 | 100.1 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 94.851 | 0.505 | 249848 | 0.65 | 100 | 94.9 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.070 | 0.400 | 311959 | 0.59 | 100 | 49.1 | 89.6 | 110.4 | >+\- 10% |
| Sn | 118 | 115 | NoGas | 49.884 | 1.508 | 590711 | 1.17 | 100 | 49.9 | 89.6 | 110.4 | >+\- 10% |
| Sb | 121 | 115 | NoGas | 110.852 | 1.406 | 1857904 | 1.41 | 100 | 110.9 | 89.6 | 110.4 | >+\- 10% |
| Ba | 137 | 165 | NoGas | 96.296 | 0.163 | 639542 | 0.82 | 100 | 96.3 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 95.483 | 0.787 | 4750232 | 1.41 | 100 | 95.5 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 95.535 | 0.326 | 6558335 | 0.79 | 100 | 95.5 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 32781 | 4.37 | 29515 | 111.07 | 70 | 120 | |
| Sc | 45 | H2 | 134047 | 1.33 | 120885 | 110.89 | 70 | 120 | |
| Sc | 45 | He | 102238 | 1.05 | 90842 | 112.54 | 70 | 120 | |
| Sc | 45 | NoGas | 627860 | 0.13 | 581580 | 107.96 | 70 | 120 | |
| Ge | 72 | H2 | 60549 | 0.49 | 55430 | 109.23 | 70 | 120 | |
| Ge | 72 | He | 70252 | 2.41 | 65257 | 107.65 | 70 | 120 | |
| Ge | 72 | NoGas | 217453 | 0.84 | 205384 | 105.88 | 70 | 120 | |
| In | 115 | H2 | 1642166 | 0.35 | 1539397 | 106.68 | 70 | 120 | |
| In | 115 | He | 884235 | 0.35 | 837505 | 105.58 | 70 | 120 | |
| In | 115 | NoGas | 1953915 | 2.13 | 1847093 | 105.78 | 70 | 120 | |
| Tb | 159 | H2 | 3483232 | 0.69 | 3319426 | 104.93 | 70 | 120 | |
| Tb | 159 | He | 2294063 | 0.64 | 2158455 | 106.28 | 70 | 120 | |
| Tb | 159 | NoGas | 3242313 | 1.16 | 3040386 | 106.64 | 70 | 120 | |
| Ho | 165 | H2 | 3372189 | 1.15 | 3213372 | 104.94 | 70 | 120 | |
| Ho | 165 | He | 2211819 | 2.35 | 2137675 | 103.47 | 70 | 120 | |
| Ho | 165 | NoGas | 3143986 | 0.94 | 2965292 | 106.03 | 70 | 120 | |

# Initial Calibration Verification (ICV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICV As 50 ppb |
| Data File Name | 008_ICV.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:36:04-08:00 |
| Sample Type | ICV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 50.200 | 1.717 | 55976 | 1.47 | 100 | 50.2 | 89.6 | 110.4 | >+\- 10% |
| B | 11 | 45 | NoGas | 52.470 | 2.417 | 33377 | 1.90 | 100 | 52.5 | 89.6 | 110.4 | >+\- 10% |
| Na | 23 | 45 | He | 1349.401 | 0.786 | 1364687 | 0.15 | 2500 | 54.0 | 89.6 | 110.4 | >+\- 10% |
| Mg | 24 | 45 | He | -0.491 | -27.577 | 2079 | 4.15 | 2500 | 0.0 | 89.6 | 110.4 | >+\- 10% |
| Al | 27 | 45 | He | -2.675 | -8.530 | 840 | 8.59 | 2500 | -0.1 | 89.6 | 110.4 | >+\- 10% |
| K | 39 | 45 | He | 987.272 | 1.051 | 794820 | 0.49 | 2500 | 39.5 | 89.6 | 110.4 | >+\- 10% |
| Ca | 44 | 45 | He | 190.266 | 2.568 | 8445 | 1.26 | 2500 | 7.6 | 89.6 | 110.4 | >+\- 10% |
| Ti | 47 | 45 | He | -0.103 | -38.848 | 29 | 29.04 | 100 | -0.1 | 89.6 | 110.4 | >+\- 10% |
| V | 51 | 45 | He | 50.475 | 1.070 | 280892 | 0.52 | 100 | 50.5 | 89.6 | 110.4 | >+\- 10% |
| Cr | 52 | 45 | He | 50.724 | 1.155 | 329298 | 0.42 | 100 | 50.7 | 89.6 | 110.4 | >+\- 10% |
| Mn | 55 | 45 | He | 51.175 | 0.225 | 264179 | 0.74 | 100 | 51.2 | 89.6 | 110.4 | >+\- 10% |
| Fe | 56 | 45 | He | -3.187 | -0.466 | 23000 | 0.54 | 2500 | -0.1 | 89.6 | 110.4 | >+\- 10% |
| Co | 59 | 45 | He | 52.961 | 0.227 | 516191 | 0.65 | 100 | 53.0 | 89.6 | 110.4 | >+\- 10% |
| Ni | 60 | 45 | He | 53.298 | 1.697 | 134067 | 1.13 | 100 | 53.3 | 89.6 | 110.4 | >+\- 10% |
| Cu | 63 | 45 | He | 53.436 | 1.476 | 369070 | 0.68 | 100 | 53.4 | 89.6 | 110.4 | >+\- 10% |
| Zn | 66 | 115 | He | 56.351 | 1.640 | 89215 | 1.63 | 100 | 56.4 | 89.6 | 110.4 | >+\- 10% |
| As | 75 | 115 | He | 50.197 | 0.314 | 63530 | 0.32 | 100 | 50.2 | 89.6 | 110.4 | >+\- 10% |
| Se | 78 | 72 | H2 | 49.234 | 2.198 | 12213 | 1.54 | 100 | 49.2 | 89.6 | 110.4 | >+\- 10% |
| Se | 78 | 115 | He | 50.880 | 1.812 | 5728 | 1.74 | 100 | 50.9 | 89.6 | 110.4 | >+\- 10% |
| Sr | 88 | 115 | NoGas | 50.311 | 1.028 | 1794657 | 0.70 | 100 | 50.3 | 89.6 | 110.4 | >+\- 10% |
| Mo | 95 | 115 | NoGas | -0.965 | -2.374 | 4744 | 4.47 | 100 | -1.0 | 89.6 | 110.4 | >+\- 10% |
| Ag | 107 | 115 | NoGas | 0.006 | 25.676 | 187 | 16.37 | 50 | 0.0 | 89.6 | 110.4 | >+\- 10% |
| Cd | 111 | 115 | He | 50.647 | 0.628 | 135002 | 0.76 | 100 | 50.6 | 89.6 | 110.4 | >+\- 10% |
| Sn | 118 | 115 | He | 0.176 | 1.628 | 2210 | 0.69 | 100 | 0.2 | 89.6 | 110.4 | >+\- 10% |
| Sn | 118 | 115 | NoGas | 0.143 | 5.660 | 3857 | 1.56 | 100 | 0.1 | 89.6 | 110.4 | >+\- 10% |
| Sb | 121 | 115 | NoGas | 0.345 | 2.275 | 9523 | 1.11 | 100 | 0.3 | 89.6 | 110.4 | >+\- 10% |
| Ba | 137 | 165 | NoGas | 50.802 | 1.337 | 339927 | 1.06 | 100 | 50.8 | 89.6 | 110.4 | >+\- 10% |
| Tl | 205 | 165 | NoGas | 52.162 | 1.372 | 2613585 | 0.90 | 100 | 52.2 | 89.6 | 110.4 | >+\- 10% |
| Pb | 208 | 165 | NoGas | 50.715 | 1.009 | 3511155 | 0.41 | 100 | 50.7 | 89.6 | 110.4 | >+\- 10% |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 34499 | 0.50 | 29515 | 116.89 | 70 | 120 | |
| Sc | 45 | H2 | 134843 | 0.68 | 120885 | 111.55 | 70 | 120 | |
| Sc | 45 | He | 101424 | 0.83 | 90842 | 111.65 | 70 | 120 | |
| Sc | 45 | NoGas | 638650 | 0.49 | 581580 | 109.81 | 70 | 120 | |
| Ge | 72 | H2 | 60806 | 0.67 | 55430 | 109.70 | 70 | 120 | |
| Ge | 72 | He | 71177 | 0.73 | 65257 | 109.07 | 70 | 120 | |
| Ge | 72 | NoGas | 221474 | 1.77 | 205384 | 107.83 | 70 | 120 | |
| In | 115 | H2 | 1685418 | 0.75 | 1539397 | 109.49 | 70 | 120 | |
| In | 115 | He | 894756 | 0.24 | 837505 | 106.84 | 70 | 120 | |
| In | 115 | NoGas | 2006403 | 1.06 | 1847093 | 108.62 | 70 | 120 | |
| Tb | 159 | H2 | 3471066 | 0.35 | 3319426 | 104.57 | 70 | 120 | |
| Tb | 159 | He | 2297428 | 1.75 | 2158455 | 106.44 | 70 | 120 | |
| Tb | 159 | NoGas | 3231757 | 1.93 | 3040386 | 106.29 | 70 | 120 | |
| Ho | 165 | H2 | 3361642 | 1.42 | 3213372 | 104.61 | 70 | 120 | |
| Ho | 165 | He | 2243524 | 0.91 | 2137675 | 104.95 | 70 | 120 | |
| Ho | 165 | NoGas | 3166084 | 0.59 | 2965292 | 106.77 | 70 | 120 | |

# Initial Calibration Blank (ICB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICB |
| Data File Name | 009SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T17:42:07-08:00 |
| Sample Type | ICB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.050 | -28.5 | 17 | 91.7 | 0.1 | |
| B | 11 | 45 | NoGas | 1.840 | 4.3 | 2550 | 1.4 | 8 | |
| Na | 23 | 45 | He | -30.974 | -4.9 | 143007 | 0.4 | 50 | |
| Mg | 24 | 45 | He | -2.211 | -3.3 | 1149 | 3.9 | 20 | |
| Al | 27 | 45 | He | -2.816 | -0.8 | 763 | 1.2 | 10 | |
| K | 39 | 45 | He | 4.326 | 137.9 | 100714 | 4.0 | 40 | |
| Ca | 44 | 45 | He | -27.304 | -4.5 | 691 | 6.6 | 150 | |
| Ti | 47 | 45 | He | -0.146 | -16.9 | 19 | 27.0 | 0.5 | |
| V | 51 | 45 | He | 0.036 | 20.5 | 843 | 4.9 | 0.4 | |
| Cr | 52 | 45 | He | -0.135 | -12.9 | 3663 | 3.7 | 0.2 | |
| Mn | 55 | 45 | He | -0.108 | -14.6 | 1228 | 6.3 | 0.3 | |
| Fe | 56 | 45 | He | -2.515 | -3.5 | 26154 | 2.9 | 30 | |
| Co | 59 | 45 | He | -0.056 | -5.2 | 252 | 9.9 | 0.4 | |
| Ni | 60 | 45 | He | -0.053 | -19.9 | 396 | 7.2 | 0.4 | |
| Cu | 63 | 45 | He | -0.098 | -16.0 | 1662 | 5.8 | 0.4 | |
| Zn | 66 | 115 | He | -0.591 | -7.0 | 942 | 6.2 | 15 | |
| As | 75 | 115 | He | 0.101 | 22.9 | 211 | 12.9 | 0.2 | |
| Se | 78 | 72 | H2 | 0.046 | 27.4 | 25 | 13.0 | 0.4 | |
| Se | 78 | 115 | He | 0.123 | 243.0 | 184 | 16.7 | 0.4 | |
| Sr | 88 | 115 | NoGas | -0.007 | -14.4 | 483 | 8.6 | 0.1 | |
| Mo | 95 | 115 | NoGas | -1.194 | -3.6 | 2990 | 8.4 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.005 | 68.9 | 153 | 39.8 | 0.1 | |
| Cd | 111 | 115 | He | 0.001 | 272.2 | 11 | 71.3 | 0.1 | |
| Sn | 118 | 115 | He | 0.016 | 111.8 | 1151 | 9.2 | 0.1 | |
| Sn | 118 | 115 | NoGas | 0.011 | 147.5 | 2162 | 9.5 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.113 | 14.0 | 5314 | 4.7 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.000 | 8871.8 | 347 | 32.8 | 0.4 | |
| Tl | 205 | 165 | NoGas | 0.033 | 9.3 | 2640 | 5.1 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.076 | -10.4 | 5974 | 8.5 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 33131 | 3.60 | 29515 | 112.25 | 70 | 120 | |
| Sc | 45 | H2 | 132725 | 1.81 | 120885 | 109.79 | 70 | 120 | |
| Sc | 45 | He | 97113 | 0.83 | 90842 | 106.90 | 70 | 120 | |
| Sc | 45 | NoGas | 616833 | 0.73 | 581580 | 106.06 | 70 | 120 | |
| Ge | 72 | H2 | 60017 | 1.27 | 55430 | 108.27 | 70 | 120 | |
| Ge | 72 | He | 70303 | 1.75 | 65257 | 107.73 | 70 | 120 | |
| Ge | 72 | NoGas | 218374 | 0.64 | 205384 | 106.32 | 70 | 120 | |
| In | 115 | H2 | 1590048 | 0.95 | 1539397 | 103.29 | 70 | 120 | |
| In | 115 | He | 871881 | 0.58 | 837505 | 104.10 | 70 | 120 | |
| In | 115 | NoGas | 1924619 | 1.27 | 1847093 | 104.20 | 70 | 120 | |
| Tb | 159 | H2 | 3418369 | 1.49 | 3319426 | 102.98 | 70 | 120 | |
| Tb | 159 | He | 2260172 | 0.89 | 2158455 | 104.71 | 70 | 120 | |
| Tb | 159 | NoGas | 3192816 | 1.01 | 3040386 | 105.01 | 70 | 120 | |
| Ho | 165 | H2 | 3343497 | 1.20 | 3213372 | 104.05 | 70 | 120 | |
| Ho | 165 | He | 2196100 | 1.98 | 2137675 | 102.73 | 70 | 120 | |
| Ho | 165 | NoGas | 3142914 | 0.65 | 2965292 | 105.99 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 014_CCV.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T18:12:16-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 49.956 | 1.587 | 55866 | 1.56 | 50 | 99.9 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 48.718 | 4.182 | 31187 | 3.51 | 50 | 97.4 | 89.6 | 110.4 | |
| Na | 23 | 45 | He | 1214.463 | 1.172 | 1265452 | 0.38 | 1250 | 97.2 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2567.735 | 0.542 | 1335492 | 0.74 | 2500 | 102.7 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 1000.679 | 1.615 | 309908 | 0.69 | 1000 | 100.1 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 953.153 | 1.440 | 782977 | 0.21 | 1000 | 95.3 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2489.906 | 2.261 | 91496 | 1.14 | 2500 | 99.6 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 49.178 | 2.774 | 10669 | 3.76 | 50 | 98.4 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 48.942 | 1.899 | 276653 | 1.33 | 50 | 97.9 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 48.802 | 2.026 | 321965 | 1.01 | 50 | 97.6 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 49.074 | 2.088 | 257357 | 0.99 | 50 | 98.1 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 992.618 | 1.134 | 6512607 | 0.58 | 1000 | 99.3 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 49.194 | 0.563 | 487068 | 0.81 | 50 | 98.4 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 49.784 | 0.829 | 127238 | 0.31 | 50 | 99.6 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 49.778 | 1.989 | 349366 | 0.96 | 50 | 99.6 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 49.828 | 1.418 | 79076 | 0.70 | 50 | 99.7 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 48.895 | 1.094 | 61863 | 0.21 | 50 | 97.8 | 89.6 | 110.4 | |
| Se | 78 | 72 | H2 | 47.742 | 1.577 | 12053 | 1.87 | 50 | 95.5 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 49.475 | 0.571 | 5573 | 0.61 | 50 | 98.9 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 48.942 | 0.900 | 1725392 | 0.34 | 50 | 97.9 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 47.197 | 0.986 | 342050 | 1.01 | 50 | 94.4 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 24.757 | 0.580 | 498209 | 0.62 | 25 | 99.0 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 48.839 | 1.300 | 130137 | 0.60 | 50 | 97.7 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 48.831 | 0.853 | 314037 | 0.47 | 50 | 97.7 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 48.817 | 1.069 | 586760 | 0.16 | 50 | 97.6 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 46.475 | 2.177 | 792560 | 1.24 | 50 | 92.9 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 49.098 | 1.993 | 327021 | 0.10 | 50 | 98.2 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.852 | 0.334 | 2437072 | 1.64 | 50 | 97.7 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 49.177 | 0.748 | 3389941 | 1.44 | 50 | 98.4 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 33719 | 2.60 | 29515 | 114.24 | 70 | 120 | |
| Sc | 45 | H2 | 140161 | 0.25 | 120885 | 115.95 | 70 | 120 | |
| Sc | 45 | He | 103021 | 1.07 | 90842 | 113.41 | 70 | 120 | |
| Sc | 45 | NoGas | 640493 | 0.84 | 581580 | 110.13 | 70 | 120 | |
| Ge | 72 | H2 | 61875 | 0.93 | 55430 | 111.63 | 70 | 120 | |
| Ge | 72 | He | 71402 | 0.27 | 65257 | 109.42 | 70 | 120 | |
| Ge | 72 | NoGas | 221449 | 1.63 | 205384 | 107.82 | 70 | 120 | |
| In | 115 | H2 | 1660615 | 0.55 | 1539397 | 107.87 | 70 | 120 | |
| In | 115 | He | 894500 | 0.89 | 837505 | 106.81 | 70 | 120 | |
| In | 115 | NoGas | 1982922 | 1.08 | 1847093 | 107.35 | 70 | 120 | |
| Tb | 159 | H2 | 3472204 | 0.58 | 3319426 | 104.60 | 70 | 120 | |
| Tb | 159 | He | 2300178 | 0.52 | 2158455 | 106.57 | 70 | 120 | |
| Tb | 159 | NoGas | 3220229 | 0.83 | 3040386 | 105.92 | 70 | 120 | |
| Ho | 165 | H2 | 3387203 | 1.13 | 3213372 | 105.41 | 70 | 120 | |
| Ho | 165 | He | 2236841 | 0.47 | 2137675 | 104.64 | 70 | 120 | |
| Ho | 165 | NoGas | 3152195 | 1.95 | 2965292 | 106.30 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 016_CCB.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T18:24:18-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.066 | 0.0 | 0 | #DIV/0! | 0.1 | |
| B | 11 | 45 | NoGas | 0.121 | 178.3 | 1577 | 8.3 | 8 | |
| Na | 23 | 45 | He | -39.746 | -6.7 | 139289 | 0.0 | 50 | |
| Mg | 24 | 45 | He | -3.380 | -1.9 | 592 | 4.1 | 20 | |
| Al | 27 | 45 | He | -3.349 | -4.2 | 624 | 5.2 | 10 | |
| K | 39 | 45 | He | 13.370 | 11.9 | 109707 | 2.4 | 40 | |
| Ca | 44 | 45 | He | -19.617 | -10.4 | 978 | 6.5 | 150 | |
| Ti | 47 | 45 | He | -0.160 | -9.4 | 17 | 20.0 | 0.5 | |
| V | 51 | 45 | He | 0.065 | 5.4 | 1023 | 0.9 | 0.4 | |
| Cr | 52 | 45 | He | -0.210 | -4.8 | 3294 | 1.7 | 0.2 | |
| Mn | 55 | 45 | He | -0.051 | -15.4 | 1549 | 3.7 | 0.3 | |
| Fe | 56 | 45 | He | -3.946 | -1.1 | 17829 | 1.6 | 30 | |
| Co | 59 | 45 | He | -0.068 | -5.9 | 144 | 28.5 | 0.4 | |
| Ni | 60 | 45 | He | -0.064 | -28.1 | 378 | 13.2 | 0.4 | |
| Cu | 63 | 45 | He | -0.141 | -9.5 | 1417 | 7.5 | 0.4 | |
| Zn | 66 | 115 | He | -0.195 | -27.7 | 1581 | 5.3 | 15 | |
| As | 75 | 115 | He | 0.015 | 91.3 | 107 | 15.6 | 0.2 | |
| Se | 78 | 72 | H2 | -0.021 | -46.4 | 9 | 26.4 | 0.4 | |
| Se | 78 | 115 | He | 0.101 | 120.7 | 186 | 7.3 | 0.4 | |
| Sr | 88 | 115 | NoGas | 0.001 | 294.1 | 783 | 11.2 | 0.1 | |
| Mo | 95 | 115 | NoGas | -1.416 | -1.3 | 1520 | 9.2 | 0.3 | |
| Ag | 107 | 115 | NoGas | -0.001 | -208.7 | 53 | 43.3 | 0.1 | |
| Cd | 111 | 115 | He | 0.000 | 401.9 | 9 | 32.7 | 0.1 | |
| Sn | 118 | 115 | He | 0.035 | 59.9 | 1306 | 10.3 | 0.1 | |
| Sn | 118 | 115 | NoGas | 0.035 | 29.3 | 2512 | 3.6 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.041 | 43.5 | 4237 | 5.8 | 0.5 | |
| Ba | 137 | 165 | NoGas | -0.001 | -303.5 | 337 | 6.2 | 0.4 | |
| Tl | 205 | 165 | NoGas | -0.005 | -44.5 | 793 | 13.5 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.103 | -0.7 | 4120 | 1.5 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 34170 | 0.94 | 29515 | 115.77 | 70 | 120 | |
| Sc | 45 | H2 | 138963 | 1.06 | 120885 | 114.95 | 70 | 120 | |
| Sc | 45 | He | 99759 | 1.63 | 90842 | 109.82 | 70 | 120 | |
| Sc | 45 | NoGas | 630410 | 0.93 | 581580 | 108.40 | 70 | 120 | |
| Ge | 72 | H2 | 62292 | 0.69 | 55430 | 112.38 | 70 | 120 | |
| Ge | 72 | He | 71673 | 1.38 | 65257 | 109.83 | 70 | 120 | |
| Ge | 72 | NoGas | 221944 | 1.30 | 205384 | 108.06 | 70 | 120 | |
| In | 115 | H2 | 1669264 | 0.60 | 1539397 | 108.44 | 70 | 120 | |
| In | 115 | He | 895499 | 0.18 | 837505 | 106.92 | 70 | 120 | |
| In | 115 | NoGas | 1978777 | 1.27 | 1847093 | 107.13 | 70 | 120 | |
| Tb | 159 | H2 | 3456769 | 0.47 | 3319426 | 104.14 | 70 | 120 | |
| Tb | 159 | He | 2255009 | 0.81 | 2158455 | 104.47 | 70 | 120 | |
| Tb | 159 | NoGas | 3208265 | 1.29 | 3040386 | 105.52 | 70 | 120 | |
| Ho | 165 | H2 | 3382151 | 0.38 | 3213372 | 105.25 | 70 | 120 | |
| Ho | 165 | He | 2209737 | 1.67 | 2137675 | 103.37 | 70 | 120 | |
| Ho | 165 | NoGas | 3137841 | 1.13 | 2965292 | 105.82 | 70 | 120 | |

# Interference Check Solution A (ICS-A) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICSA |
| Data File Name | 017ICSA.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T18:30:18-08:00 |
| Sample Type | ICSA |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.059 | -18.3 | 7 | 173.2 | 0.1 | |
| B | 11 | 45 | NoGas | 2.401 | 23.0 | 2834 | 11.9 | 8 | |
| Na | 23 | 45 | He | 44145.807 | 0.6 | 39066871 | 0.3 | 60000 | |
| Mg | 24 | 45 | He | 45266.745 | 0.8 | 23153244 | 0.6 | 60000 | |
| Al | 27 | 45 | He | 48017.877 | 0.4 | 14573028 | 0.9 | 60000 | |
| K | 39 | 45 | He | 45190.652 | 1.2 | 31828812 | 1.8 | 60000 | |
| Ca | 44 | 45 | He | 50185.170 | 0.5 | 1784531 | 1.2 | 60000 | |
| Ti | 47 | 45 | He | 969.057 | 0.8 | 206099 | 1.0 | 1200 | |
| V | 51 | 45 | He | 0.006 | 480.1 | 709 | 20.0 | 0.2 | |
| Cr | 52 | 45 | He | 0.302 | 41.3 | 6624 | 11.3 | 30 | |
| Mn | 55 | 45 | He | 2.673 | 3.4 | 15546 | 2.3 | 24 | |
| Fe | 56 | 45 | He | 47355.045 | 0.6 | 304048175 | 0.9 | 60000 | |
| Co | 59 | 45 | He | 0.532 | 7.1 | 5986 | 5.4 | 5 | |
| Ni | 60 | 45 | He | 0.747 | 7.7 | 2416 | 5.2 | 20 | |
| Cu | 63 | 45 | He | 0.175 | 6.6 | 3613 | 1.7 | 25 | |
| Zn | 66 | 115 | He | -0.100 | -126.0 | 1630 | 10.8 | 60 | |
| As | 75 | 115 | He | 0.224 | 22.0 | 351 | 17.0 | 0.4 | |
| Se | 78 | 72 | H2 | -0.002 | -535.9 | 14 | 23.3 | 0.4 | |
| Se | 78 | 115 | He | 0.139 | 79.4 | 180 | 5.8 | 0.4 | |
| Sr | 88 | 115 | NoGas | 1.964 | 1.4 | 65779 | 0.9 | 5 | |
| Mo | 95 | 115 | NoGas | 1013.964 | 0.7 | 6689480 | 0.3 | 1200 | |
| Ag | 107 | 115 | NoGas | 0.018 | 19.7 | 407 | 17.8 | 5 | |
| Cd | 111 | 115 | He | 0.144 | 6.8 | 371 | 5.9 | 0.5 | |
| Sn | 118 | 115 | He | 0.233 | 8.7 | 2430 | 5.3 | 5 | |
| Sn | 118 | 115 | NoGas | 0.237 | 1.7 | 4640 | 0.8 | 5 | |
| Sb | 121 | 115 | NoGas | 0.291 | 5.6 | 7979 | 3.7 | 5 | |
| Ba | 137 | 165 | NoGas | 0.111 | 10.8 | 1073 | 7.9 | 1.5 | |
| Tl | 205 | 165 | NoGas | 0.002 | 120.0 | 1120 | 11.2 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.031 | -23.7 | 8975 | 4.9 | 1 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 30777 | 1.03 | 29515 | 104.28 | 70 | 120 | |
| Sc | 45 | H2 | 138093 | 1.11 | 120885 | 114.23 | 70 | 120 | |
| Sc | 45 | He | 101482 | 0.72 | 90842 | 111.71 | 70 | 120 | |
| Sc | 45 | NoGas | 606734 | 1.00 | 581580 | 104.33 | 70 | 120 | |
| Ge | 72 | H2 | 61314 | 0.38 | 55430 | 110.62 | 70 | 120 | |
| Ge | 72 | He | 72550 | 1.76 | 65257 | 111.18 | 70 | 120 | |
| Ge | 72 | NoGas | 221676 | 1.23 | 205384 | 107.93 | 70 | 120 | |
| In | 115 | H2 | 1559413 | 2.07 | 1539397 | 101.30 | 70 | 120 | |
| In | 115 | He | 844717 | 0.69 | 837505 | 100.86 | 70 | 120 | |
| In | 115 | NoGas | 1864602 | 0.98 | 1847093 | 100.95 | 70 | 120 | |
| Tb | 159 | H2 | 3369786 | 0.26 | 3319426 | 101.52 | 70 | 120 | |
| Tb | 159 | He | 2243748 | 0.58 | 2158455 | 103.95 | 70 | 120 | |
| Tb | 159 | NoGas | 3127630 | 0.92 | 3040386 | 102.87 | 70 | 120 | |
| Ho | 165 | H2 | 3288506 | 2.18 | 3213372 | 102.34 | 70 | 120 | |
| Ho | 165 | He | 2203331 | 0.47 | 2137675 | 103.07 | 70 | 120 | |
| Ho | 165 | NoGas | 3116971 | 0.71 | 2965292 | 105.12 | 70 | 120 | |

# Interference Check Solution AB (ICS-AB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | ICSAB |
| Data File Name | 019ICSB.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T18:42:20-08:00 |
| Sample Type | ICSB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 41.516 | 2.363 | 41837 | 2.07 | 50 | 83.0 | 80 | 120 | |
| B | 11 | 45 | NoGas | 1.538 | 11.925 | 2220 | 4.75 | -8 | -19.2 | 80 | 120 | |
| Na | 23 | 45 | He | 43092.926 | 0.812 | 36021189 | 0.53 | 50000 | 86.2 | 80 | 120 | |
| Mg | 24 | 45 | He | 44697.258 | 1.235 | 21591530 | 0.23 | 50000 | 89.4 | 80 | 120 | |
| Al | 27 | 45 | He | 47304.679 | 1.956 | 13557511 | 0.73 | 50000 | 94.6 | 80 | 120 | |
| K | 39 | 45 | He | 45117.691 | 0.796 | 30011502 | 0.96 | 50000 | 90.2 | 80 | 120 | |
| Ca | 44 | 45 | He | 49706.809 | 1.605 | 1669234 | 1.05 | 50000 | 99.4 | 80 | 120 | |
| Ti | 47 | 45 | He | 963.738 | 1.460 | 193589 | 1.71 | 1000 | 96.4 | 80 | 120 | |
| V | 51 | 45 | He | 47.399 | 1.158 | 249310 | 0.62 | 50 | 94.8 | 80 | 120 | |
| Cr | 52 | 45 | He | 46.133 | 1.307 | 283423 | 0.25 | 50 | 92.3 | 80 | 120 | |
| Mn | 55 | 45 | He | 48.477 | 1.503 | 236574 | 1.27 | 50 | 97.0 | 80 | 120 | |
| Fe | 56 | 45 | He | 47236.325 | 1.228 | 286433331 | 0.88 | 50000 | 94.5 | 80 | 120 | |
| Co | 59 | 45 | He | 46.712 | 1.128 | 430313 | 0.61 | 50 | 93.4 | 80 | 120 | |
| Ni | 60 | 45 | He | 92.493 | 1.333 | 219488 | 0.42 | 100 | 92.5 | 80 | 120 | |
| Cu | 63 | 45 | He | 46.167 | 1.184 | 301644 | 0.32 | 50 | 92.3 | 80 | 120 | |
| Zn | 66 | 115 | He | 92.053 | 0.324 | 133290 | 0.34 | 100 | 92.1 | 80 | 120 | |
| As | 75 | 115 | He | 46.796 | 1.253 | 54619 | 1.06 | 50 | 93.6 | 80 | 120 | |
| Se | 78 | 72 | H2 | 42.650 | 3.112 | 10508 | 0.69 | 50 | 85.3 | 80 | 120 | |
| Se | 78 | 115 | He | 47.398 | 1.516 | 4931 | 1.17 | 50 | 94.8 | 80 | 120 | |
| Sr | 88 | 115 | NoGas | 1.909 | 2.739 | 62792 | 2.14 | -5 | -38.2 | 80 | 120 | |
| Mo | 95 | 115 | NoGas | 1036.290 | 1.775 | 6711073 | 1.03 | 1050 | 98.7 | 80 | 120 | |
| Ag | 107 | 115 | NoGas | 94.252 | 1.002 | 1750740 | 0.83 | 100 | 94.3 | 80 | 120 | |
| Cd | 111 | 115 | He | 91.435 | 0.148 | 224739 | 0.40 | 100 | 91.4 | 80 | 120 | |
| Sn | 118 | 115 | He | 0.209 | 11.815 | 2235 | 6.23 | 50 | 0.4 | 80 | 120 | >+\- 20% |
| Sn | 118 | 115 | NoGas | 0.211 | 4.573 | 4275 | 2.94 | 50 | 0.4 | 80 | 120 | >+\- 20% |
| Sb | 121 | 115 | NoGas | 51.985 | 1.134 | 818089 | 1.24 | 50 | 104.0 | 80 | 120 | |
| Ba | 137 | 165 | NoGas | 45.322 | 0.585 | 292681 | 0.53 | 50 | 90.6 | 80 | 120 | |
| Tl | 205 | 165 | NoGas | 43.741 | 1.005 | 2115080 | 0.05 | 50 | 87.5 | 80 | 120 | |
| Pb | 208 | 165 | NoGas | 87.254 | 0.128 | 5821879 | 0.94 | 100 | 87.3 | 80 | 120 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 28141 | 4.51 | 29515 | 95.35 | 70 | 120 | |
| Sc | 45 | H2 | 131964 | 1.55 | 120885 | 109.16 | 70 | 120 | |
| Sc | 45 | He | 95851 | 1.30 | 90842 | 105.51 | 70 | 120 | |
| Sc | 45 | NoGas | 577023 | 0.29 | 581580 | 99.22 | 70 | 120 | |
| Ge | 72 | H2 | 60408 | 2.48 | 55430 | 108.98 | 70 | 120 | |
| Ge | 72 | He | 69404 | 0.78 | 65257 | 106.36 | 70 | 120 | |
| Ge | 72 | NoGas | 212959 | 0.53 | 205384 | 103.69 | 70 | 120 | |
| In | 115 | H2 | 1521296 | 0.84 | 1539397 | 98.82 | 70 | 120 | |
| In | 115 | He | 825085 | 0.30 | 837505 | 98.52 | 70 | 120 | |
| In | 115 | NoGas | 1830461 | 0.75 | 1847093 | 99.10 | 70 | 120 | |
| Tb | 159 | H2 | 3317535 | 0.90 | 3319426 | 99.94 | 70 | 120 | |
| Tb | 159 | He | 2173255 | 1.47 | 2158455 | 100.69 | 70 | 120 | |
| Tb | 159 | NoGas | 3025814 | 1.00 | 3040386 | 99.52 | 70 | 120 | |
| Ho | 165 | H2 | 3324143 | 0.73 | 3213372 | 103.45 | 70 | 120 | |
| Ho | 165 | He | 2143279 | 0.60 | 2137675 | 100.26 | 70 | 120 | |
| Ho | 165 | NoGas | 3055313 | 1.05 | 2965292 | 103.04 | 70 | 120 | |

# Continuing Calibration Verification (CCV) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCV |
| Data File Name | 040_CCV.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T20:48:44-08:00 |
| Sample Type | CCV |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Exp Value | %Rec | %Low | %High2 | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 45.380 | 3.262 | 47447 | 3.07 | 50 | 90.8 | 89.6 | 110.4 | |
| B | 11 | 45 | NoGas | 48.224 | 2.480 | 28876 | 2.14 | 50 | 96.4 | 89.6 | 110.4 | |
| Na | 23 | 45 | He | 1283.334 | 2.338 | 1323774 | 1.56 | 1250 | 102.7 | 89.6 | 110.4 | |
| Mg | 24 | 45 | He | 2412.900 | 0.831 | 1252069 | 1.22 | 2500 | 96.5 | 89.6 | 110.4 | |
| Al | 27 | 45 | He | 942.682 | 0.846 | 291346 | 0.28 | 1000 | 94.3 | 89.6 | 110.4 | |
| K | 39 | 45 | He | 936.862 | 0.869 | 769516 | 0.35 | 1000 | 93.7 | 89.6 | 110.4 | |
| Ca | 44 | 45 | He | 2428.633 | 0.351 | 89080 | 0.41 | 2500 | 97.1 | 89.6 | 110.4 | |
| Ti | 47 | 45 | He | 47.568 | 2.239 | 10293 | 1.54 | 50 | 95.1 | 89.6 | 110.4 | |
| V | 51 | 45 | He | 49.819 | 1.498 | 280918 | 0.88 | 50 | 99.6 | 89.6 | 110.4 | |
| Cr | 52 | 45 | He | 48.554 | 1.040 | 319596 | 0.53 | 50 | 97.1 | 89.6 | 110.4 | |
| Mn | 55 | 45 | He | 49.638 | 0.159 | 259694 | 0.54 | 50 | 99.3 | 89.6 | 110.4 | |
| Fe | 56 | 45 | He | 991.836 | 1.056 | 6491656 | 0.44 | 1000 | 99.2 | 89.6 | 110.4 | |
| Co | 59 | 45 | He | 49.767 | 0.292 | 491529 | 0.41 | 50 | 99.5 | 89.6 | 110.4 | |
| Ni | 60 | 45 | He | 50.254 | 0.533 | 128125 | 0.73 | 50 | 100.5 | 89.6 | 110.4 | |
| Cu | 63 | 45 | He | 49.876 | 0.023 | 349235 | 0.71 | 50 | 99.8 | 89.6 | 110.4 | |
| Zn | 66 | 115 | He | 46.828 | 1.465 | 80583 | 1.35 | 50 | 93.7 | 89.6 | 110.4 | |
| As | 75 | 115 | He | 46.972 | 0.347 | 64348 | 0.55 | 50 | 93.9 | 89.6 | 110.4 | |
| Se | 78 | 72 | H2 | 47.381 | 2.680 | 12368 | 0.99 | 50 | 94.8 | 89.6 | 110.4 | |
| Se | 78 | 115 | He | 47.698 | 2.790 | 5823 | 2.45 | 50 | 95.4 | 89.6 | 110.4 | |
| Sr | 88 | 115 | NoGas | 47.361 | 1.884 | 1827994 | 0.49 | 50 | 94.7 | 89.6 | 110.4 | |
| Mo | 95 | 115 | NoGas | 45.037 | 1.946 | 357904 | 0.49 | 50 | 90.1 | 89.6 | 110.4 | |
| Ag | 107 | 115 | NoGas | 25.023 | 0.632 | 551359 | 1.27 | 25 | 100.1 | 89.6 | 110.4 | |
| Cd | 111 | 115 | He | 48.805 | 0.513 | 140798 | 0.26 | 50 | 97.6 | 89.6 | 110.4 | |
| Sn | 118 | 115 | He | 49.363 | 0.542 | 343682 | 0.55 | 50 | 98.7 | 89.6 | 110.4 | |
| Sn | 118 | 115 | NoGas | 49.691 | 0.714 | 653978 | 1.55 | 50 | 99.4 | 89.6 | 110.4 | |
| Sb | 121 | 115 | NoGas | 47.669 | 1.097 | 890045 | 0.35 | 50 | 95.3 | 89.6 | 110.4 | |
| Ba | 137 | 165 | NoGas | 49.433 | 0.856 | 369116 | 0.18 | 50 | 98.9 | 89.6 | 110.4 | |
| Tl | 205 | 165 | NoGas | 48.845 | 1.484 | 2731160 | 1.26 | 50 | 97.7 | 89.6 | 110.4 | |
| Pb | 208 | 165 | NoGas | 49.457 | 1.010 | 3821270 | 0.32 | 50 | 98.9 | 89.6 | 110.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 26610 | 1.02 | 29515 | 90.16 | 70 | 120 | |
| Sc | 45 | H2 | 134961 | 0.70 | 120885 | 111.64 | 70 | 120 | |
| Sc | 45 | He | 102767 | 0.69 | 90842 | 113.13 | 70 | 120 | |
| Sc | 45 | NoGas | 598755 | 0.28 | 581580 | 102.95 | 70 | 120 | |
| Ge | 72 | H2 | 63996 | 1.94 | 55430 | 115.45 | 70 | 120 | |
| Ge | 72 | He | 77500 | 1.47 | 65257 | 118.76 | 70 | 120 | |
| Ge | 72 | NoGas | 231961 | 1.24 | 205384 | 112.94 | 70 | 120 | |
| In | 115 | H2 | 1759582 | 0.49 | 1539397 | 114.30 | 70 | 120 | |
| In | 115 | He | 968393 | 0.26 | 837505 | 115.63 | 70 | 120 | |
| In | 115 | NoGas | 2171162 | 1.40 | 1847093 | 117.54 | 70 | 120 | |
| Tb | 159 | H2 | 3758304 | 0.38 | 3319426 | 113.22 | 70 | 120 | |
| Tb | 159 | He | 2482908 | 1.29 | 2158455 | 115.03 | 70 | 120 | |
| Tb | 159 | NoGas | 3561245 | 1.52 | 3040386 | 117.13 | 70 | 120 | |
| Ho | 165 | H2 | 3721178 | 1.76 | 3213372 | 115.80 | 70 | 120 | |
| Ho | 165 | He | 2443862 | 0.41 | 2137675 | 114.32 | 70 | 120 | |
| Ho | 165 | NoGas | 3533125 | 0.82 | 2965292 | 119.15 | 70 | 120 | |

# Continuing Calibration Blank (CCB) Report

**Sample Table**

| | |
|---|---|
| Sample Name | CCB |
| Data File Name | 042_CCB.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T21:00:45-08:00 |
| Sample Type | CCB |
| Dilution | 1 |
| Comment | |
| ISTD Ref File Name | 002CALB.d |
| Sample QC Pass/Fail | Fail |
| ISTD Pass/Fail | Pass |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | Conc %RSD | CPS | CPS %RSD | Upper Limit | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.050 | -40.1 | 17 | 124.9 | 0.1 | |
| B | 11 | 45 | NoGas | 3.062 | 16.3 | 3167 | 8.4 | 8 | |
| Na | 23 | 45 | He | 46.013 | 7.5 | 213565 | 0.5 | 50 | |
| Mg | 24 | 45 | He | -2.968 | -4.9 | 799 | 8.4 | 20 | |
| Al | 27 | 45 | He | -3.299 | -0.7 | 640 | 1.8 | 10 | |
| K | 39 | 45 | He | 10.513 | 28.4 | 107741 | 2.8 | 40 | |
| Ca | 44 | 45 | He | -19.439 | -0.8 | 984 | 1.4 | 150 | |
| Ti | 47 | 45 | He | -0.197 | -20.5 | 9 | 94.4 | 0.5 | |
| V | 51 | 45 | He | 0.209 | 12.7 | 1809 | 7.4 | 0.4 | |
| Cr | 52 | 45 | He | -0.242 | -0.5 | 3088 | 1.2 | 0.2 | |
| Mn | 55 | 45 | He | 0.026 | 44.3 | 1935 | 2.5 | 0.3 | |
| Fe | 56 | 45 | He | -3.762 | -2.1 | 18992 | 1.8 | 30 | |
| Co | 59 | 45 | He | -0.062 | -3.6 | 201 | 9.7 | 0.4 | |
| Ni | 60 | 45 | He | -0.066 | -30.6 | 372 | 12.7 | 0.4 | |
| Cu | 63 | 45 | He | -0.118 | -3.8 | 1571 | 1.4 | 0.4 | |
| Zn | 66 | 115 | He | -0.343 | -13.6 | 1461 | 5.2 | 15 | |
| As | 75 | 115 | He | 0.021 | 97.8 | 124 | 22.6 | 0.2 | |
| Se | 78 | 72 | H2 | 0.008 | 176.5 | 17 | 22.9 | 0.4 | |
| Se | 78 | 115 | He | 0.402 | 34.4 | 237 | 6.6 | 0.4 | >LOD |
| Sr | 88 | 115 | NoGas | 0.008 | 51.7 | 1113 | 13.1 | 0.1 | |
| Mo | 95 | 115 | NoGas | -1.427 | -1.6 | 1567 | 9.9 | 0.3 | |
| Ag | 107 | 115 | NoGas | 0.191 | 8.9 | 4241 | 8.3 | 0.1 | >LOD |
| Cd | 111 | 115 | He | 0.000 | 9713.1 | 9 | 65.5 | 0.1 | |
| Sn | 118 | 115 | He | 0.051 | 31.9 | 1527 | 7.7 | 0.1 | |
| Sn | 118 | 115 | NoGas | 0.057 | 3.7 | 3015 | 2.0 | 0.1 | |
| Sb | 121 | 115 | NoGas | 0.026 | 31.8 | 4327 | 4.3 | 0.5 | |
| Ba | 137 | 165 | NoGas | 0.015 | 84.4 | 497 | 19.6 | 0.4 | |
| Tl | 205 | 165 | NoGas | -0.002 | -95.1 | 1007 | 13.2 | 0.2 | |
| Pb | 208 | 165 | NoGas | -0.106 | -0.9 | 4400 | 1.6 | 0.4 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 27143 | 1.13 | 29515 | 91.96 | 70 | 120 | |
| Sc | 45 | H2 | 131527 | 0.39 | 120885 | 108.80 | 70 | 120 | |
| Sc | 45 | He | 99759 | 0.90 | 90842 | 109.82 | 70 | 120 | |
| Sc | 45 | NoGas | 598144 | 0.63 | 581580 | 102.85 | 70 | 120 | |
| Ge | 72 | H2 | 63677 | 0.91 | 55430 | 114.88 | 70 | 120 | |
| Ge | 72 | He | 76857 | 0.99 | 65257 | 117.78 | 70 | 120 | |
| Ge | 72 | NoGas | 228806 | 1.56 | 205384 | 111.40 | 70 | 120 | |
| In | 115 | H2 | 1751688 | 2.20 | 1539397 | 113.79 | 70 | 120 | |
| In | 115 | He | 968227 | 0.27 | 837505 | 115.61 | 70 | 120 | |
| In | 115 | NoGas | 2149861 | 1.17 | 1847093 | 116.39 | 70 | 120 | |
| Tb | 159 | H2 | 3753950 | 1.09 | 3319426 | 113.09 | 70 | 120 | |
| Tb | 159 | He | 2461448 | 1.19 | 2158455 | 114.04 | 70 | 120 | |
| Tb | 159 | NoGas | 3569931 | 0.48 | 3040386 | 117.42 | 70 | 120 | |
| Ho | 165 | H2 | 3659337 | 1.08 | 3213372 | 113.88 | 70 | 120 | |
| Ho | 165 | He | 2390779 | 2.94 | 2137675 | 111.84 | 70 | 120 | |
| Ho | 165 | NoGas | 3522740 | 1.20 | 2965292 | 118.80 | 70 | 120 | |

# METALS

## Raw Data

APPL, INC.

# METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| 6020A | LEAD (PB) (DISSOL | 0.40 U | 3.0 | 0.40 | 0.19 | ug/L | 11/26/14 | 12/03/14 | #62A14-141126B-AZ07203 |

*Metals SC-Blank-REG MDLs*
*Printed: 12/04/14 10:42:24 AM*

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | 141126B BLK |
| Data File Name | 021SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T18:54:20-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | -0.066 | -0.073 | 0.00 | 0 | #DIV/0! | 10000 | |
| B | 11 | 45 | NoGas | -0.310 | -0.344 | -97.04 | 1503 | 14.30 | 10000 | |
| Na | 23 | 45 | He | -60.122 | -66.802 | -5.12 | 137366 | 0.49 | 1000000 | |
| Mg | 24 | 45 | He | -2.092 | -2.325 | -18.11 | 1400 | 15.10 | 1000000 | |
| Al | 27 | 45 | He | -2.238 | -2.487 | -7.24 | 1080 | 5.57 | 1000000 | |
| K | 39 | 45 | He | -6.722 | -7.469 | -97.45 | 108167 | 2.96 | 500000 | |
| Ca | 44 | 45 | He | -29.547 | -32.830 | -6.37 | 712 | 8.78 | 500000 | |
| Ti | 47 | 45 | He | -0.131 | -0.145 | -28.63 | 26 | 32.81 | 10000 | |
| V | 51 | 45 | He | -0.104 | -0.116 | -9.37 | 112 | 53.33 | 10000 | |
| Cr | 52 | 45 | He | -0.315 | -0.349 | -8.40 | 2973 | 4.57 | 10000 | |
| Mn | 55 | 45 | He | 0.012 | 0.014 | 331.19 | 2106 | 9.68 | 50000 | |
| Fe | 56 | 45 | He | -3.174 | -3.527 | -3.16 | 25630 | 1.62 | 1000000 | |
| Co | 59 | 45 | He | -0.049 | -0.054 | -7.98 | 370 | 12.71 | 10000 | |
| Ni | 60 | 45 | He | 0.070 | 0.078 | 31.42 | 800 | 6.93 | 10000 | |
| Cu | 63 | 45 | He | -0.082 | -0.091 | -18.43 | 2047 | 3.96 | 10000 | |
| Zn | 66 | 115 | He | -0.325 | -0.361 | -20.52 | 1422 | 7.45 | 50000 | |
| As | 75 | 115 | He | -0.033 | -0.037 | -15.78 | 48 | 14.43 | 2000 | |
| Se | 78 | 72 | H2 | -0.010 | -0.012 | -35.61 | 12 | 8.53 | 10000 | |
| Se | 78 | 115 | He | 0.382 | 0.424 | 5.86 | 224 | 1.29 | 10000 | |
| Sr | 88 | 115 | NoGas | -0.007 | -0.007 | -27.52 | 540 | 11.57 | 50000 | |
| Mo | 95 | 115 | NoGas | -0.868 | -0.964 | -3.01 | 5531 | 3.89 | 10000 | |
| Ag | 107 | 115 | NoGas | 0.000 | 0.000 | 613.98 | 73 | 64.45 | 5000 | |
| Cd | 111 | 115 | He | 0.001 | 0.001 | 324.70 | 11 | 71.32 | 10000 | |
| Sn | 118 | 115 | He | -0.068 | -0.076 | -17.23 | 666 | 11.79 | 10000 | |
| Sn | 118 | 115 | NoGas | -0.067 | -0.075 | -8.19 | 1333 | 7.17 | 10000 | |
| Sb | 121 | 115 | NoGas | -0.102 | -0.114 | -5.09 | 1870 | 3.74 | 10000 | |
| Ba | 137 | 165 | NoGas | -0.032 | -0.036 | -16.28 | 133 | 26.34 | 50000 | |
| Tl | 205 | 165 | NoGas | 0.025 | 0.028 | 20.56 | 2284 | 11.26 | 5000 | |
| Pb | 208 | 165 | NoGas | -0.118 | -0.132 | -2.78 | 3087 | 7.51 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 40982 | 1.65 | 29515 | 138.85 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 145214 | 0.43 | 120885 | 120.13 | 70 | 120 | ISTD Failed |
| Sc | 45 | He | 112660 | 1.85 | 90842 | 124.02 | 70 | 120 | ISTD Failed |
| Sc | 45 | NoGas | 718441 | 0.79 | 581580 | 123.53 | 70 | 120 | ISTD Failed |
| Ge | 72 | H2 | 65664 | 0.82 | 55430 | 118.46 | 70 | 120 | |
| Ge | 72 | He | 77063 | 0.52 | 65257 | 118.09 | 70 | 120 | |
| Ge | 72 | NoGas | 241777 | 1.02 | 205384 | 117.72 | 70 | 120 | |
| In | 115 | H2 | 1665051 | 1.00 | 1539397 | 108.16 | 70 | 120 | |
| In | 115 | He | 922961 | 0.24 | 837505 | 110.20 | 70 | 120 | |
| In | 115 | NoGas | 2043860 | 2.40 | 1847093 | 110.65 | 70 | 120 | |
| Tb | 159 | H2 | 3372160 | 1.40 | 3319426 | 101.59 | 70 | 120 | |
| Tb | 159 | He | 2274912 | 0.56 | 2158455 | 105.40 | 70 | 120 | |
| Tb | 159 | NoGas | 3269139 | 1.34 | 3040386 | 107.52 | 70 | 120 | |
| Ho | 165 | H2 | 3334304 | 2.05 | 3213372 | 103.76 | 70 | 120 | |
| Ho | 165 | He | 2231545 | 0.80 | 2137675 | 104.39 | 70 | 120 | |
| Ho | 165 | NoGas | 3169316 | 0.17 | 2965292 | 106.88 | 70 | 120 | |

# Laboratory Control Spike Recovery
## METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level ug/L | SPK Result ug/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVED) | 50.0 | 46.8 | 93.6 | 80-120 | 11/26/14 | 12/03/14 | #62A14-141126B-AZ07203 |

Comments:

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | 141126B LCS |
| Data File Name | 022SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T19:00:20-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 9.031 | 10.034 | 0.91 | 11727 | 0.94 | 10000 | |
| B | 11 | 45 | NoGas | 45.990 | 51.100 | 2.57 | 34088 | 2.74 | 10000 | |
| Na | 23 | 45 | He | 4286.154 | 4762.394 | 1.37 | 4465767 | 0.66 | 1000000 | |
| Mg | 24 | 45 | He | 4509.707 | 5010.786 | 0.73 | 2609017 | 2.31 | 1000000 | |
| Al | 27 | 45 | He | 372.906 | 414.340 | 0.47 | 129727 | 1.29 | 1000000 | |
| K | 39 | 45 | He | 862.841 | 958.712 | 1.27 | 799859 | 0.65 | 500000 | |
| Ca | 44 | 45 | He | 4455.528 | 4950.587 | 1.43 | 180747 | 1.57 | 500000 | |
| Ti | 47 | 45 | He | 44.609 | 49.566 | 1.16 | 10774 | 1.20 | 10000 | |
| V | 51 | 45 | He | 44.283 | 49.203 | 0.44 | 278708 | 1.22 | 10000 | |
| Cr | 52 | 45 | He | 42.377 | 47.085 | 0.61 | 311909 | 1.08 | 10000 | |
| Mn | 55 | 45 | He | 42.988 | 47.764 | 0.19 | 251232 | 1.78 | 50000 | |
| Fe | 56 | 45 | He | 175.897 | 195.441 | 3.22 | 1325480 | 4.63 | 1000000 | |
| Co | 59 | 45 | He | 42.364 | 47.071 | 0.58 | 467005 | 1.68 | 10000 | |
| Ni | 60 | 45 | He | 41.542 | 46.158 | 0.55 | 118280 | 1.11 | 10000 | |
| Cu | 63 | 45 | He | 41.154 | 45.726 | 0.88 | 321980 | 0.78 | 10000 | |
| Zn | 66 | 115 | He | 86.611 | 96.235 | 0.75 | 143167 | 1.13 | 50000 | |
| As | 75 | 115 | He | 42.779 | 47.533 | 0.93 | 56960 | 0.59 | 2000 | |
| Se | 78 | 72 | H2 | 39.329 | 43.699 | 1.24 | 10626 | 0.97 | 10000 | |
| Se | 78 | 115 | He | 43.247 | 48.052 | 1.92 | 5149 | 2.20 | 10000 | |
| Sr | 88 | 115 | NoGas | 43.686 | 48.540 | 1.10 | 1655902 | 1.15 | 50000 | |
| Mo | 95 | 115 | NoGas | 44.370 | 49.300 | 1.51 | 346449 | 1.40 | 10000 | |
| Ag | 107 | 115 | NoGas | 17.297 | 19.219 | 2.28 | 374252 | 2.18 | 5000 | |
| Cd | 111 | 115 | He | 8.056 | 8.951 | 0.59 | 22597 | 2.04 | 10000 | |
| Sn | 118 | 115 | He | 44.085 | 48.984 | 1.71 | 298386 | 0.45 | 10000 | |
| Sn | 118 | 115 | NoGas | 44.174 | 49.082 | 0.81 | 571082 | 1.08 | 10000 | |
| Sb | 121 | 115 | NoGas | 43.443 | 48.270 | 0.55 | 796850 | 0.90 | 10000 | |
| Ba | 137 | 165 | NoGas | 45.021 | 50.024 | 1.18 | 305846 | 0.71 | 50000 | |
| Tl | 205 | 165 | NoGas | 42.987 | 47.764 | 1.86 | 2186524 | 0.26 | 5000 | |
| Pb | 208 | 165 | NoGas | 42.141 | 46.824 | 1.20 | 2963807 | 1.34 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 41907 | 0.83 | 29515 | 141.99 | 70 | 120 | ISTD Failed |
| Sc | 45 | H2 | 148863 | 2.07 | 120885 | 123.14 | 70 | 120 | ISTD Failed |
| Sc | 45 | He | 114670 | 1.64 | 90842 | 126.23 | 70 | 120 | ISTD Failed |
| Sc | 45 | NoGas | 739336 | 0.68 | 581580 | 127.13 | 70 | 120 | ISTD Failed |
| Ge | 72 | H2 | 66206 | 1.50 | 55430 | 119.44 | 70 | 120 | |
| Ge | 72 | He | 77649 | 1.75 | 65257 | 118.99 | 70 | 120 | |
| Ge | 72 | NoGas | 245973 | 1.21 | 205384 | 119.76 | 70 | 120 | |
| In | 115 | H2 | 1702096 | 0.83 | 1539397 | 110.57 | 70 | 120 | |
| In | 115 | He | 941174 | 1.46 | 837505 | 112.38 | 70 | 120 | |
| In | 115 | NoGas | 2131781 | 0.36 | 1847093 | 115.41 | 70 | 120 | |
| Tb | 159 | H2 | 3455523 | 0.68 | 3319426 | 104.10 | 70 | 120 | |
| Tb | 159 | He | 2263689 | 0.60 | 2158455 | 104.88 | 70 | 120 | |
| Tb | 159 | NoGas | 3260651 | 1.72 | 3040386 | 107.24 | 70 | 120 | |
| Ho | 165 | H2 | 3343303 | 0.95 | 3213372 | 104.04 | 70 | 120 | |
| Ho | 165 | He | 2248214 | 1.31 | 2137675 | 105.17 | 70 | 120 | |
| Ho | 165 | NoGas | 3214277 | 1.59 | 2965292 | 108.40 | 70 | 120 | |

# Matrix Spike Recoveries

## METALS

APPL ID: **141126W-07203 MS - 192570**

Sample ID: AZ07203

Client ID: HW111214-02

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl ug/L | Matrix Res ug/L | SPK Res ug/L | DUP Res ug/L | SPK % Recovery | DUP % Recovery | RPD | RPD Max | Recovery Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group | QC Sample |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 6020A | LEAD (PB) (DISSOLVE | 50.0 | 0.67 | 47.4 | 47.5 | 93.5 | 93.7 | 0.2 | 20 | 80-120 | 11/26/14 | 12/03/14 | 11/26/14 | 12/03/14 | 192570 | AZ07203 |

Comments: _____

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ07203W11 MS |
| Data File Name | 036SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T20:24:43-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 7.990 | 8.878 | 1.20 | 10066 | 0.51 | 10000 | |
| B | 11 | 45 | NoGas | 117.869 | 130.966 | 1.67 | 82005 | 0.97 | 10000 | |
| Na | 23 | 45 | He | 37104.159 | 41226.843 | 2.43 | 37232383 | 2.83 | 1000000 | |
| Mg | 24 | 45 | He | 23636.629 | 26262.921 | 1.63 | 13698082 | 2.11 | 1000000 | |
| Al | 27 | 45 | He | 360.764 | 400.849 | 1.86 | 125887 | 1.73 | 1000000 | |
| K | 39 | 45 | He | 3000.470 | 3333.856 | 1.52 | 2502061 | 1.65 | 500000 | |
| Ca | 44 | 45 | He | 29349.754 | 32610.838 | 0.97 | 1183077 | 1.37 | 500000 | |
| Ti | 47 | 45 | He | 42.340 | 47.044 | 2.02 | 10256 | 2.14 | 10000 | |
| V | 51 | 45 | He | 52.980 | 58.866 | 1.14 | 334174 | 1.54 | 10000 | |
| Cr | 52 | 45 | He | 43.224 | 48.027 | 1.03 | 318868 | 0.90 | 10000 | |
| Mn | 55 | 45 | He | 59.929 | 66.588 | 1.23 | 350302 | 0.85 | 50000 | |
| Fe | 56 | 45 | He | 206.228 | 229.143 | 0.74 | 1549038 | 0.82 | 1000000 | |
| Co | 59 | 45 | He | 41.837 | 46.485 | 0.41 | 462386 | 0.49 | 10000 | |
| Ni | 60 | 45 | He | 43.368 | 48.186 | 0.76 | 123779 | 1.45 | 10000 | |
| Cu | 63 | 45 | He | 41.207 | 45.786 | 1.13 | 323265 | 1.63 | 10000 | |
| Zn | 66 | 115 | He | 91.170 | 101.300 | 1.54 | 153412 | 1.15 | 50000 | |
| As | 75 | 115 | He | 42.111 | 46.790 | 1.23 | 57123 | 0.95 | 2000 | |
| Se | 78 | 72 | H2 | 39.396 | 43.773 | 0.94 | 10469 | 1.30 | 10000 | |
| Se | 78 | 115 | He | 41.666 | 46.296 | 0.91 | 5060 | 0.28 | 10000 | |
| Sr | 88 | 115 | NoGas | 213.191 | 236.878 | 0.87 | 8160412 | 1.37 | 50000 | |
| Mo | 95 | 115 | NoGas | 44.046 | 48.940 | 0.73 | 347520 | 0.96 | 10000 | |
| Ag | 107 | 115 | NoGas | 17.112 | 19.013 | 1.41 | 373998 | 1.00 | 5000 | |
| Cd | 111 | 115 | He | 8.132 | 9.036 | 0.90 | 23235 | 0.09 | 10000 | |
| Sn | 118 | 115 | He | 45.314 | 50.349 | 0.45 | 312456 | 0.95 | 10000 | |
| Sn | 118 | 115 | NoGas | 46.407 | 51.564 | 0.67 | 605939 | 0.62 | 10000 | |
| Sb | 121 | 115 | NoGas | 48.153 | 53.503 | 0.63 | 891796 | 0.33 | 10000 | |
| Ba | 137 | 165 | NoGas | 61.477 | 68.308 | 1.15 | 443482 | 0.74 | 50000 | |
| Tl | 205 | 165 | NoGas | 42.684 | 47.427 | 1.81 | 2306286 | 1.22 | 5000 | |
| Pb | 208 | 165 | NoGas | 42.638 | 47.375 | 0.34 | 3185087 | 0.41 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 32559 | 1.24 | 29515 | 110.31 | 70 | 120 | |
| Sc | 45 | H2 | 142345 | 0.72 | 120885 | 117.75 | 70 | 120 | |
| Sc | 45 | He | 114965 | 0.85 | 90842 | 126.55 | 70 | 120 | ISTD Failed |
| Sc | 45 | NoGas | 716660 | 0.81 | 581580 | 123.23 | 70 | 120 | ISTD Failed |
| Ge | 72 | H2 | 65123 | 2.24 | 55430 | 117.49 | 70 | 120 | |
| Ge | 72 | He | 80511 | 0.33 | 65257 | 123.38 | 70 | 120 | ISTD Failed |
| Ge | 72 | NoGas | 251207 | 1.13 | 205384 | 122.31 | 70 | 120 | ISTD Failed |
| In | 115 | H2 | 1718596 | 1.49 | 1539397 | 111.64 | 70 | 120 | |
| In | 115 | He | 958773 | 0.84 | 837505 | 114.48 | 70 | 120 | |
| In | 115 | NoGas | 2153517 | 0.52 | 1847093 | 116.59 | 70 | 120 | |
| Tb | 159 | H2 | 3585998 | 1.07 | 3319426 | 108.03 | 70 | 120 | |
| Tb | 159 | He | 2383963 | 1.55 | 2158455 | 110.45 | 70 | 120 | |
| Tb | 159 | NoGas | 3529291 | 0.65 | 3040386 | 116.08 | 70 | 120 | |
| Ho | 165 | H2 | 3500322 | 1.38 | 3213372 | 108.93 | 70 | 120 | |
| Ho | 165 | He | 2370177 | 2.32 | 2137675 | 110.88 | 70 | 120 | |
| Ho | 165 | NoGas | 3413987 | 0.69 | 2965292 | 115.13 | 70 | 120 | |

# Sample Report

**Sample Table**

| | |
|---|---|
| Sample Name | AZ07203W11 MSD |
| Data File Name | 037SMPL.d |
| Data Path Name | D:\DATA\141203A.b |
| Acq Date Time | 2014-12-03T20:30:42-08:00 |
| Sample Type | Sample |
| Dilution | 1.111111111 |
| Comment | |
| ISTD Ref FileName | 002CALB.d |
| Sample QC Pass/Fail | Pass |
| ISTD Pass/Fail | Fail |

**QC Analyte Table**

| Name | Mass | ISTD Mass | Tune Mode | Conc | FinalConc | Conc %RSD | CPS | %RSD | LDR | QC Flag |
|---|---|---|---|---|---|---|---|---|---|---|
| Be | 9 | 45 | NoGas | 8.068 | 8.964 | 3.51 | 10450 | 3.37 | 10000 | |
| B | 11 | 45 | NoGas | 117.315 | 130.350 | 1.33 | 83929 | 1.31 | 10000 | |
| Na | 23 | 45 | He | 37903.178 | 42114.642 | 0.65 | 38828038 | 0.76 | 1000000 | |
| Mg | 24 | 45 | He | 23859.613 | 26510.681 | 1.65 | 14116366 | 0.31 | 1000000 | |
| Al | 27 | 45 | He | 371.784 | 413.093 | 1.56 | 132400 | 0.82 | 1000000 | |
| K | 39 | 45 | He | 3057.063 | 3396.737 | 0.73 | 2600722 | 1.15 | 500000 | |
| Ca | 44 | 45 | He | 30511.185 | 33901.317 | 1.88 | 1255953 | 3.18 | 500000 | |
| Ti | 47 | 45 | He | 45.621 | 50.690 | 1.75 | 11281 | 3.02 | 10000 | |
| V | 51 | 45 | He | 58.083 | 64.536 | 1.35 | 373964 | 0.14 | 10000 | |
| Cr | 52 | 45 | He | 44.240 | 49.155 | 0.52 | 333112 | 0.86 | 10000 | |
| Mn | 55 | 45 | He | 5166.906 | 5741.007 | 1.07 | 30656628 | 0.42 | 50000 | |
| Fe | 56 | 45 | He | 220.137 | 244.596 | 0.27 | 1685041 | 1.46 | 1000000 | |
| Co | 59 | 45 | He | 42.547 | 47.275 | 0.87 | 480134 | 1.19 | 10000 | |
| Ni | 60 | 45 | He | 43.193 | 47.992 | 1.62 | 125864 | 0.66 | 10000 | |
| Cu | 63 | 45 | He | 41.694 | 46.327 | 0.72 | 333925 | 0.88 | 10000 | |
| Zn | 66 | 115 | He | 90.948 | 101.053 | 0.53 | 155812 | 0.49 | 50000 | |
| As | 75 | 115 | He | 43.123 | 47.915 | 0.88 | 59550 | 0.79 | 2000 | |
| Se | 78 | 72 | H2 | 38.927 | 43.252 | 0.31 | 10709 | 2.44 | 10000 | |
| Se | 78 | 115 | He | 41.767 | 46.407 | 1.01 | 5163 | 0.67 | 10000 | |
| Sr | 88 | 115 | NoGas | 207.450 | 230.500 | 0.97 | 8341097 | 2.30 | 50000 | |
| Mo | 95 | 115 | NoGas | 42.741 | 47.490 | 1.12 | 354582 | 1.40 | 10000 | |
| Ag | 107 | 115 | NoGas | 16.655 | 18.506 | 1.66 | 382330 | 1.05 | 5000 | |
| Cd | 111 | 115 | He | 8.042 | 8.935 | 0.87 | 23392 | 1.14 | 10000 | |
| Sn | 118 | 115 | He | 44.952 | 49.947 | 0.31 | 315563 | 0.57 | 10000 | |
| Sn | 118 | 115 | NoGas | 45.151 | 50.168 | 1.85 | 619194 | 0.26 | 10000 | |
| Sb | 121 | 115 | NoGas | 46.491 | 51.656 | 1.04 | 904518 | 1.50 | 10000 | |
| Ba | 137 | 165 | NoGas | 60.656 | 67.395 | 1.06 | 449791 | 0.31 | 50000 | |
| Tl | 205 | 165 | NoGas | 41.506 | 46.118 | 1.75 | 2305326 | 0.86 | 5000 | |
| Pb | 208 | 165 | NoGas | 42.758 | 47.509 | 0.78 | 3283295 | 0.34 | 50000 | |

**QC ISTD Table**

| Name | Mass | Tune Mode | CPS | %RSD | Ref CPS | %Rec | %QC Low | %QC High | QC Flag |
|---|---|---|---|---|---|---|---|---|---|
| Li | 6 | NoGas | 33163 | 0.53 | 29515 | 112.36 | 70 | 120 | |
| Sc | 45 | H2 | 147617 | 1.25 | 120885 | 122.11 | 70 | 120 | ISTD Failed |
| Sc | 45 | He | 117390 | 1.34 | 90842 | 129.22 | 70 | 120 | ISTD Failed |
| Sc | 45 | NoGas | 736810 | 0.11 | 581580 | 126.69 | 70 | 120 | ISTD Failed |
| Ge | 72 | H2 | 67402 | 2.16 | 55430 | 121.60 | 70 | 120 | ISTD Failed |
| Ge | 72 | He | 82253 | 1.07 | 65257 | 126.05 | 70 | 120 | ISTD Failed |
| Ge | 72 | NoGas | 253134 | 0.28 | 205384 | 123.25 | 70 | 120 | ISTD Failed |
| In | 115 | H2 | 1735406 | 1.38 | 1539397 | 112.73 | 70 | 120 | |
| In | 115 | He | 976068 | 0.34 | 837505 | 116.54 | 70 | 120 | |
| In | 115 | NoGas | 2262040 | 1.62 | 1847093 | 122.46 | 70 | 120 | ISTD Failed |
| Tb | 159 | H2 | 3641823 | 0.52 | 3319426 | 109.71 | 70 | 120 | |
| Tb | 159 | He | 2440999 | 0.62 | 2158455 | 113.09 | 70 | 120 | |
| Tb | 159 | NoGas | 3592082 | 1.15 | 3040386 | 118.15 | 70 | 120 | |
| Ho | 165 | H2 | 3542318 | 0.81 | 3213372 | 110.24 | 70 | 120 | |
| Ho | 165 | He | 2358886 | 0.48 | 2137675 | 110.35 | 70 | 120 | |
| Ho | 165 | NoGas | 3509499 | 1.04 | 2965292 | 118.35 | 70 | 120 | |

# US EPA Tune Check Sample Report

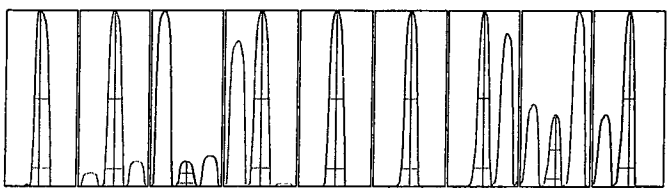
**Batch Folder** D:\DATA\141203A.b
**Report Comment** C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
**Instrument Name** G3281A JP12101628

**[NoGas]**

| Mass | Count (Mean) | RSD% (Actual) | RSD% (Required) | RSD% (Flag) |
|---|---|---|---|---|
| 9 | 2131090 | 0.52 | 5.00 | |
| 24 | 8677913 | 0.59 | 5.00 | |
| 25 | 1245352 | 0.73 | 5.00 | |
| 26 | 1497193 | 0.30 | 5.00 | |
| 59 | 30276472 | 0.40 | 5.00 | |
| 115 | 66877159 | 0.52 | 5.00 | |
| 206 | 21615453 | 1.41 | 5.00 | |
| 207 | 18969412 | 1.63 | 5.00 | |
| 208 | 45474187 | 1.28 | 5.00 | |

| Mass | Replicate 1 Count | Replicate 2 Count | Replicate 3 Count | Replicate 4 Count | Replicate 5 Count |
|---|---|---|---|---|---|
| 9 | 2124416 | 2119919 | 2131671 | 2130597 | 2148848 |
| 24 | 8635673 | 8734716 | 8691223 | 8613603 | 8714351 |
| 25 | 1250950 | 1248723 | 1244583 | 1230029 | 1252476 |
| 26 | 1501375 | 1496739 | 1490577 | 1496036 | 1501238 |
| 59 | 30173176 | 30206452 | 30348713 | 30456813 | 30197205 |
| 115 | 66792714 | 66744016 | 66662910 | 66688806 | 67497347 |
| 206 | 21383337 | 21331183 | 21473822 | 21930488 | 21958434 |
| 207 | 18613364 | 18711631 | 19013192 | 19140462 | 19368409 |
| 208 | 44826371 | 44983367 | 45435213 | 46021594 | 46104391 |

**Integration Time [sec] =** 0.1



| Mass | Peak Height | Axis (Actual) | Axis (Required) | Axis (Flag) | Width-X% (Actual) | Width-X% (Required) | Width-X% (Flag) |
|---|---|---|---|---|---|---|---|
| 9 | 337782 | 8.95 | 8.9 - 9.1 | | 0.770 | 0.900 | |
| 24 | 1416245 | 24.05 | 23.9 - 24.1 | | 0.763 | 0.900 | |
| 25 | 203368 | 25.05 | 24.9 - 25.1 | | 0.736 | 0.900 | |
| 26 | 244186 | 26.05 | 25.9 - 26.1 | | 0.763 | 0.900 | |
| 59 | 4981059 | 59.05 | 58.9 - 59.1 | | 0.762 | 0.900 | |
| 115 | 11957205 | 115.05 | 114.9 - 115.1 | | 0.704 | 0.900 | |
| 206 | 4081876 | 206.05 | 205.9 - 206.1 | | 0.726 | 0.900 | |
| 207 | 3573462 | 207.05 | 206.9 - 207.1 | | 0.709 | 0.900 | |
| 208 | 8681283 | 208.05 | 207.9 - 208.1 | | 0.713 | 0.900 | |

**X% =** 10 **Integration Time [sec] =** 0.1 **Acquisition Time [sec] =** 235 **Y Axis =** Linear

**Tune Parameters**

**## Plasma Paramters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.45 | L/min | | | |
| RF Matching | 2.50 | V | Option Gas | 0.0 | % | | | |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps | | | |
| S/C Temp | 2 | °C | | | | | | |

**## Lenses Parameters ##**

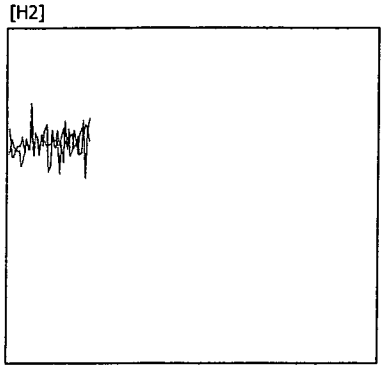
| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 12.6 | V | | | |
| Extract 2 | -195.0 | V | Cell Entrance | -30 | V | | | |
| Omega Bias | -75 | V | Cell Exit | -50 | V | | | |
| Deflect | 14.0 | V | | | | | | |

**## Cell Parameters ##**

| ParameterName | Value | Unit | ParameterName | Value | Unit | ParameterName | Value | Unit |
|---|---|---|---|---|---|---|---|---|
| Use Gas | false | | 3rd Gas Flow | 0 | % | | | |
| He Flow | 0.0 | mL/min | OctP Bias | -8.0 | V | | | |
| H2 Flow | 0.0 | mL/min | OctP RF | 180 | V | | | |
| Energy Discrimination | 5.1 | V | | | | | | |

# Current Signal

[H2]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 59 | 500 | 365 | 325.8 | 7.42 |
| 89 | 5000 | 3304 | 3307.0 | 3.71 |
| 140 | 2000 | 2358 | 2306.2 | 4.50 |
| 205 | 5000 | 6694 | 6553.8 | 2.86 |
| 56 | 1000 | 4101 | 3879.6 | 3.97 |
| 78 | 50 | 0 | 0.8 | 132.95 |
| 80 | 200 | 13 | 21.4 | 27.72 |
| **Integration Time [sec]** | | | 0.10 | |

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.45 | L/min |
| RF Matching | 2.50 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 12.6 | V |
| Extract 2 | -195.0 | V | Cell Entrance | -30 | V |
| Omega Bias | -75 | V | Cell Exit | -60 | V |
| Deflect | -0.8 | V | | | |

**## Cell Parameters ##**

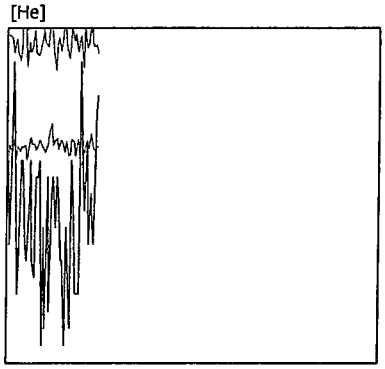
| | | | | | |
|---|---|---|---|---|---|
| Use Gas | true | | 3rd Gas Flow | 0 | % |
| He Flow | 0.0 | mL/min | OctP Bias | -18.0 | V |
| H2 Flow | 6.0 | mL/min | OctP RF | 180 | V |
| Energy Discrimination | 3.0 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.47E+2 | Pa | TMP Revolution | 100.0 | % |
| Analyzer Press | 1.42E-3 | Pa | Reflected Power | 73 | W |
| Forward Power | 1599 | W | | | |

# Current Signal

[He]



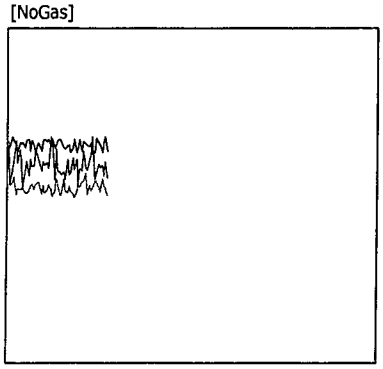
| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 59 | 2000 | 1286 | 1287.5 | 3.63 |
| 89 | 2000 | 1851 | 1918.2 | 3.97 |
| 140 | 5000 | 4229 | 4151.7 | 2.83 |
| 205 | 2000 | 4574 | 4589.1 | 2.59 |
| 156/140 | 1 | 0.567 % | 0.787 % | 19.60 |
| 75 | 20 | 16 | 8.6 | 47.69 |
| 78 | 50 | 15 | 21.0 | 26.46 |
| **Integration Time [sec]** | | 0.10 | | |

| | | | | | |
|---|---|---|---|---|---|
| **## Plasma Parameters ##** | | | | | |
| RF Power | 1600 | W | Carrier Gas | 0.45 | L/min |
| RF Matching | 2.50 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |
| **## Lenses Parameters ##** | | | | | |
| Extract 1 | 0.0 | V | Omega Lens | 12.6 | V |
| Extract 2 | -195.0 | V | Cell Entrance | -40 | V |
| Omega Bias | -75 | V | Cell Exit | -60 | V |
| Deflect | 0.0 | V | | | |
| **## Cell Parameters ##** | | | | | |
| Use Gas | true | | 3rd Gas Flow | 0 | % |
| He Flow | 3.4 | mL/min | OctP Bias | -19.0 | V |
| H2 Flow | 0.0 | mL/min | OctP RF | 180 | V |
| Energy Discrimination | 5.0 | V | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Meters** | | | | | |
| IF/BK Press | 2.42E+2 | Pa | TMP Revolution | 100.0 | % |
| Analyzer Press | 3.61E-4 | Pa | Reflected Power | 75 | W |
| Forward Power | 1599 | W | | | |

# Current Signal

[NoGas]



| Mass | Range | Count | Avg. Count | RSD [%] |
|---|---|---|---|---|
| 7 | 1000 | 550 | 591.4 | 5.97 |
| 59 | 5000 | 2999 | 2937.7 | 3.99 |
| 89 | 10000 | 4987 | 5221.8 | 3.18 |
| 140 | 10000 | 6289 | 6429.9 | 2.53 |
| 205 | 10000 | 6314 | 6511.6 | 2.18 |
| 156/140 | 1 | 0.668 % | 0.565 % | 21.87 |
| 70/140 | 2 | 1.876 % | 1.471 % | 12.79 |

**Integration Time [sec]** 0.10

**## Plasma Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| RF Power | 1600 | W | Carrier Gas | 0.45 | L/min |
| RF Matching | 2.50 | V | Option Gas | 0.0 | % |
| Smpl Depth | 8.0 | mm | Nebulizer Pump | 0.10 | rps |
| S/C Temp | 2 | °C | | | |

**## Lenses Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Extract 1 | 0.0 | V | Omega Lens | 12.6 | V |
| Extract 2 | -195.0 | V | Cell Entrance | -30 | V |
| Omega Bias | -75 | V | Cell Exit | -50 | V |
| Deflect | 14.0 | V | | | |

**## Cell Parameters ##**

| | | | | | |
|---|---|---|---|---|---|
| Use Gas | false | | 3rd Gas Flow | 0 | % |
| He Flow | 0.0 | mL/min | OctP Bias | -8.0 | V |
| H2 Flow | 0.0 | mL/min | OctP RF | 180 | V |
| Energy Discrimination | 5.1 | V | | | |

**Meters**

| | | | | | |
|---|---|---|---|---|---|
| IF/BK Press | 2.40E+2 | Pa | TMP Revolution | 100.0 | % |
| Analyzer Press | 2.57E-4 | Pa | Reflected Power | 75 | W |
| Forward Power | 1599 | W | | | |

SJH 12/3/14

| 2%HNO3 / 2%HCl BLK | | | | |
|---|---|---|---|---|
| AMOUNT | REAGENT | MANUFACTURER | LOT | OPEN DATE |
| 40 mL | HCL | BDH | 4114020 | 12/03/14 |
| 40 mL | HNO3 | JT BAKER | 0000067379 | 12/03/14 |
| Prepared in 2000 ml DI Water | | | | |
| STD 1 / LDL 200.7 | | | | |
| AMOUNT | STD | MANUFACTURER | LOT | EXP DATE |
| 0.250 mL | 200.7 LDL | O2SI | 1052642-33103 | 11/01/14 |
| Prepared in 50 ml 2%HNO3/2%HCl | | | | |
| STD 3 / HDL 200.7 | | | | |
| 0.5 mL | CCV-A | Environmental Express | 1428118-34178 | 10/14/15 |
| 0.5 mL | CCV-B | Environmental Express | 1428119-34179 | 10/14/15 |
| 0.5 mL | CCV-C | Environmental Express | 1428120-34180 | 10/14/15 |
| Prepared in 100 ml 2%HNO3/2%HCl | | | | |
| STD 2 / CCV1 200.7 | | | | |
| AMOUNT | STD | PREP DATE | EXP DATE | |
| 25mL | STD 3 | TODAY | 1 WEEK | |
| 25mL | 2%HNO3/2%HCl | TODAY | 1 WEEK | |
| CCV2 200.7 | | | | |
| 15mL | STD 3 | TODAY | 1 WEEK | |
| 25mL | 2%HNO3/2%HCl | TODAY | 1 WEEK | |

| 200.7 ICV | | | | |
|---|---|---|---|---|
| AMOUNT | STD | MANUFACTURER | LOT | EXP DATE |
| 0.25ML | QCS ICV A | CPI | 13I145-32869 | 03/18/15 |
| 0.25ML | QCS ICV B | CPI | 13I145-32870 | 03/18/15 |
| Prepared in 50ml 2%HNO3/2%HCl | | | | |
| 200.7 ICSA | | | | |
| 0.5mL | Al | CPI | 14D237-33868 | 01/15/16 |
| 0.5mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| 0.5mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| 0.5mL | Fe | O2SI | 1062942-33880 | 01/12/16 |
| Prepared in 50 ml 2%HNO3/2%HCl | | | | |
| 200.7 ICSAB | | | | |
| 0.5mL | Al | CPI | 14D237-33868 | 01/15/16 |
| 0.5mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| 0.5mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| 0.5mL | Fe | O2SI | 1062942-33880 | 01/12/16 |
| 0.25mL | INT SPECIAL MIX | O2SI | 1054694-33223 | 1/1/15 |
| Prepared in 50 ml 2%HNO3/2%HCl | | | | |

JAH 12/03/14

SJH 12/3/14

| 1%HNO3 / 5%HCl BLK | | | | |
|---|---|---|---|---|
| AMOUNT | REAGENT | MANUFACTURER | LOT | OPEN DATE |
| 100 mL | HCL | BDH | 4114020 | 12/03/14 |
| 20 mL | HNO3 | JT BAKER | 0000067379 | 12/03/14 |
| Prepared in 2000 ml DI Water | | | | |
| STD 1 / LDL 6010B/6010C | | | | |
| AMOUNT | STD | MANUFACTURER | LOT | EXP DATE |
| 0.5 mL | 6010 LDL | ABSOLUTE | 1062903-33879 | 08/01/15 |
| Prepared in 50 ml 1%HNO3/5%HCl | | | | |
| STD 3 / HDL 6010B/6010C | | | | |
| 1ML | CCV-A | Environmental Express | 1428118-34178 | 10/14/15 |
| 1ML | CCV-B | Environmental Express | 1428119-34179 | 10/14/15 |
| 1ML | CCV-C | Environmental Express | 1428120-34180 | 10/14/15 |
| Prepared in 100 ml 1%HNO3 / 5%HCl | | | | |
| STD 2 / CCV1 6010B/6010C/6010C | | | | |
| AMOUNT | STD | PREP DATE | EXP DATE | |
| 25mL | STD 3 | Today | 1 week | |
| 25mL | 1%HNO3/5%HCl | Today | 1 week | |
| CCV2 6010B/6010C | | | | |
| AMOUNT | STD | PREP DATE | EXP DATE | |
| 15mL | STD 3 | Today | 1 week | |
| 25mL | 1%HNO3/5%HCl | Today | 1 week | |

| 6010B/6010C ICSA | | | | |
|---|---|---|---|---|
| AMOUNT | STD | MANUFACTURER | LOT | EXP DATE |
| 1mL | Al | CPI | 14D237-33868 | 01/15/16 |
| 1mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| 1mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| 1mL | Fe | O2SI | 1062942-33880 | 01/12/16 |
| Prepared in 50 ml 1%HNO3/5%HCl | | | | |
| 6010B/6010C ICSAB | | | | |
| 1mL | Al | CPI | 14D237-33868 | 01/15/16 |
| 1mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| 1mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| 1mL | Fe | O2SI | 1062942-33880 | 01/12/16 |
| 0.5mL | INT SPECIAL MIX | O2SI | 1054694-33223 | 01/01/15 |
| Prepared in 50 ml 1%HNO3/5%HCl | | | | |
| 6010B/6010C ICV | | | | |
| 0.5ML | QCS ICV A | CPI | 13I145-32869 | 03/18/15 |
| 0.5ML | QCS ICV B | CPI | 13I145-32870 | 03/18/15 |
| Prepared in 50ml 1%HNO3/5%HCl | | | | |
| 6010B/6010C Internal Standard | | | | |
| AMOUNT | STD | MANUFACTURER | PREP | EXP |
| 2mL | Yttrium | O2SI | Today | 1 week |
| Prepared in 2L 1%HNO3 / 5%HCl | | | | |

JAH 12/03/14

SJH 12/3/14

**ICP-MS STANDARDS** Prep'd by: SJH
Prep Date: Today
Expires: 1 week

**Prep 1% HNO3/1.0%HCL**
20 mL HNO3 / 2000 mL Di Water
Lot #
20 mL HCL / 2000mL Di Water
Lot #

**Internal Standard Mix: Prep** 11/18/14

**Standard 4**

| Amount | STD | Manufacturer | Lot # |
|---|---|---|---|
| 50 uL | CCV-A | ENV EXPRESS | 1331823-33166 |
| 50 uL | CCV-B | ENV EXPRESS | 1331824-33167 |
| 50 uL | CCV-C | ENV EXPRESS | 1331825-33168 |

Prepared in 100 mL of 1% HNO3/1.0% HCL

**Standard 3**
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 2**
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 1**
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICP-MS ICV**

| Amount | STD | | |
|---|---|---|---|
| 50 uL | QCS ICV A | CPI | 13I145-32869 |
| 50 uL | QCS ICV B | CPI | 13I145-32870 |

Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICSA Prep:**
1 mL ICSA-DF2 O2Si 1053467-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

**ICSAB Prep:**
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2SI 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

**Second Source As:**
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

JAH 12/3/14

SJH 11/17/14

| Hg WORKING STANDARDS 7470A/7471/245.1 | | | | |
|---|---|---|---|---|
| Hg WORKING STD | 1ml 10ug/ml Hg STOCK STD. and 2mL HNO3 JT Baker LOT#50770 to final vol 200mL with milipore water | 10/21/14 | exp: 11/18/14 | final conc: 50ug/L expires daily |
| Hg WORKING ICV | 1ml 10ug/ml Hg STOCK ICV ~~and 2mL HNO3 JT Baker LOT#50770~~ to final vol 200mL with milipore water | 10/21/14 | exp: 11/18/14 | final conc: 50ug/L expires daily |

SJH 11/17/14

SJH 11/18/14

**Internal Standard Concentration**

| Amt | STD | Element | Vendor | Lot# | Final Conc. in Std | Expires |
|---|---|---|---|---|---|---|
| 50uL | 1001 ug/mL | Li | BDH | F2-L102140-33279 | 200 ug/L | 02/01/15 |
| 125uL | 1000 ug/mL | Sc | o2si | 1051538-32901 | 500ug/L | 03/30/15 |
| 125uL | 1000 ug/mL | Ge | CPI | 14H207-34125 | 500ug/L | 04/07/14 |
| 125uL | 1000 ug/mL | In | CPI | 13H191-32872 | 500ug/L | 03/20/15 |
| 125uL | 1000 ug/mL | Tb | CPI | 13J004-33038 | 500ug/L | 04/15/15 |
| 125uL | 1000 ug/mL | Ho | CPI | 13G236-32873 | 500ug/L | 03/20/15 |

Prep: 11/18/14 By: SJH Prep in - 1%HNO3/1.0%HCL: Final Volume: 250mL

Expires: 12/17/14

SJH 11/18/14

SJH 11/18/14

6020/2008

(A)

**ICP-MS STANDARDS** Prep'd by: SJH
Prep Date: Today
Expires: 1 week

**Prep 1% HNO3/1.0%HCL**
20 mL HNO3 / 2000 mL DI Water
Lot #
20 mL HCL / 2000mL DI Water
Lot #

**Internal Standard Mix: Prep** 11/18/14

**Standard 4**

| Amount | STD | Manufacturer | Lot # |
|---|---|---|---|
| 50 uL | CCV-A | ENV EXPRESS | 1331823-33166 |
| 50 uL | CCV-B | ENV EXPRESS | 1331824-33167 |
| 50 uL | CCV-C | ENV EXPRESS | 1331825-33168 |

Prepared in 100 mL of 1% HNO3/1.0% HCL

**Standard 3**
Amount STD
25 mL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 2**
Amount STD
500 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**Standard 1**
Amount STD
50 uL Standard 4
Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICP-MS ICV**

| Amount | STD | | |
|---|---|---|---|
| 50 uL | QCS ICV A | CPI | 13I145-32869 |
| 50 uL | QCS ICV B | CPI | 13I145-32870 |

Prepared in 50 mL of 1% HNO3/1.0% HCL

**ICSA Prep:**
1 mL ICSA-DF2 O2SI 1053467-33165
Prepared in 10 mL of 1% HNO3/1.0% HCL

**ICSAB Prep:**
1mL ICSA CPI 12J143-33110
100uL INT - DF10 O2SI 1054694-33223
Prepared in 10 mL of 1% HNO3/1.0% HCL

**Second Source As:**
25 uL Metals Mix #2 AbsoluteGrade 161613-33063
Prepared in 100 mL of 1% HNO3/ 1% HCl

SJH 11/18/14

SJH 11/18/14

200.7

(A)

| 2%HNO3 / 2%HCl BLK | | | | |
|---|---|---|---|---|
| AMOUNT | REAGENT | MANUFACTURER | LOT | OPEN DATE |
| 40 mL | HCL | BDH | 4114020 | 11/18/14 |
| 40 mL | HNO3 | JT BAKER | 0000067379 | 11/18/14 |
| Prepared in 2000 ml DI Water | | | | |
| **STD 1 / LDL 200.7** | | | | |
| AMOUNT | STD | MANUFACTURER | LOT | EXP DATE |
| 0.250 mL | 200.7 LDL | O2SI | 1052542-33103 | 11/01/14 |
| Prepared in 50 ml 2%HNO3/2%HCl | | | | |
| **STD 3 / HDL 200.7** | | | | |
| 0.5 mL | CCV-A | Environmental Express | 1331823-33166 | 11/18/14 |
| 0.5 mL | CCV-B | Environmental Express | 1331824-33167 | 11/18/14 |
| 0.5 mL | CCV-C | Environmental Express | 1331825-33168 | 11/18/14 |
| Prepared in 100 ml 2%HNO3/2%HCl | | | | |
| **STD 2 / CCV1 200.7** | | | | |
| AMOUNT | STD | PREP DATE | EXP DATE | |
| 25mL | STD 3 | TODAY | 1 WEEK | |
| 25mL | 2%HNO3/2%HCl | TODAY | 1 WEEK | |
| **CCV2 200.7** | | | | |
| 15mL | STD 3 | TODAY | 1 WEEK | |
| 25mL | 2%HNO3/2%HCl | TODAY | 1 WEEK | |

| 200.7 ICV | | | | |
|---|---|---|---|---|
| AMOUNT | STD | MANUFACTURER | LOT | EXP DATE |
| 0.25ML | QCS ICV A | CPI | 13I145-32869 | 03/18/15 |
| 0.25ML | QCS ICV B | CPI | 13I145-32870 | 03/18/15 |
| Prepared in 50ml 2%HNO3/2%HCl | | | | |
| **200.7 ICSA** | | | | |
| 0.5mL | Al | CPI | 14D237-33868 | 01/15/16 |
| 0.5mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| 0.5mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| 0.5mL | Fe | O2SI | 1062942-33880 | 01/12/16 |
| Prepared in 50 ml 2%HNO3/2%HCl | | | | |
| **200.7 ICSAB** | | | | |
| 0.5mL | Al | CPI | 14D237-33868 | 01/15/16 |
| 0.5mL | Ca | CPI | 14D176-33867 | 01/15/16 |
| 0.5mL | Mg | CPI | 14F190-33865 | 01/15/16 |
| 0.5mL | Fe | O2SI | 1062942-33880 | 01/12/16 |
| 0.25mL | INT SPECIAL MIX | O2SI | 1054694-33223 | 1/1/15 |
| Prepared in 50 ml 2%HNO3/2%HCl | | | | |

SJH 10/18/14

_M3015

# Metals Digestion Worksheet

**Method Name** 3015 Digestion **Prep Method** M3015 **Set** 141126B **Units** mL

| Spikes | |
|---|---|
| Spiked ID 1 | LCSW LOT#1066596-34172 |
| Spiked ID 2 | LCSW LOT#1066556-34173 |
| Spiked ID 3 | |
| Spiked ID 4 | |
| **Spiked By** | NM Date: 11/26/14 11:23:00 AM |
| **Witnessed By** | SJH Date: 11/26/14 11:23:00 AM |

| | |
|---|---|
| Starting Temp: | 41 c |
| Ending Temp: | 170 c |
| Temperature Type: | Microwave |
| Sufficient Vol for Matrix QC: | Yes |
| **End Date/Time** | 11/26/14 12:30 |

| | Sample | Sample Container | Spike Amount | Spike ID | Digested Amount | Final Volume | Start Date/Time | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 141126B Blk | | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave |
| 2 | 141126B LCS | | 90uL | 1+2 | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave |
| 3 | AZ06185 | AZ06185W08 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Total |
| 4 | AZ06185 FF | AZ06185W07 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Field Filter |
| 5 | AZ06186 | AZ06186W10 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Total |
| 6 | AZ06186 FF | AZ06186W09 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Field Filter |
| 7 | AZ06187 | AZ06187W10 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Total |
| 8 | AZ06187 FF | AZ06187W09 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Field Filter |
| 9 | AZ06189 | AZ06189W07 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Total |
| 10 | AZ06189 FF | AZ06189W08 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Field Filter |
| 11 | AZ06190 | AZ06190W04 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Total |
| 12 | AZ06190 FF | AZ06190W05 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Field Filter |
| 13 | AZ07202 | AZ07202W11 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Lab Filter |
| 14 | AZ07203 | AZ07203W11 | | | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Lab Filter |
| 15 | AZ07203 MS | AZ07203W11 | 90uL | 1+2 | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Lab Filter |
| 16 | AZ07203 MSD | AZ07203W11 | 90uL | 1+2 | 45mL | 50mL | 11/26/14 11:23 | equip: MultiWave Lab Filter |

| Solvent and Lot# |
|---|
| HNO3 J.T.B #67379 1281 |
| |
| |
| |
| |

| Sample COC Transfer | |
|---|---|
| **Sample prep employee Initials** | nm |
| **Analyst's initials** | SJH |
| **Date** | 11/26/14 |
| **Time** | 16:28 |
| **Moved to** | Metals |

| Technician's Initials | |
|---|---|
| **Scanned By** | nm |
| **Sample Preparation** | nm |
| **Digestion** | nm |
| **Bring up to volume** | nm |
| **Modified** | 11/26/14 9:19:36 AM |

**Reviewed By:** SJH **Date:** 11/26/14

# 6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 1 | 03 Dec 2014 | 17:00 | Calibration Blank | | 141203A | 1. |
| 2 | 03 Dec 2014 | 17:06 | Standard 1 | | 141203A | 1. |
| 3 | 03 Dec 2014 | 17:12 | Standard 2 | | 141203A | 1. |
| 4 | 03 Dec 2014 | 17:18 | Standard 3 | | 141203A | 1. |
| 5 | 03 Dec 2014 | 17:24 | Standard 4 | | 141203A | 1. |
| 6 | 03 Dec 2014 | 17:30 | ICV | | 141203A | 1. |
| 7 | 03 Dec 2014 | 17:36 | ICV As 50 ppb | | 141203A | 1. |
| 8 | 03 Dec 2014 | 17:42 | ICB | | 141203A | 1. |
| 13 | 03 Dec 2014 | 18:12 | CCV | | 141203A | 1. |
| 14 | 03 Dec 2014 | 18:24 | CCB | | 141203A | 1. |
| 15 | 03 Dec 2014 | 18:30 | ICSA | | 141203A | 1. |
| 16 | 03 Dec 2014 | 18:42 | ICSAB | | 141203A | 1. |
| 17 | 03 Dec 2014 | 18:54 | 141126B BLK | | 141203A | 1. |
| 18 | 03 Dec 2014 | 19:00 | 141126B LCS | | 141203A | 1. |
| 29 | 03 Dec 2014 | 20:12 | AZ07202W11 | | 141203A | 1. |
| 30 | 03 Dec 2014 | 20:18 | AZ07203W11 | | 141203A | 1. |
| 31 | 03 Dec 2014 | 20:24 | AZ07203W11 MS | | 141203A | 1. |
| 32 | 03 Dec 2014 | 20:30 | AZ07203W11 MSD | | 141203A | 1. |
| 33 | 03 Dec 2014 | 20:36 | AZ07203W11-A | | 141203A | 1. |
| 34 | 03 Dec 2014 | 20:42 | AZ07203W11 1/5 | | 141203A | 5. |
| 35 | 03 Dec 2014 | 20:48 | CCV | | 141203A | 1. |
| 36 | 03 Dec 2014 | 21:00 | CCB | | 141203A | 1. |

# INORGANIC ANALYSIS

APPL, INC.

# INORGANIC ANALYSIS
## QC Summary

APPL, INC.

# WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 0.100 U | 0.10 | 0.100 | 0.028 | mg/L | 11/26/14 | 11/26/14 | #35OF-141126A-AZ07148 |
| EPA 9056 | SULFATE | 0.198 U | 1.00 | 0.198 | 0.090 | mg/L | 11/21/14 | 11/21/14 | #9056D-141121B-AZ07202 |
| SM 2320B | TOTAL ALKALINITY | 1.70 U | 2.0 | 1.70 | 0.85 | mg/L | 11/24/14 | 11/24/14 | #232W-141124A-AZ07203 |

*Wetlab SC-Blank-REG MDLs*
*Printed: 12/01/14 11:17:09 AM*

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 4.95 | 4.89 | 99.0 | 97.8 | 1.2 | 20 | 90-110 | 11/26/14 | 11/26/14 | 11/26/14 | 11/26/14 | #35OF-141126A-AZ07148 |

Comments:

# Laboratory Control Spike Recovery
## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level mg/L | SPK Result mg/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 9056 | SULFATE | 20.0 | 19.4 | 97.0 | 80-120 | 11/21/14 | 11/21/14 | #9056D-141121B-AZ07202 |

Comments:

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SM 2320B | TOTAL ALKALINITY AS CA | 250 | 261 | 259 | 104 | 104 | 0.77 | 20 | 90-110 | 11/24/14 | 11/24/14 | 11/24/14 | 11/24/14 | #232W-141124A-AZ07203 |

Comments: _____

# INORGANIC ANALYSIS
## Sample Data

APPL, INC.

# Wet Lab Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright

Project: 749435 Red Hill Phase 1b TO 0068

***Sample ID: HW111214-01***

Sample Collection Date: 11/12/14

**APPL ID: AZ07202**

ARF: 74924

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 0.56 | 0.10 | 0.100 | 0.028 | mg/L | 1 | 11/26/14 | 11/26/14 |
| EPA 9056 | SULFATE | 28.9 | 1.00 | 0.198 | 0.090 | mg/L | 1 | 11/21/14 | 11/21/14 |
| SM 2320B | TOTAL ALKALINITY AS CACO3 | 52.9 | 2.0 | 1.70 | 0.85 | mg/L | 1 | 11/24/14 | 11/24/14 |

*Printed: 12/01/14 11:17:04 AM*

*APPL-F1-SC-NoMC-REG MDLs*

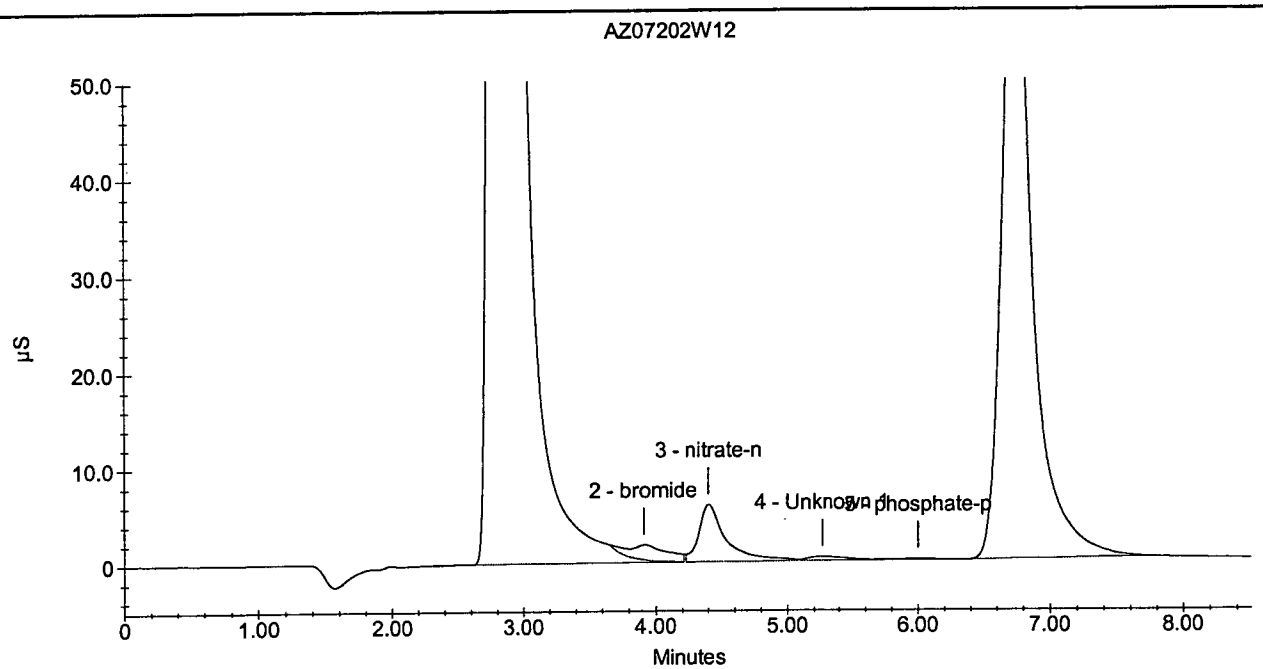
# Sample Analysis Report

Sample Name : AZ07202W12
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_043.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 15:58:30
System Operator : mm
Injection Number : 43
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 2.84 | chloride | 139.6807 | 80459525 | 10201497 |
| 2 | 3.91 | bromide | 1.4479 | 279389 | 15575 |
| 3 | 4.40 | nitrate-n | 0.8401 | 848020 | 59656 |
| 4 | 5.27 | Unknown 1 | 0.0000 | 86458 | 4243 |
| 5 | 6.00 | phosphate-p | 0.1312 | 20493 | 1249 |
| 6 | 6.73 | sulfate | 28.9356 | 10858518 | 713128 |



# Wet Lab Analysis

Parsons
10235 S. Jordan Gateway Ste 300
South Jordan, UT 84095

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Gene Wright

Project: 749435 Red Hill Phase 1b TO 0068

***Sample ID: HW111214-02***

Sample Collection Date: 11/12/14

**APPL ID: AZ07203**

ARF: 74924

| Method | Analyte | Result | LOQ | LOD | DL | Units | DF | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 0.56 | 0.10 | 0.100 | 0.028 | mg/L | 1 | 11/26/14 | 11/26/14 |
| EPA 9056 | SULFATE | 28.7 | 1.00 | 0.198 | 0.090 | mg/L | 1 | 11/21/14 | 11/21/14 |
| SM 2320B | TOTAL ALKALINITY AS CACO3 | 53.6 | 2.0 | 1.70 | 0.85 | mg/L | 1 | 11/24/14 | 11/24/14 |

*Printed: 12/01/14 11:17:04 AM*

*APPL-F1-SC-NoMC-REG MDLs*

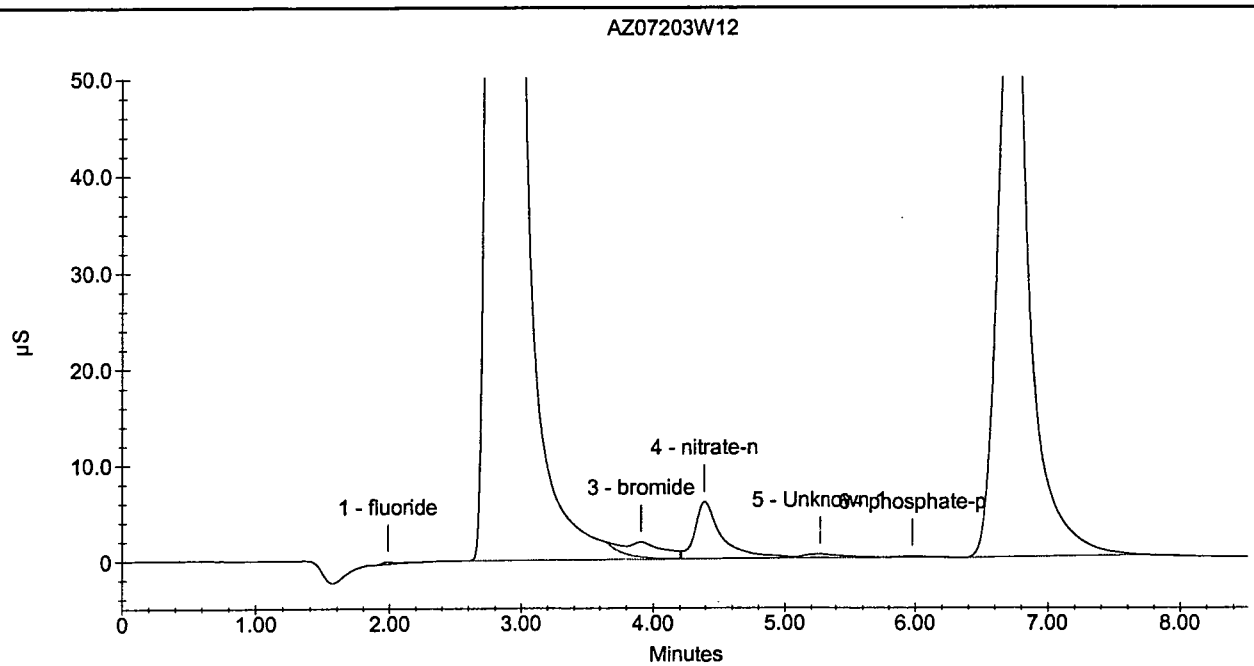
# Sample Analysis Report

Sample Name : AZ07203W12
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_030.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 13:32:37
System Operator : mm
Injection Number : 30
Multiplier : 1.00

Peak Information : All Peaks

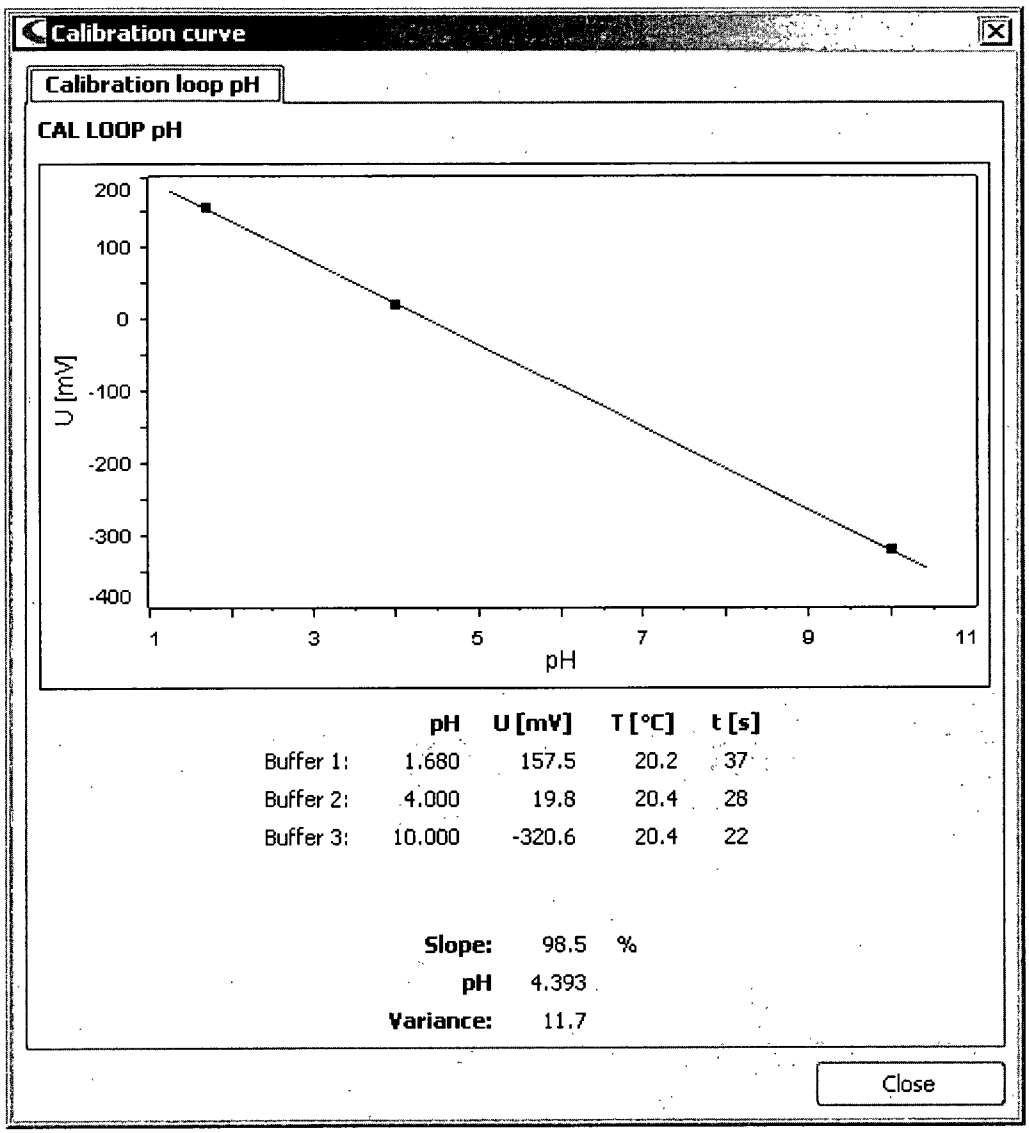
| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.99 | fluoride | 0.0851 | 14395 | 2289 |
| 2 | 2.83 | chloride | 139.0591 | 80098598 | 10013419 |
| 3 | 3.91 | bromide | 1.4200 | 272996 | 15630 |
| 4 | 4.39 | nitrate-n | 0.8262 | 829710 | 59305 |
| 5 | 5.27 | Unknown 1 | 0.0000 | 76561 | 3784 |
| 6 | 5.97 | phosphate-p | 0.1131 | 12814 | 1023 |
| 7 | 6.72 | sulfate | 28.7307 | 10779168 | 714500 |



# INORGANIC ANALYSIS
## Calibration Data

APPL, INC.

11/24/14 Tiamo Calibration Curve




| | pH | U [mV] | T [°C] | t [s] |
|---|---|---|---|---|
| Buffer 1: | 1.680 | 157.5 | 20.2 | 37 |
| Buffer 2: | 4.000 | 19.8 | 20.4 | 28 |
| Buffer 3: | 10.000 | -320.6 | 20.4 | 22 |

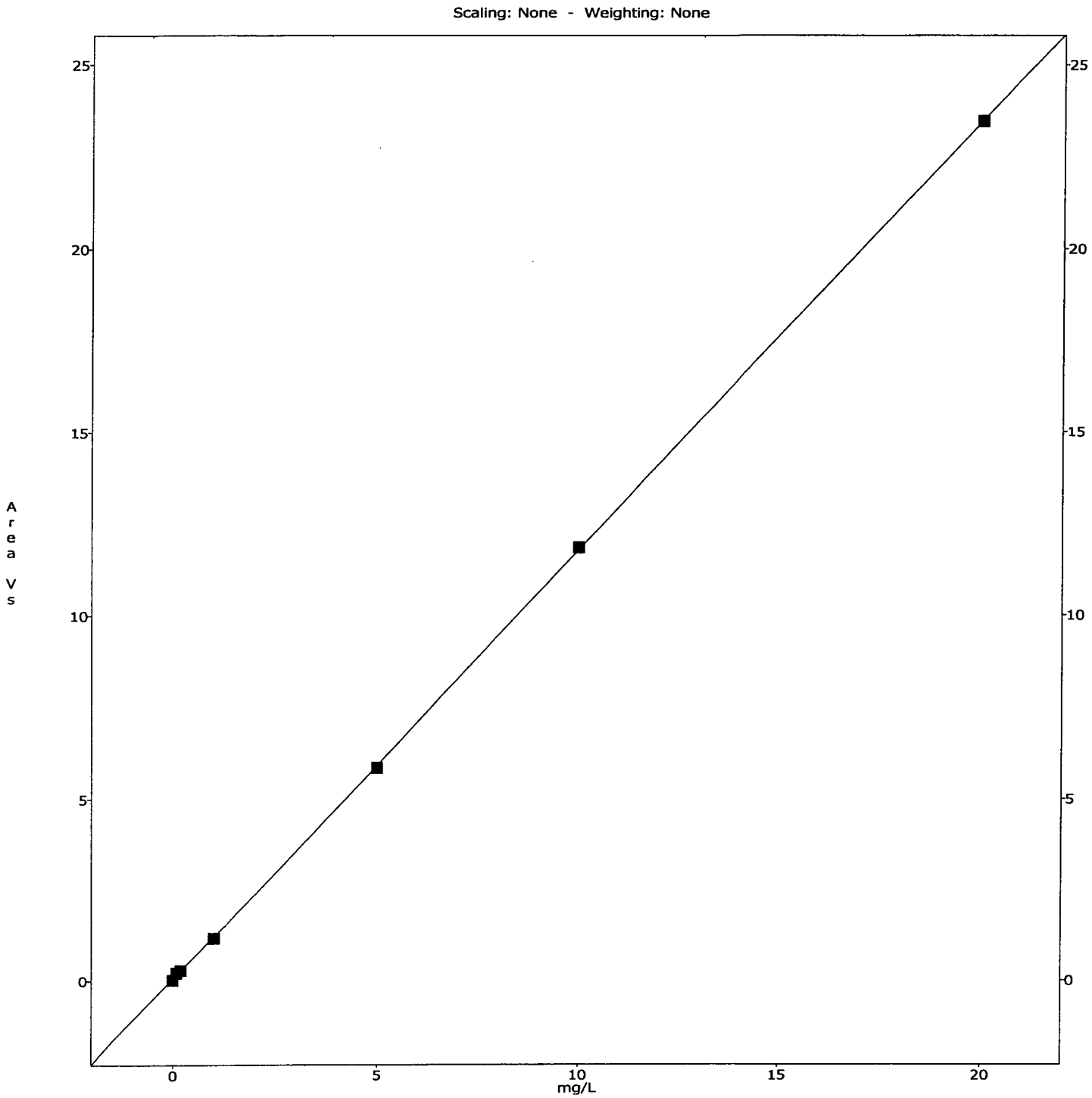
| | | |
|---|---|---|
| **Slope:** | 98.5 | % |
| **pH** | 4.393 | |
| **Variance:** | 11.7 | |

Close

# TOTOXN

| Lvl | Area | mg/L | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Replic STD | Replic % RSD | Residual 1st Poly |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23473230 | 20.0 | 23473230 | | | | | 0.0 | 0.0 | 0.1 |
| 2 | 11838016 | 10.0 | 11838016 | | | | | 0.0 | 0.0 | -0.6 |
| 3 | 5856448 | 5.0 | 5856448 | | | | | 0.0 | 0.0 | 1.0 |
| 4 | 1186771 | 1.0 | 1186771 | | | | | 0.0 | 0.0 | 3.4 |
| 5 | 302099 | 0.2 | 302099 | | | | | 0.0 | 0.0 | -5.3 |
| 6 | 236595 | 0.1 | 236595 | | | | | 0.0 | 0.0 | -54.7 |
| 7 | 28899 | 0.0 | 28899 | | | | | 0.0 | 0.0 | |

1st Order Poly
Conc = 8.534e-007 Area - 4.723e-002
r = 1.0000




Printed: Wednesday, November 26, 2014 - 02:46 PM

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74924 SDG: 74924
Initial Calibration Source: CPI
Continuing Calibration Source: O2SI
Analysis Date: 11/26/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 13:58 | %R(1) | True ICV | Found 14:01 | %R(1) | True CCV1 | Found 14:19 | %R(1) | |
| TOXN | 5 | 4.94781 | 99.0 | 5 | 5.00016 | 100 | 5 | 4.89969 | 98.0 | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74924 SDG: 74924

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CCB 11/26/14 13:59 | C | ICB 11/26/14 14:02 | C | CCB 11/26/14 14:20 | C | | C | | C | |
| TOXN | .100 | U | .100 | U | .100 | U | | | | | |

OPERATOR: Aileen
ACQ. TIME: Nov 26, 2014 13:46:09
DATA FILENAME: I:\LACHAT\OMNION\141126NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\141126NA.TRA

TRAY DESCRIPTION:
Created: Nov 26, 2014 11:12:33
Modified: Nov 26, 2014 14:38:56
NO3/TOTOXN 141126NA
DATA DESCRIPTION:
Created: Nov 26, 2014 13:46:09
Modified: Nov 26, 2014 13:46:09

Multi-Channel Table
Type: DQM
Channel Range: 1 to 8 -- Cup Range: 1 to 50

| Cup | Sample ID | Sample Type | Sampling Time | # of Reps | TOTOXN (mg/L) |
|---|---|---|---|---|---|
| 6 | CCB | Blank | 13:59:49 | 1 | -0.0338 |
| 6 | ICB | Blank | 14:02:52 | 1 | -0.0309 |
| 6 | CCB | Blank | 14:20:41 | 1 | -0.0188 |
| 6 | CCB | Blank | 14:41:40 | 1 | -0.0295 |
| 7 | ICV | RelChkStd | 14:01:20 | 1 | 5.0002 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | 0.0033 |
| 15 | CCV | RelChkStd | 13:58:17 | 1 | 4.9478 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -1.0436 |
| 15 | CCV | RelChkStd | 14:19:11 | 1 | 4.8997 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | -2.0060 |
| 15 | CCV | RelChkStd | 14:40:09 | 1 | 5.0783 |
| | | | Known Concentration: | | 5.0000 |
| | | | % Difference: | | 1.5661 |

INORGANIC ANALYSES
AUTO CALIBRATION

Analytical Method: 300/9056A

Lab Name: APPL, Inc.

Instrument ID: Dionex

Autocal ID: 140916a

Concentration Units (mg/L or mg/kg): mg/L

| Analyte | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| | Autocal 13:01 | Autocal 13:12 | Autocal 13:23 | Autocal 13:35 | Autocal 13:46 | Autocal 13:57 | Autocal 14:08 |
| Bromide | 16482 | 110811 | 530269 | 1040423 | 2811782 | 3853149 | 5758749 |
| Chloride | 105181 | 469930 | 2266776 | 4619999 | 13083991 | 19156002 | 29150289 |
| Fluoride | ND | 65241 | 295885 | 665047 | 1822387 | 2347304 | 3619418 |
| Nitrate-N | 42537 | 207636 | 1096945 | 2181530 | 5982651 | 8679959 | 13214287 |
| Nitrite-N | 9360 | 82285 | 427556 | 866240 | 2398640 | 3309962 | 4979067 |
| Phosphate-P | 37335 | 77961 | 423664 | 767089 | 2009102 | 2861951 | 4282289 |
| Sulfate | 70553 | 260443 | 1664932 | 3268878 | 8925096 | 12862977 | 19464398 |

Comments:

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Calibration
ARF No: SDG:
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 09/16/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True ICV | Found 14:20 | %R(1) | True | Found | %R(1) | True | Found | %R(1) | |
| bromide | 12.5 | 12.1534 | 97.2 | | | | | | | |
| chloride | 20 | 18.9785 | 94.9 | | | | | | | |
| fluoride | 2.5 | 2.39410 | 95.8 | | | | | | | |
| Nitrate(NO3)-N | 5 | 4.85672 | 97.1 | | | | | | | |
| Nitrite(NO2)-N | 3.04 | 2.92650 | 96.3 | | | | | | | |
| phosphate-p | 5 | 4.91730 | 98.3 | | | | | | | |
| sulfate | 20 | 19.3370 | 96.7 | | | | | | | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

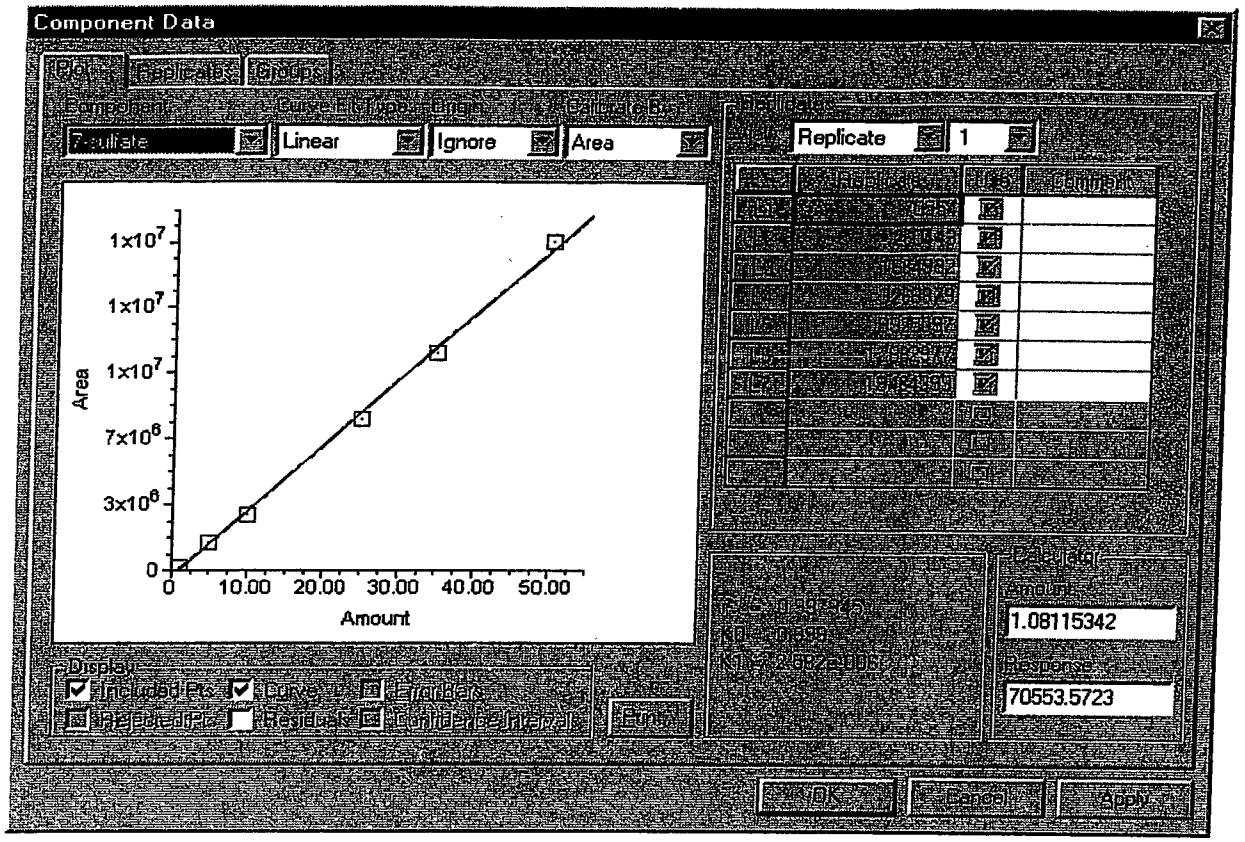
Lab Name: A.P.P.L. INC. Contract: Calibration

ARF No.: SDG:

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ICB 09/16/14 14:31 | C | | C | | C | | C | | C | |
| bromide | .500 | U | | | | | | | | | |
| chloride | 1.000 | U | | | | | | | | | |
| fluoride | 1.000 | U | | | | | | | | | |
| Nitrate(NO3)-N | .200 | U | | | | | | | | | |
| Nitrite(NO2)-N | .200 | U | | | | | | | | | |
| phosphate-p | 1.000 | U | | | | | | | | | |
| sulfate | 1.000 | U | | | | | | | | | |


Component Data
Plot
Replicates
Groups
Linear
Ignore
Area
Replicate
1
1x10^7
1x10^7
1x10^7
7x10^6
3x10^6
0
Area
0
10.00
20.00
30.00
40.00
50.00
Amount
Display
Included Pts
Curve
Error Bars
Residuals
Confidence Interval
Amount
1.08115342
Response
70553.5723
OK
Cancel
Apply

# Calibration Update Report

**Sample Name : CAL STD #1 9/16/14**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_012.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:01:17

Calibration Date : 9/16/14 13:12:12
System Operator : mm
Injection Number : 12

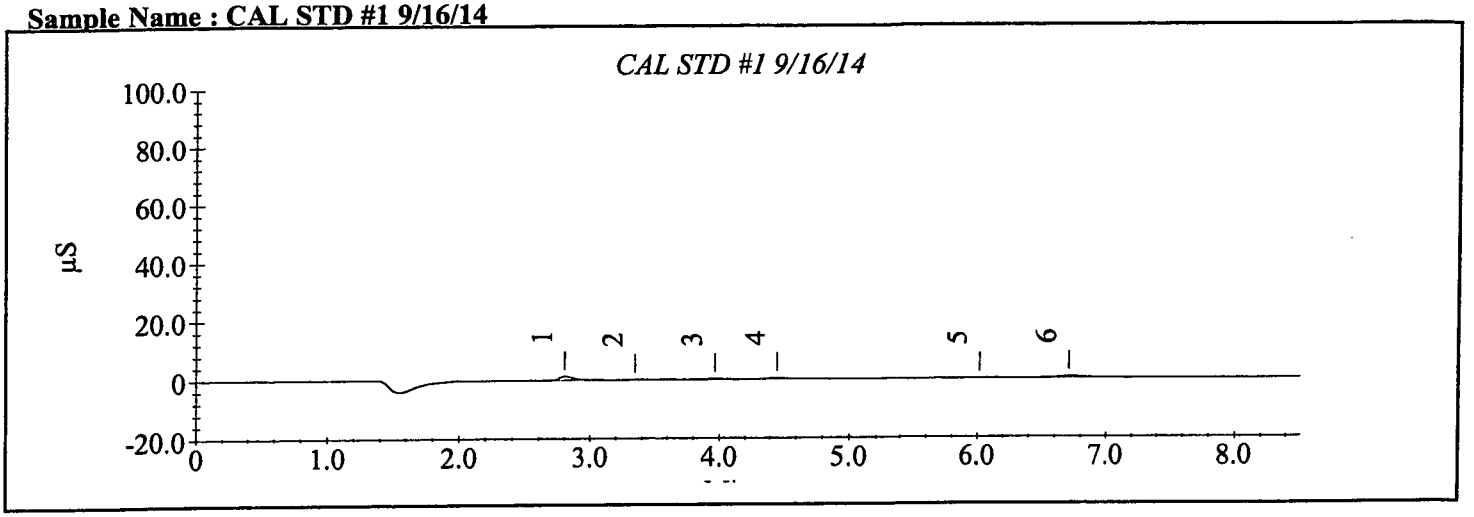
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 2.80 | chloride | 80668 | 105182 | 105182 |
| 2 | 3.35 | nitrite-n | 14520 | 9360 | 9360 |
| 3 | 3.96 | bromide | 17978 | 16482 | 16482 |
| 4 | 4.45 | nitrate-n | 38967 | 42537 | 42537 |
| 5 | 6.01 | phosphate-p | 17719 | 37336 | 37336 |
| 6 | 6.71 | sulfate | 39183 | 70554 | 70554 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 2.80 | chloride | 0.40 | 105182 | 12275 | - |
| 2 | 3.35 | nitrite-n | 0.04 | 9360 | 1262 | - |
| 3 | 3.96 | bromide | 0.20 | 16482 | 1928 | - |
| 4 | 4.45 | nitrate-n | 0.08 | 42537 | 4453 | - |
| 5 | 6.01 | phosphate-p | 0.08 | 37336 | 1580 | - |
| 6 | 6.71 | sulfate | 0.40 | 70554 | 4720 | - |

**Sample Name : CAL STD #1 9/16/14**



# Calibration Update Report

**Sample Name : CAL STD #2**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_013.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:12:31

Calibration Date : 9/16/14 13:23:26
System Operator : mm
Injection Number : 13

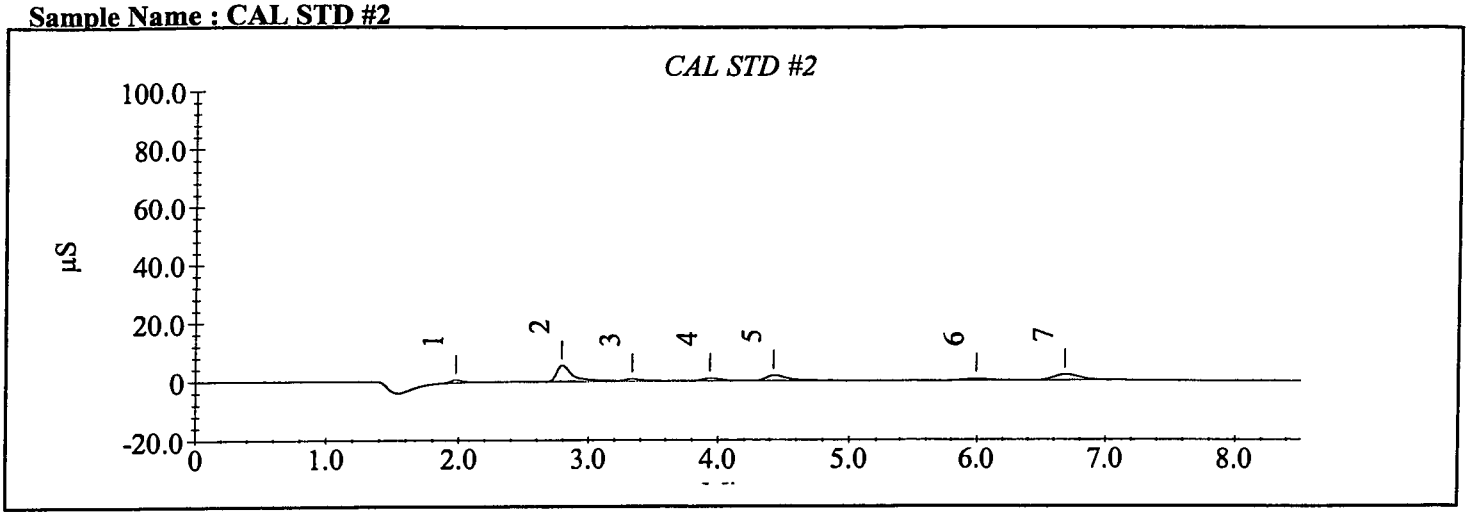
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 59909 | 65241 | 65241 |
| 2 | 2.79 | chloride | 419030 | 469931 | 469931 |
| 3 | 3.33 | nitrite-n | 59671 | 82285 | 82285 |
| 4 | 3.93 | bromide | 89803 | 110811 | 110811 |
| 5 | 4.43 | nitrate-n | 201320 | 207637 | 207637 |
| 6 | 5.99 | phosphate-p | 67899 | 77961 | 77961 |
| 7 | 6.68 | sulfate | 264624 | 260443 | 260443 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.10 | 65241 | 8911 | |
| 2 | 2.79 | chloride | 1.00 | 469931 | 54508 | |
| 3 | 3.33 | nitrite-n | 0.10 | 82285 | 7802 | |
| 4 | 3.93 | bromide | 0.50 | 110811 | 9252 | |
| 5 | 4.43 | nitrate-n | 0.20 | 207637 | 18419 | |
| 6 | 5.99 | phosphate-p | 0.20 | 77961 | 5299 | |
| 7 | 6.68 | sulfate | 1.00 | 260443 | 19470 | |

**Sample Name : CAL STD #2**



# Calibration Update Report

**Sample Name : CAL STD #3**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_014.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:23:49

Calibration Date : 9/16/14 13:34:44
System Operator : mm
Injection Number : 14

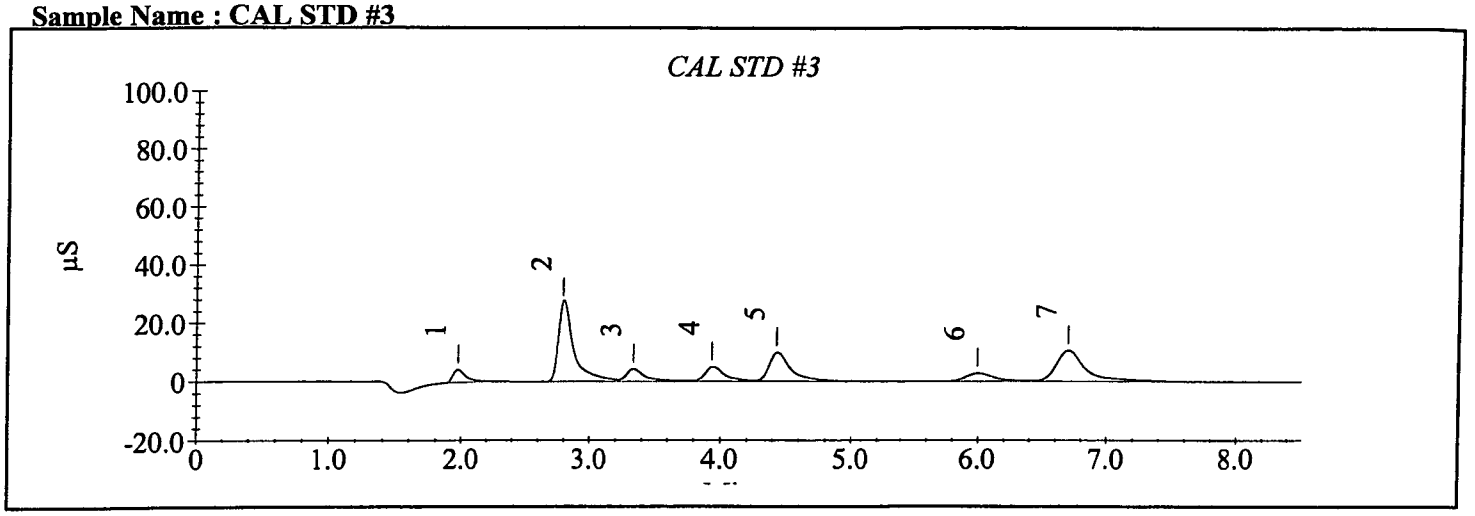
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 309108 | 295885 | 295885 |
| 2 | 2.79 | chloride | 2276954 | 2266777 | 2266777 |
| 3 | 3.33 | nitrite-n | 436460 | 427557 | 427557 |
| 4 | 3.93 | bromide | 523251 | 530269 | 530269 |
| 5 | 4.43 | nitrate-n | 1108037 | 1096946 | 1096946 |
| 6 | 5.99 | phosphate-p | 384060 | 423665 | 423665 |
| 7 | 6.69 | sulfate | 1603379 | 1664932 | 1664932 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 0.50 | 295885 | 42704 | |
| 2 | 2.79 | chloride | 5.00 | 2266777 | 269443 | |
| 3 | 3.33 | nitrite-n | 0.50 | 427557 | 41736 | |
| 4 | 3.93 | bromide | 2.50 | 530269 | 48100 | |
| 5 | 4.43 | nitrate-n | 1.00 | 1096946 | 96641 | |
| 6 | 5.99 | phosphate-p | 1.00 | 423665 | 27488 | |
| 7 | 6.69 | sulfate | 5.00 | 1664932 | 104763 | |

**Sample Name : CAL STD #3**



# Calibration Update Report

**Sample Name : CAL STD #4**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_015.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:35:06

Calibration Date : 9/16/14 13:46:01
System Operator : mm
Injection Number : 15

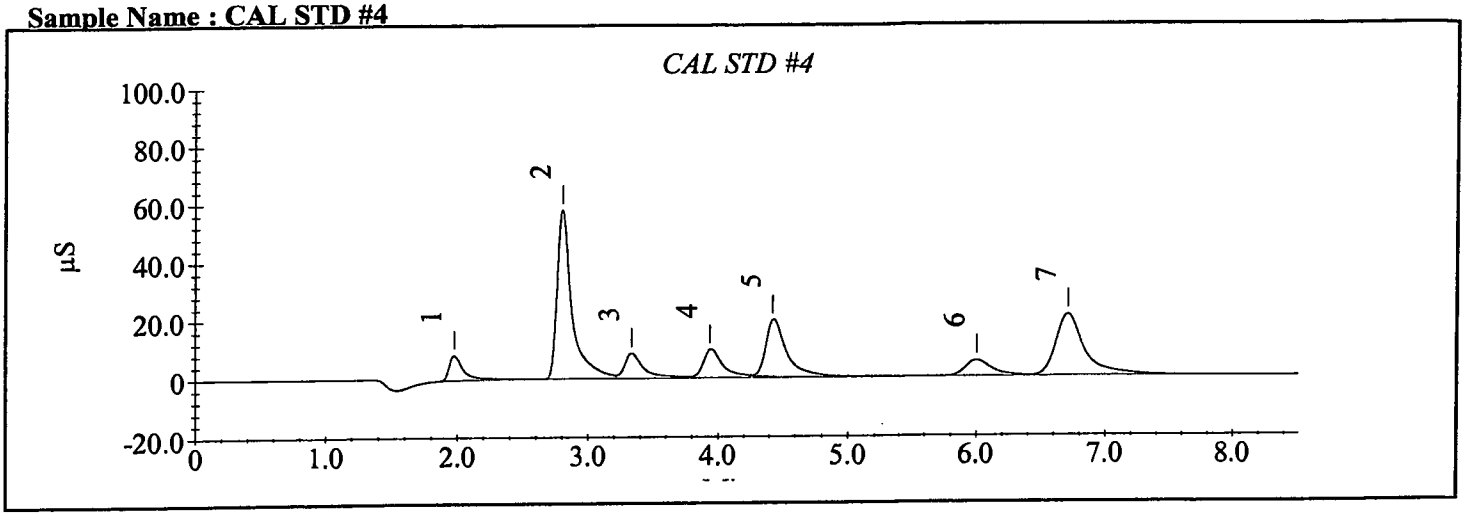
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 607569 | 665048 | 665048 |
| 2 | 2.80 | chloride | 4779793 | 4620000 | 4620000 |
| 3 | 3.33 | nitrite-n | 906480 | 866241 | 866241 |
| 4 | 3.93 | bromide | 1053126 | 1040424 | 1040424 |
| 5 | 4.43 | nitrate-n | 2237044 | 2181530 | 2181530 |
| 6 | 6.00 | phosphate-p | 769425 | 767090 | 767090 |
| 7 | 6.71 | sulfate | 3360946 | 3268879 | 3268879 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 1.00 | 665048 | 85001 | |
| 2 | 2.80 | chloride | 10.00 | 4620000 | 578025 | |
| 3 | 3.33 | nitrite-n | 1.00 | 866241 | 85227 | |
| 4 | 3.93 | bromide | 5.00 | 1040424 | 94837 | |
| 5 | 4.43 | nitrate-n | 2.00 | 2181530 | 194223 | |
| 6 | 6.00 | phosphate-p | 2.00 | 767090 | 53648 | |
| 7 | 6.71 | sulfate | 10.00 | 3268879 | 210711 | |

**Sample Name : CAL STD #4**



# Calibration Update Report

**Sample Name : CAL STD #5**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_016.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:46:24

Calibration Date : 9/16/14 13:57:19
System Operator : mm
Injection Number : 16

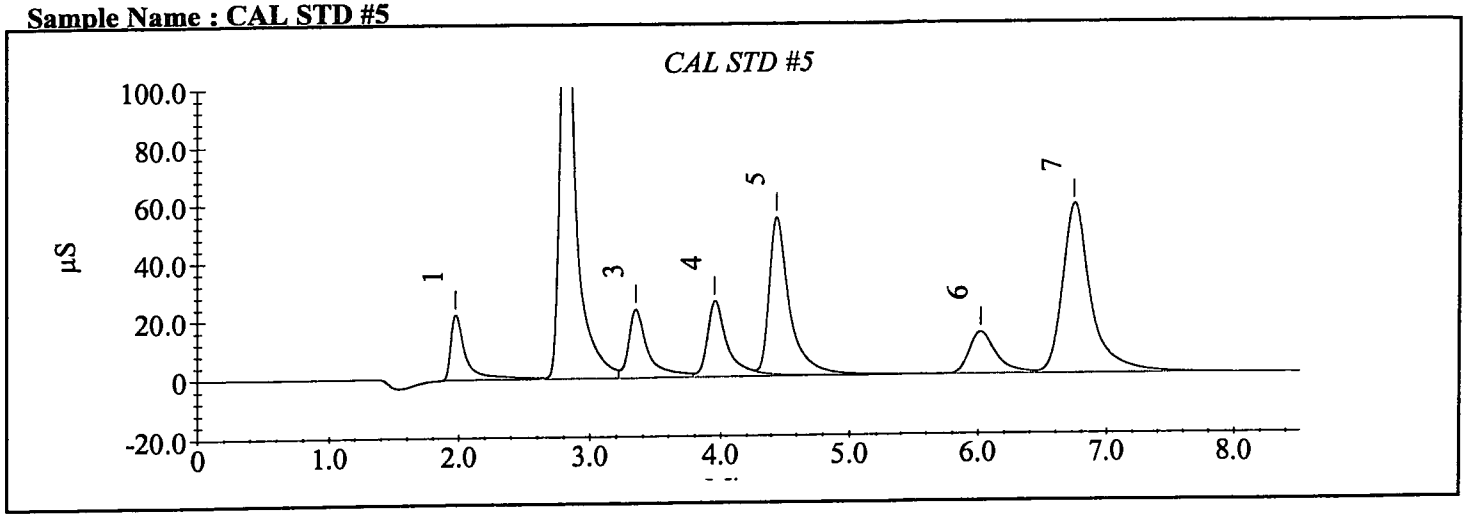
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 1882150 | 1822387 | 1822387 |
| 2 | 2.80 | chloride | 13726063 | 13083991 | 13083991 |
| 3 | 3.35 | nitrite-n | 2428096 | 2398640 | 2398640 |
| 4 | 3.95 | bromide | 2795303 | 2811783 | 2811783 |
| 5 | 4.44 | nitrate-n | 6075372 | 5982651 | 5982651 |
| 6 | 6.01 | phosphate-p | 2015049 | 2009102 | 2009102 |
| 7 | 6.73 | sulfate | 9158418 | 8925097 | 8925097 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.50 | 1822387 | 220513 | |
| 2 | 2.80 | chloride | 25.00 | 13083991 | 1634673 | |
| 3 | 3.35 | nitrite-n | 2.50 | 2398640 | 232992 | |
| 4 | 3.95 | bromide | 12.50 | 2811783 | 257207 | |
| 5 | 4.44 | nitrate-n | 5.00 | 5982651 | 539495 | |
| 6 | 6.01 | phosphate-p | 5.00 | 2009102 | 141469 | |
| 7 | 6.73 | sulfate | 25.00 | 8925097 | 579552 | |

**Sample Name : CAL STD #5**



# Calibration Update Report

**Sample Name : CAL STD #6**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_017.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 13:57:42

Calibration Date : 9/16/14 14:08:37
System Operator : mm
Injection Number : 17

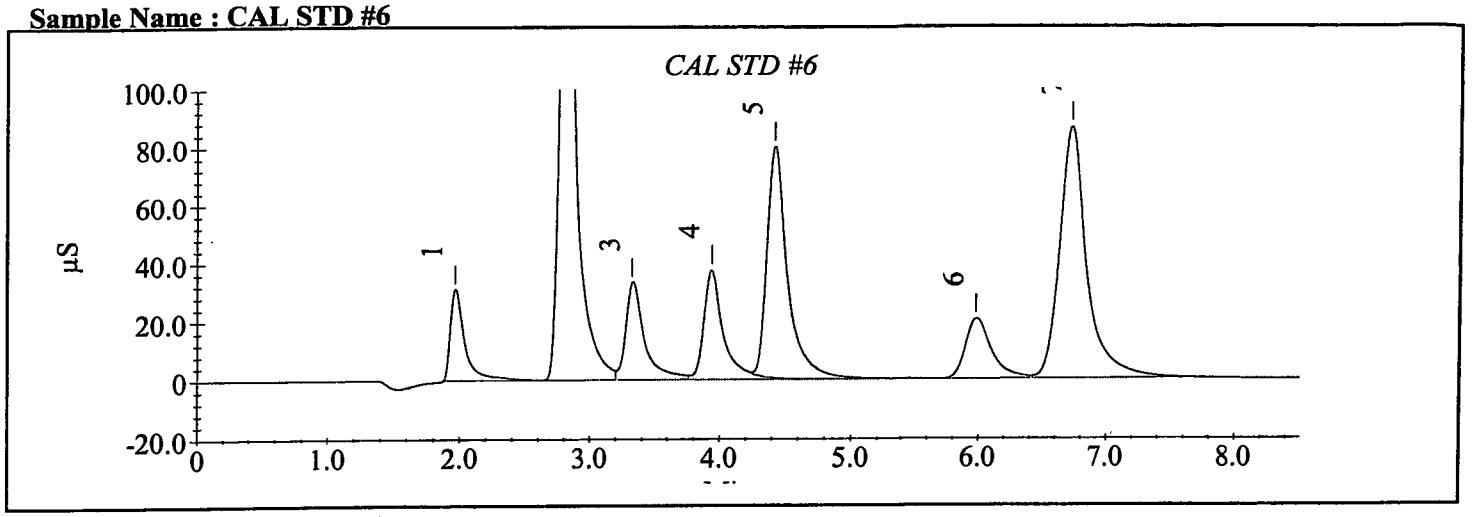
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2634975 | 2347305 | 2347305 |
| 2 | 2.80 | chloride | 20199844 | 19156003 | 19156003 |
| 3 | 3.32 | nitrite-n | 3487460 | 3309962 | 3309962 |
| 4 | 3.93 | bromide | 3964452 | 3853149 | 3853149 |
| 5 | 4.41 | nitrate-n | 8962096 | 8679959 | 8679959 |
| 6 | 5.97 | phosphate-p | 2892007 | 2861951 | 2861951 |
| 7 | 6.72 | sulfate | 13323218 | 12862977 | 12862977 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 3.50 | 2347305 | 307863 | |
| 2 | 2.80 | chloride | 35.00 | 19156003 | 2543383 | |
| 3 | 3.32 | nitrite-n | 3.50 | 3309962 | 329466 | |
| 4 | 3.93 | bromide | 17.50 | 3853149 | 373363 | |
| 5 | 4.41 | nitrate-n | 7.00 | 8679959 | 793777 | |
| 6 | 5.97 | phosphate-p | 7.00 | 2861951 | 202999 | |
| 7 | 6.72 | sulfate | 35.00 | 12862977 | 864005 | |

**Sample Name : CAL STD #6**



# Calibration Update Report

**Sample Name : CAL STD #7**
**Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_018.DXD**

Method File Name : ...\anions 140916a.met
Schedule File Name : ...\140916a.sch
Date Time Collected : 9/16/14 14:08:59

Calibration Date : 9/16/14 14:19:53
System Operator : mm
Injection Number : 18

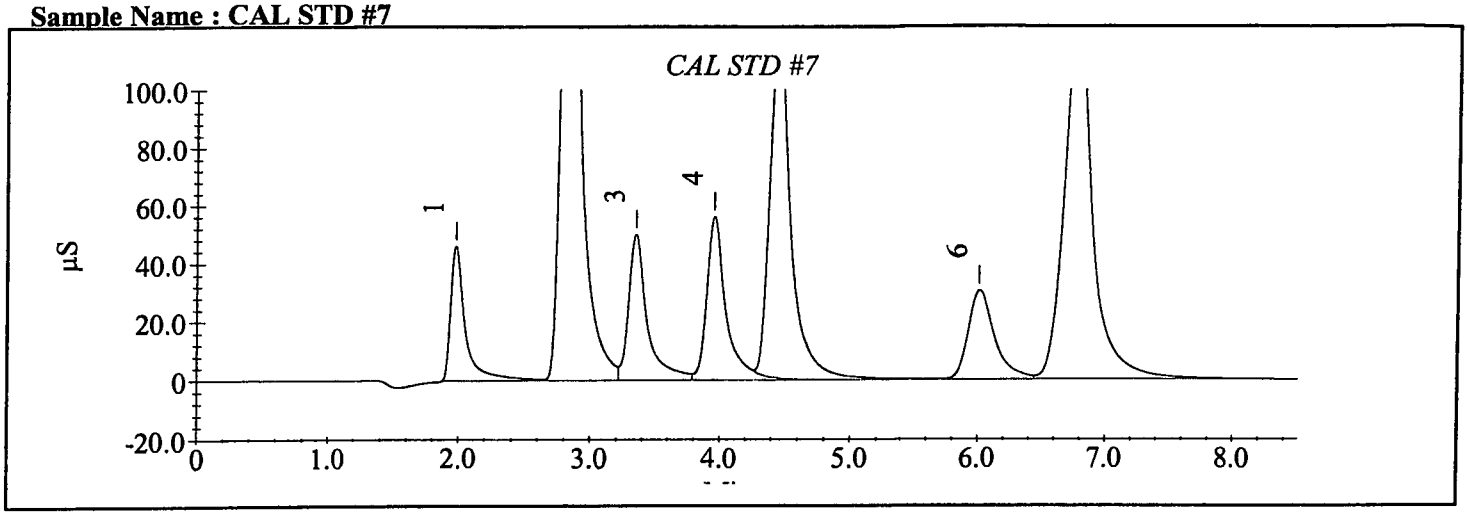
Peak Information : All Components

| Peak # | Retention Time | Component Name | Cal Response (Previous) | Cal Response (Measured) | Cal Response (New) |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 3720726 | 3619418 | 3619418 |
| 2 | 2.81 | chloride | 29858639 | 29150289 | 29150289 |
| 3 | 3.35 | nitrite-n | 4999120 | 4979068 | 4979068 |
| 4 | 3.95 | bromide | 5710221 | 5758749 | 5758749 |
| 5 | 4.43 | nitrate-n | 13261972 | 13214288 | 13214288 |
| 6 | 6.00 | phosphate-p | 4245709 | 4282289 | 4282289 |
| 7 | 6.76 | sulfate | 19824829 | 19464399 | 19464399 |

Peak Information : All Components

| Peak # | Retention Time | Component Name | Amount (mg/L) | Peak Area | Peak Height | Limit Exceeded |
|---|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 5.00 | 3619418 | 459676 | |
| 2 | 2.81 | chloride | 50.00 | 29150289 | 3850058 | |
| 3 | 3.35 | nitrite-n | 5.00 | 4979068 | 498763 | |
| 4 | 3.95 | bromide | 25.00 | 5758749 | 558971 | |
| 5 | 4.43 | nitrate-n | 10.00 | 13214288 | 1198703 | |
| 6 | 6.00 | phosphate-p | 10.00 | 4282289 | 303155 | |
| 7 | 6.76 | sulfate | 50.00 | 19464399 | 1318317 | |

**Sample Name : CAL STD #7**



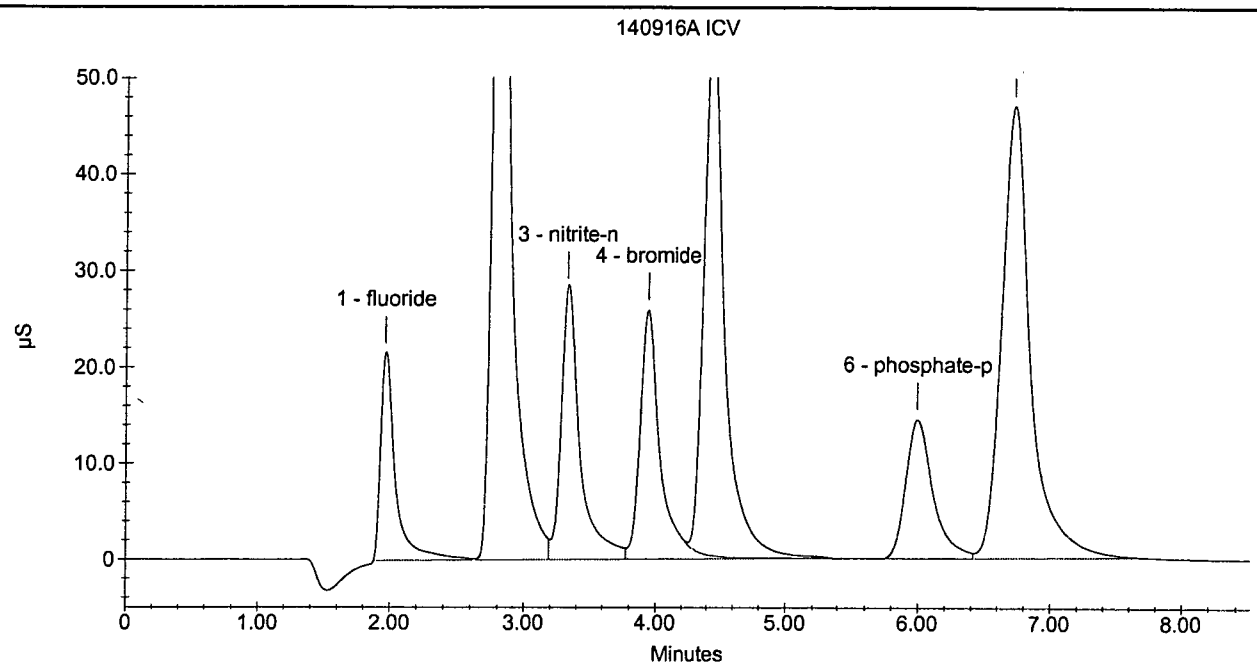
# Sample Analysis Report

Sample Name : 140916A ICV
Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916a_019.DXD

Method File Name : I:\DIONEX\D1ANIONS\METHODS\ANIONS 140916A.met
Date Time Collected : 9/16/14 14:20:16
System Operator : mm
Injection Number : 19
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height | Limit Exceed |
|---|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2.3941 | 1681572 | 214873 | 2. |
| 2 | 2.79 | chloride | 18.9786 | 10371065 | 1320844 | 1 |
| 3 | 3.32 | nitrite-n | 2.9265 | 2837943 | 280321 | 2. |
| 4 | 3.93 | bromide | 12.1534 | 2733797 | 258190 | 1 |
| 5 | 4.41 | nitrate-n | 4.8567 | 6121479 | 548928 | 4. |
| 6 | 5.99 | phosphate-p | 4.9173 | 2047176 | 144494 | 4. |
| 7 | 6.71 | sulfate | 19.3371 | 7141046 | 468012 | 1 |



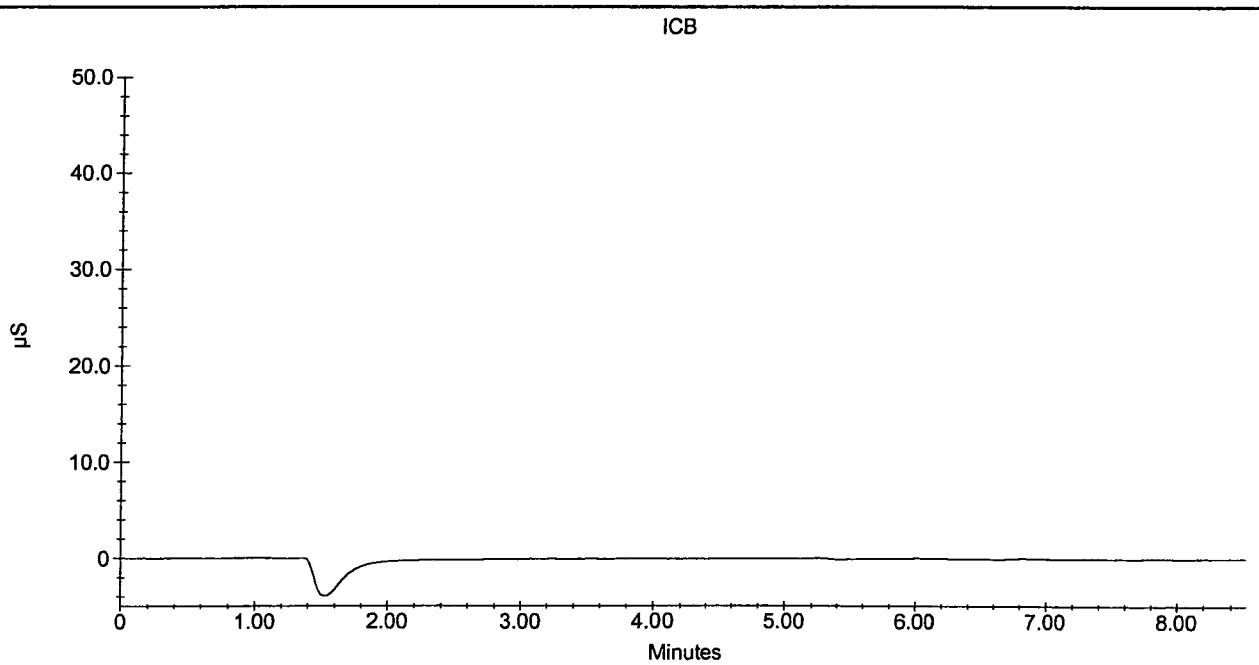
# Sample Analysis Report

Sample Name : ICB
Data File Name : I:\DIONEX\D1ANIONS\DATA\140916A\140916A_020.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 9/16/14 14:31:36
System Operator : mm
Injection Number : 20
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height | Limit Exceed |
|---|---|---|---|---|---|---|




*APPL, Inc.*



Current Date : 9/16/14
Current Time : 14:43:32

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 74924 SDG: 74924
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 11/21/14

| Analyte | Calibration Verification | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | True CCV1 | Found 12:36 | %R(1) | True CCV1 | Found 14:51 | %R(1) | True CCV1 | Found 17:05 | %R(1) | |
| sulfate | 25 | 24.0393 | 96.2 | 25 | 24.2577 | 97.0 | 25 | 24.2021 | 96.8 | |

(1) Control Limits: 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 74924 SDG: 74924

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

| Analyte | Calibration Blanks | | | | | | | | | | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CCB 11/21/14 12:47 | C | CCB 11/21/14 15:02 | C | CCB 11/21/14 17:16 | C | | C | | C | |
| sulfate | 1.000 | U | 1.000 | U | 1.000 | U | | | | | |

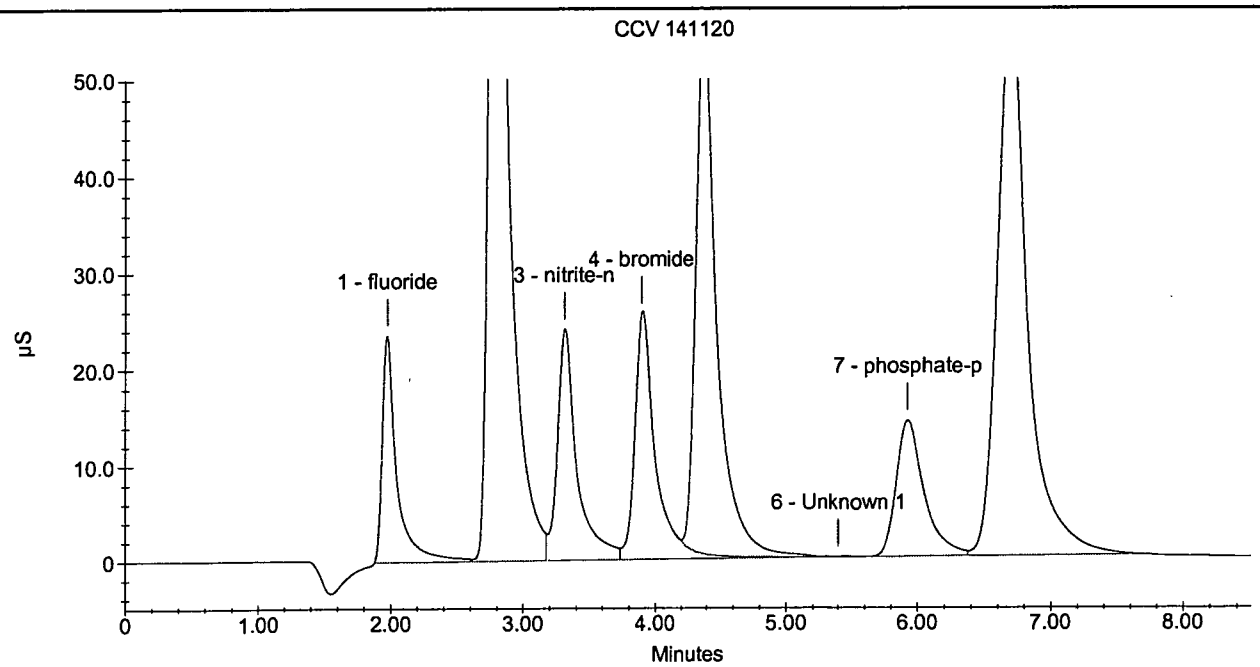
# Sample Analysis Report

Sample Name : CCV 141120
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_025.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 12:36:02
System Operator : mm
Injection Number : 25
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.5601 | 1801457 | 235658 |
| 2 | 2.79 | chloride | 24.3811 | 13508185 | 1776598 |
| 3 | 3.31 | nitrite-n | 2.5340 | 2448090 | 240365 |
| 4 | 3.89 | bromide | 12.5141 | 2816492 | 255833 |
| 5 | 4.37 | nitrate-n | 4.9066 | 6186954 | 558078 |
| 6 | 5.40 | Unknown 1 | 0.0000 | 7029 | 582 |
| 7 | 5.92 | phosphate-p | 4.9799 | 2073699 | 142108 |
| 8 | 6.68 | sulfate | 24.0394 | 8962236 | 574448 |



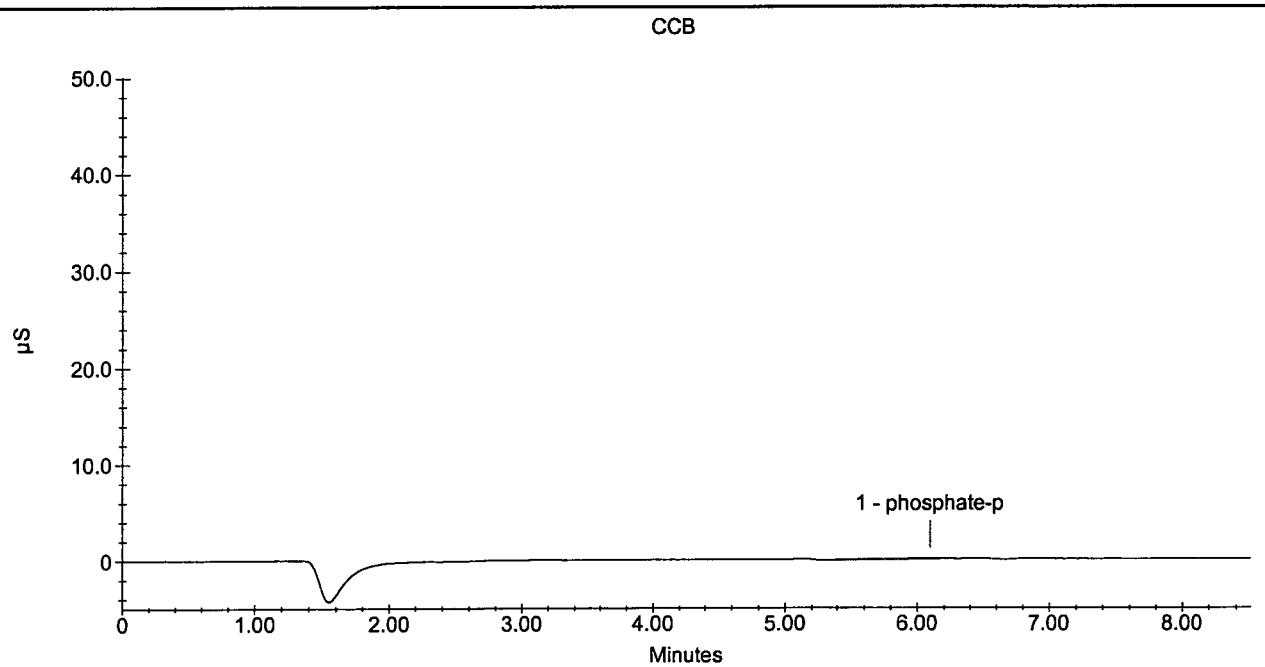
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_026.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 12:47:22
System Operator : mm
Injection Number : 26
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 6.09 | phosphate-p | 0.1900 | 45391 | 942 |



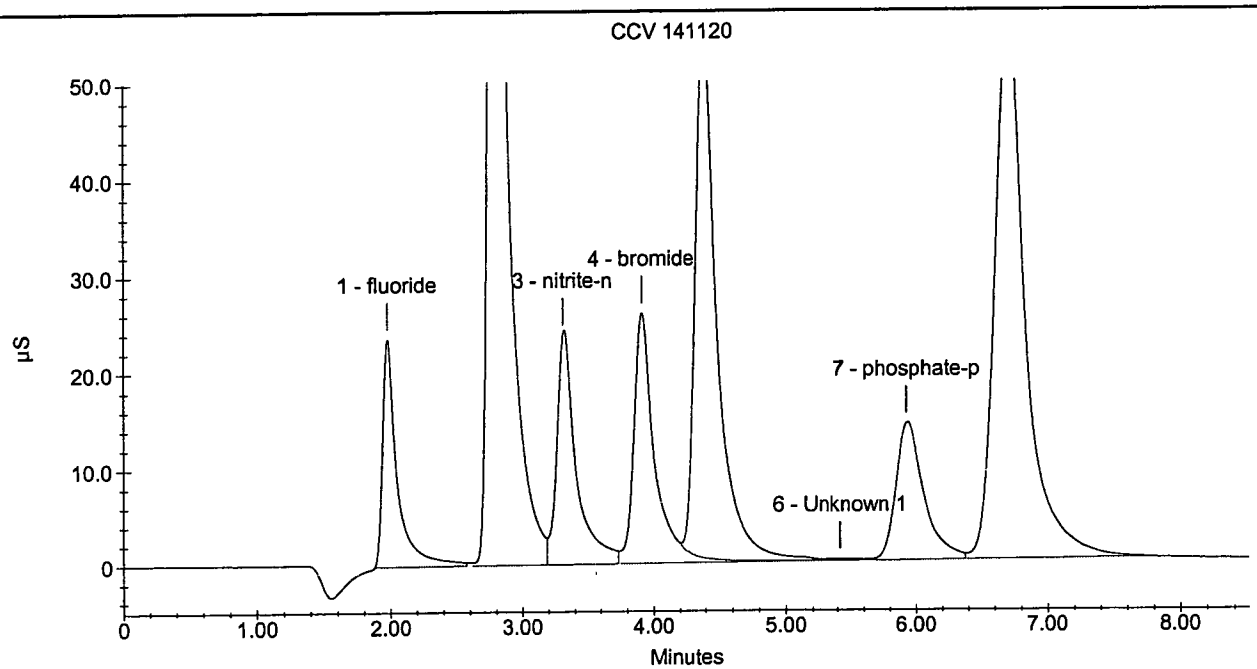
# Sample Analysis Report

Sample Name : CCV 141120
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_037.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 14:51:06
System Operator : mm
Injection Number : 37
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.5937 | 1825652 | 235722 |
| 2 | 2.79 | chloride | 24.5441 | 13602815 | 1741826 |
| 3 | 3.31 | nitrite-n | 2.5736 | 2487433 | 238289 |
| 4 | 3.91 | bromide | 12.6639 | 2850842 | 259988 |
| 5 | 4.37 | nitrate-n | 4.9742 | 6275757 | 553606 |
| 6 | 5.41 | Unknown 1 | 0.0000 | 28396 | 1569 |
| 7 | 5.92 | phosphate-p | 5.0957 | 2122707 | 142501 |
| 8 | 6.69 | sulfate | 24.2578 | 9046812 | 577669 |



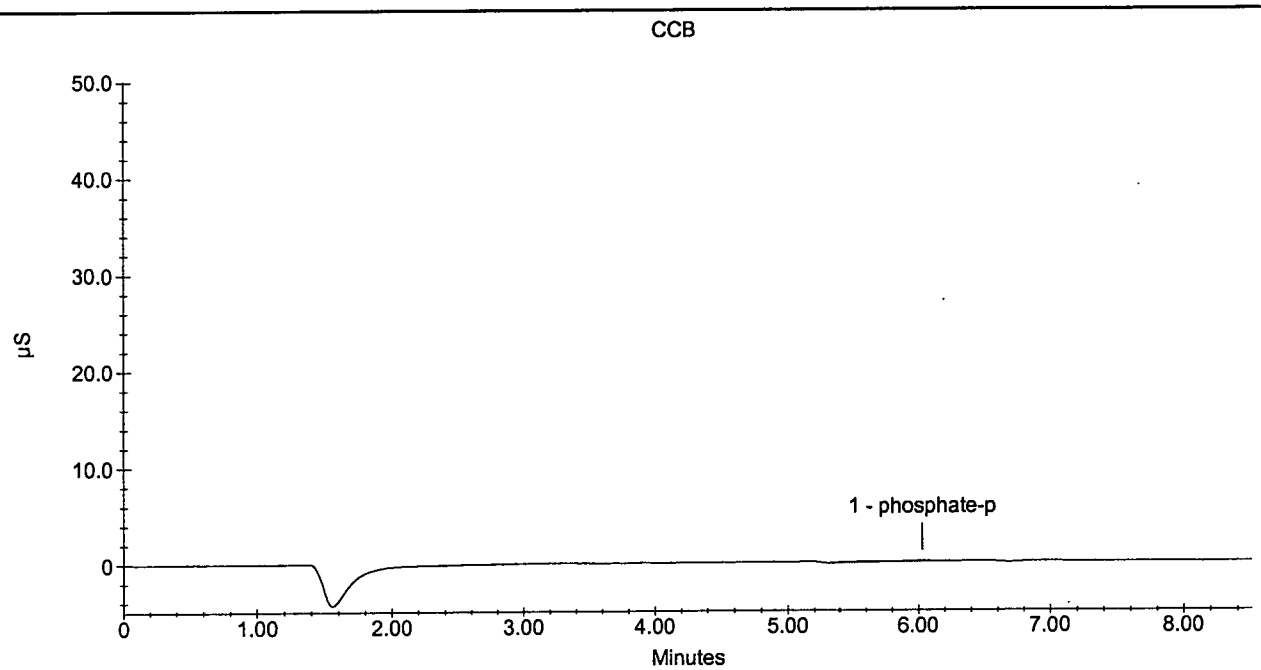
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_038.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 15:02:26
System Operator : mm
Injection Number : 38
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 6.03 | phosphate-p | 0.1733 | 38335 | 831 |



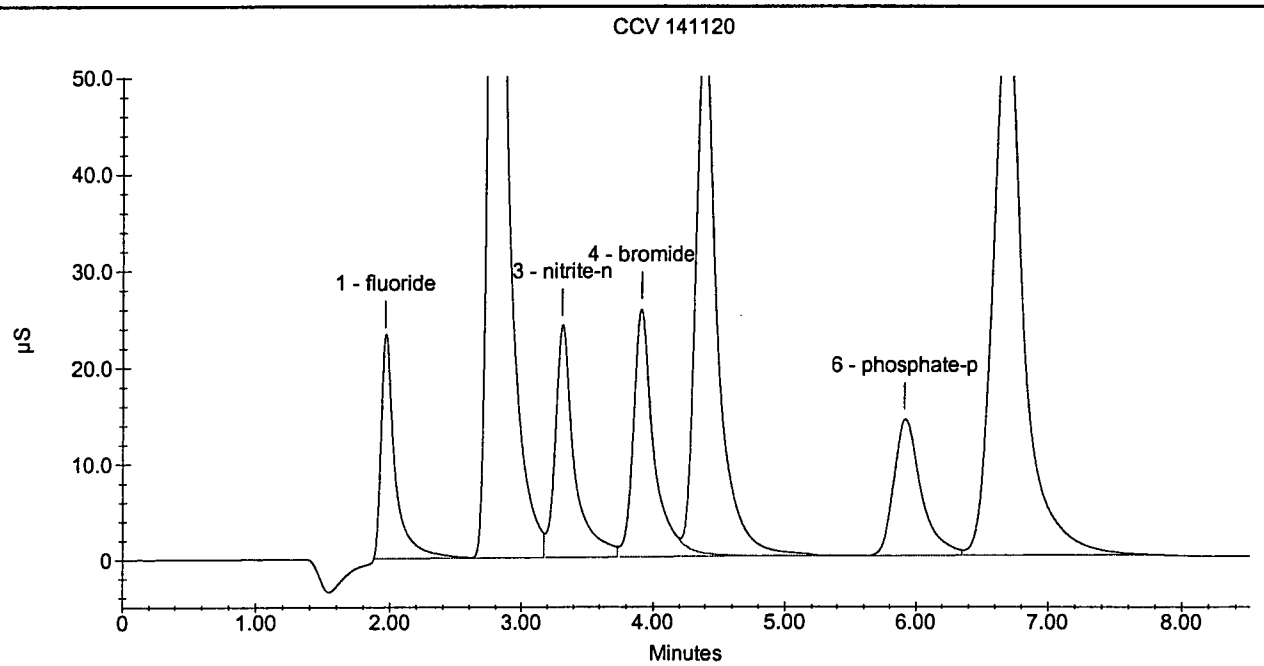
# Sample Analysis Report

Sample Name : CCV 141120
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_049.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 17:05:42
System Operator : mm
Injection Number : 49
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.96 | fluoride | 2.4322 | 1709047 | 229038 |
| 2 | 2.79 | chloride | 24.3479 | 13488886 | 1769226 |
| 3 | 3.31 | nitrite-n | 2.5134 | 2427590 | 240352 |
| 4 | 3.91 | bromide | 12.1972 | 2743828 | 256973 |
| 5 | 4.37 | nitrate-n | 4.9325 | 6221004 | 553397 |
| 6 | 5.91 | phosphate-p | 4.9873 | 2076817 | 141674 |
| 7 | 6.67 | sulfate | 24.2021 | 9025258 | 575973 |



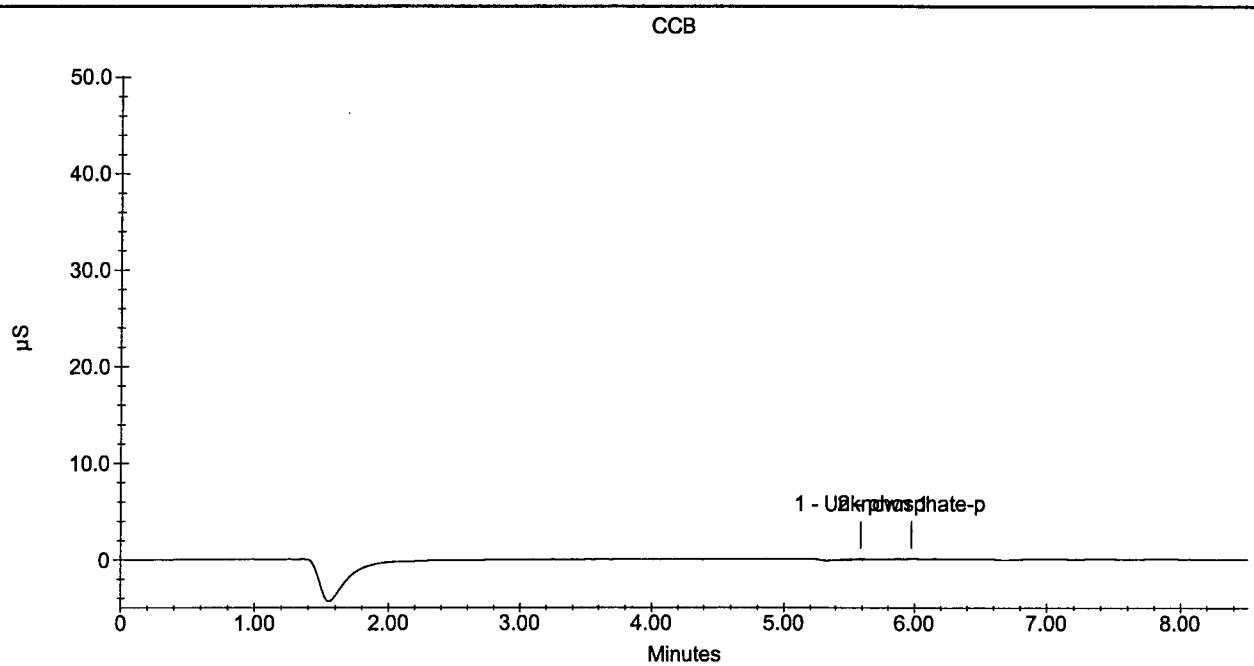
# Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_050.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 17:16:59
System Operator : mm
Injection Number : 50
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 5.59 | Unknown 1 | 0.0000 | 11739 | 779 |
| 2 | 5.97 | phosphate-p | 0.0989 | 6803 | 418 |



# INORGANICS

## Raw Data

APPL, INC.

# WETLAB BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Analyte | Result | LOQ | LOD | DL | Units | Prep Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 0.100 U | 0.10 | 0.100 | 0.028 | mg/L | 11/26/14 | 11/26/14 | #35OF-141126A-AZ07148 |
| EPA 9056 | SULFATE | 0.198 U | 1.00 | 0.198 | 0.090 | mg/L | 11/21/14 | 11/21/14 | #9056D-141121B-AZ07202 |
| SM 2320B | TOTAL ALKALINITY | 1.70 U | 2.0 | 1.70 | 0.85 | mg/L | 11/24/14 | 11/24/14 | #232W-141124A-AZ07203 |

*Wetlab SC-Blank-REG MDLs*
*Printed: 12/01/14 11:17:08 AM*

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SM 2320B | TOTAL ALKALINITY AS CA | 250 | 261 | 259 | 104 | 104 | 0.77 | 20 | 90-110 | 11/24/14 | 11/24/14 | 11/24/14 | 11/24/14 | #232W-141124A-AZ07203 |

Comments: _____

# Laboratory Control Spike Recoveries

## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Lvl mg/L | SPK Res mg/L | DUP Res mg/L | SPK % Recov | DUP % Recov | RPD | RPD Max | QC Limits | Extract Date-Spk | Analysis Date-Spk | Extract Date-Dup | Analysis Date-Dup | QC Group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA 353.2 | NITRATE-NITRITE-N | 5.00 | 4.95 | 4.89 | 99.0 | 97.8 | 1.2 | 20 | 90-110 | 11/26/14 | 11/26/14 | 11/26/14 | 11/26/14 | #35OF-141126A-AZ07148 |

Comments: _____

# Laboratory Control Spike Recovery
## WETLAB

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

| Method | Compound Name | Spike Level mg/L | SPK Result mg/L | SPK % Recovery | Recovery Limits | Extract Date | Analysis Date | QC Group |
|---|---|---|---|---|---|---|---|---|
| EPA 9056 | SULFATE | 20.0 | 19.4 | 97.0 | 80-120 | 11/21/14 | 11/21/14 | #9056D-141121B-AZ07202 |

Comments:

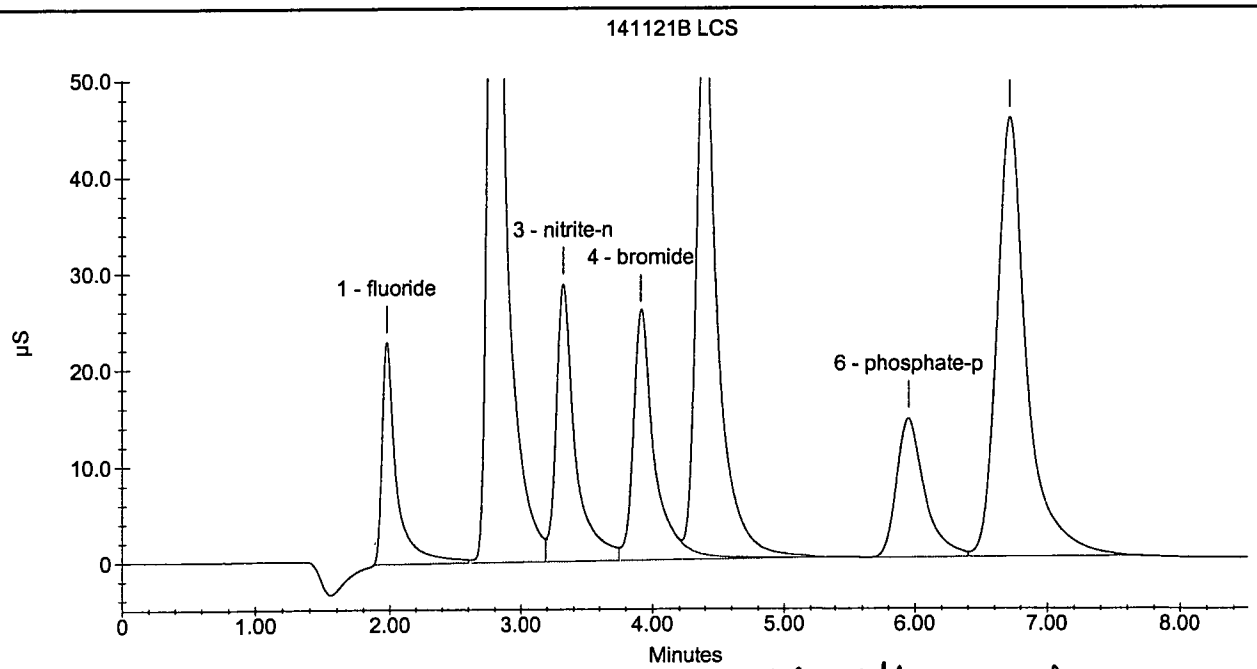
# Sample Analysis Report

Sample Name : 141121B LCS
Data File Name : I:\DIONEX\D1ANIONS\DATA\141121A\141121a_027.DXD

Method File Name : i:\dionex\d1anions\methods\anions 140916a.met
Date Time Collected : 11/21/14 12:58:28
System Operator : mm
Injection Number : 27
Multiplier : 1.00

Peak Information : All Peaks

| Peak Number | Peak Retention Time | Component Name | Component Amount (mg/L) | Peak Area | Peak Height |
|---|---|---|---|---|---|
| 1 | 1.97 | fluoride | 2.5184 | 1771332 | 229242 |
| 2 | 2.79 | chloride | 19.3285 | 10574267 | 1343981 |
| 3 | 3.32 | nitrite-n | 2.9444 | 2855695 | 286731 |
| 4 | 3.91 | bromide | 12.5726 | 2829894 | 257085 |
| 5 | 4.39 | nitrate-n | 5.0074 | 6319280 | 569583 |
| 6 | 5.95 | phosphate-p | 5.0785 | 2115427 | 144168 |
| 7 | 6.71 | sulfate | 19.3544 | 7147735 | 454407 |




Algorithm Check ✓
$7147735(2.582\times10^{-6}) + 0.899 = 19.35$
MM 11/25/14

OPERATOR: Aileen
ACQ. TIME: Nov 26, 2014 13:46:09
DATA FILENAME: I:\LACHAT\OMNION\141126NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\141126NA.TRA

TRAY DESCRIPTION:
Created: Nov 26, 2014 11:12:33
Modified: Nov 26, 2014 14:38:56
NO3/TOTOXN 141126NA
DATA DESCRIPTION:
Created: Nov 26, 2014 13:46:09
Modified: Nov 26, 2014 13:46:09

Multi-Channel Table
Type: Unknowns
Channel Range: 1 to 8 -- Cup Range: 1 to 40

| Cup | Sample ID | Sampling Time | # of Reps | TOTOXN (mg/L) | Man Dil Factor |
|---|---|---|---|---|---|
| 1 | 141126A BLK | 14:04:26 | 1 | -0.0277 | 1.0 |
| 4 | 141126A LCS | 14:05:55 | 1 | 4.9537 | 1.0 |
| 5 | 141126A LCSD | 14:07:24 | 1 | 4.8945 | 1.0 |
| 6 | AZ07147W06 | 14:08:52 | 1 | 0.0238 | 1.0 |
| 7 | AZ07148W06 | 14:10:20 | 1 | 0.0109 | 1.0 |
| 8 | AZ07148W06MS | 14:11:48 | 1 | 4.8982 | 1.0 |
| 9 | AZ07202W10 | 14:13:15 | 1 | 0.5573 | 1.0 |
| 10 | AZ07203W10 | 14:14:43 | 1 | 0.5551 | 1.0 |
| 11 | AZ07408W07 | 14:16:10 | 1 | 0.3983 | 1.0 |
| 12 | AZ07409W07 | 14:17:38 | 1 | 0.1222 | 1.0 |
| 13 | AZ07410W07 | 14:23:45 | 1 | 0.1246 | 1.0 |
| 14 | AZ07411W07 | 14:25:12 | 1 | 0.1840 | 1.0 |
| 15 | AZ07493W06 | 14:26:40 | 1 | -0.0231 | 1.0 |
| 16 | AZ07534W13 | 14:28:09 | 1 | 0.0297 | 1.0 |
| 17 | AZ07534W13MS | 14:29:38 | 1 | 4.8929 | 1.0 |
| 18 | AZ07534W13MSD | 14:31:06 | 1 | 5.0433 | 1.0 |
| 19 | AZ07535W05 | 14:32:35 | 1 | 0.0227 | 1.0 |
| 20 | AZ07536W05 | 14:34:04 | 1 | 0.0222 | 1.0 |
| 21 | AZ07537W05 | 14:35:32 | 1 | 0.0019 | 1.0 |
| 24 | | ~~14:38:37~~ | ~~1~~ | ~~0.5396~~ | ~~1.0~~ |

(4) AP 11/26/14

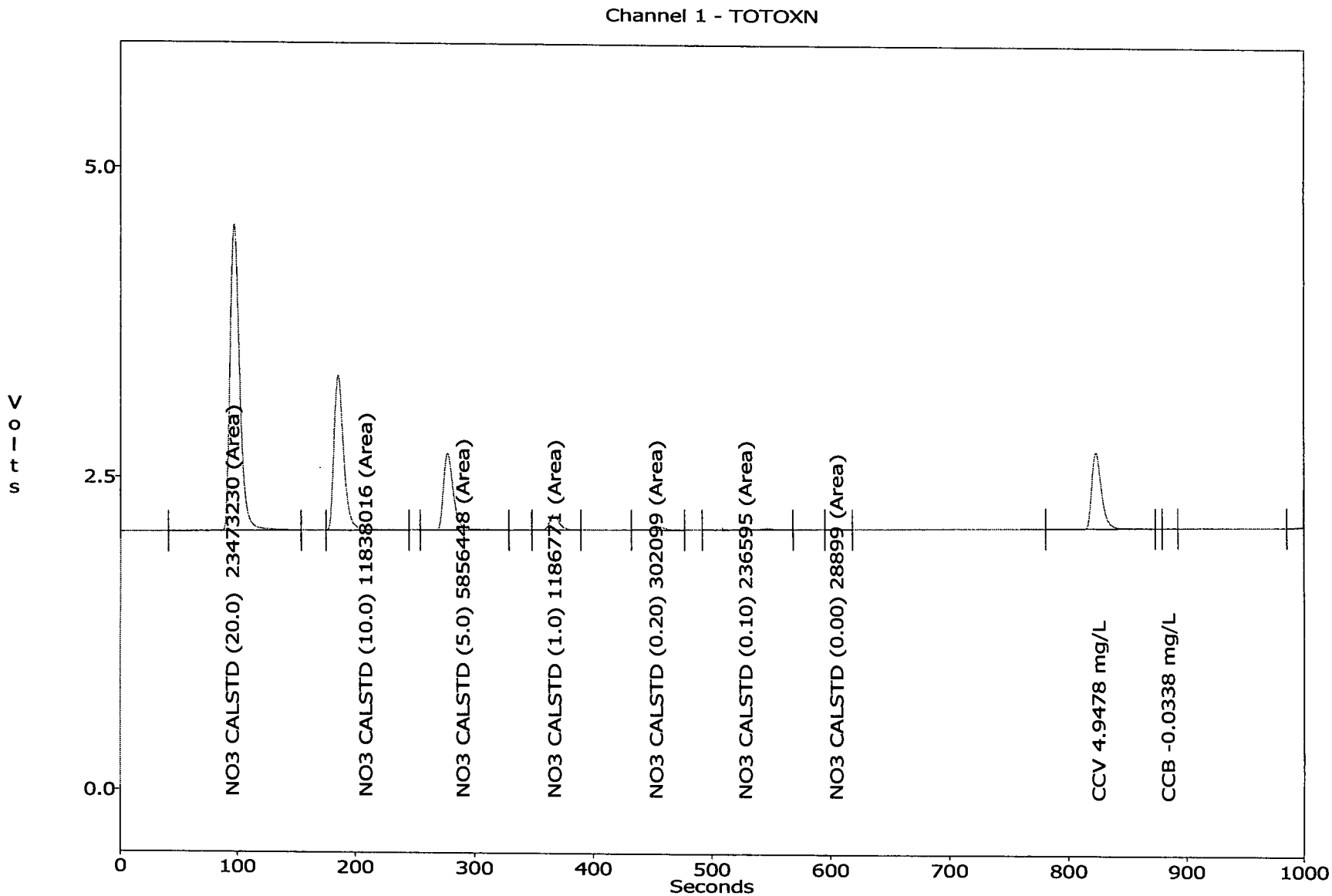
INSTRUMENT: Flow Injection Analysis
TRAY: 141126NA.TRA METHOD: TOTOXN1.MET DATAFILE: 141126NA.FDT
DATE/TIME: Wed Nov 26 13:46:09 2014 OPERATOR: Alleen

*** Begin Calibration ***
Cup# 1 Sample: NO3 CALSTD (20.0) Type: CalStd Level: 1 Rep# 1/1
Ch 1: TOTOXN Peak Area = 23473230.0 µv-s
Cup# 2 Sample: NO3 CALSTD (10.0) Type: CalStd Level: 2 Rep# 1/1
Ch 1: TOTOXN Peak Area = 11838016.0 µv-s
Cup# 15 Sample: NO3 CALSTD (5.0) Type: CalStd Level: 3 Rep# 1/1
Ch 1: TOTOXN Peak Area = 5856448.0 µv-s
Cup# 3 Sample: NO3 CALSTD (1.0) Type: CalStd Level: 4 Rep# 1/1
Ch 1: TOTOXN Peak Area = 1186771.0 µv-s
Cup# 4 Sample: NO3 CALSTD (0.20) Type: CalStd Level: 5 Rep# 1/1
Ch 1: TOTOXN Peak Area = 302099.0 µv-s
Cup# 5 Sample: NO3 CALSTD (0.10) Type: CalStd Level: 6 Rep# 1/1
Ch 1: TOTOXN Peak Area = 236595.0 µv-s
Cup# 6 Sample: NO3 CALSTD (0.00) Type: CalStd Level: 7 Rep# 1/1
Ch 1: TOTOXN Peak Area = 28899.0 µv-s
*** Updated Calibration ***
Ch 1: TOTOXN
** 1st Order Poly Calibration **
C[0] = 8.53421e-007
C[1] = -0.0472279
r = 1.0000
*** End Calibration Block ***
*** Calibration Passed ***
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1
Ch 1: TOTOXN = 4.9478 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.9478 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -1.0436%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1
Ch 1: TOTOXN = -0.0338 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0338 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
*** Starting DQM Set INITIAL ***
Cup# 7 Sample: ICV Type: RelChkStd Rep# 1/1
Ch 1: TOTOXN = 5.0002 mg/L
DQM Sample Results: ICV
Ch 1: TOTOXN = 5.0002 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = 0.0033%
Test 1: Passed
Cup# 6 Sample: ICB Type: Blank Rep# 1/1
Ch 1: TOTOXN = -0.0309 mg/L
DQM Sample Results: ICB
Ch 1: TOTOXN
Determined Conc = -0.0309 mg/L
Test 1: Passed
*** End of DQM Set INITIAL - Set Passed ***
Cup# 1 Sample: 141126A BLK Type: Unknown Rep# 1/1
Ch 1: TOTOXN = -0.0277 mg/L
Cup# 4 Sample: 141126A LCS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.9537 mg/L
Cup# 5 Sample: 141126A LCSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.8945 mg/L
Cup# 6 Sample: AZ07147W06 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0238 mg/L
Cup# 7 Sample: AZ07148W06 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0109 mg/L
Cup# 8 Sample: AZ07148W06MS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.8982 mg/L

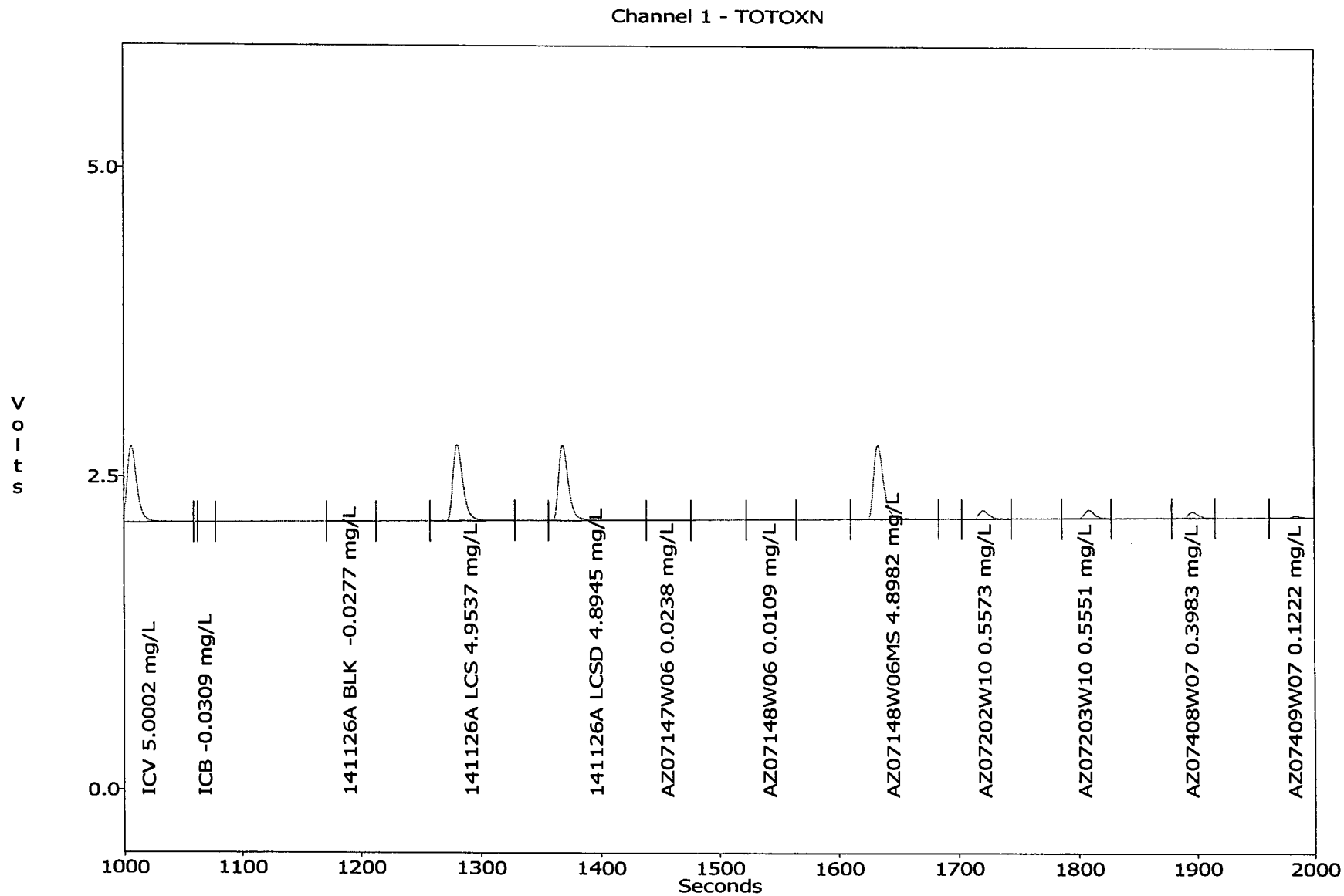
AP 11/26/14
Algorithm check on ICV ✓
$(8.53421)(5914304)(10^{-7}) - 0.0472279 = 5.0002$

Cup# 9 Sample: AZ07202W10 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.5573 mg/L
Cup# 10 Sample: AZ07203W10 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.5551 mg/L
Cup# 11 Sample: AZ07408W07 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.3983 mg/L
Cup# 12 Sample: AZ07409W07 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.1222 mg/L
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = 4.8997 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.8997 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -2.0060%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = -0.0188 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0188 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
Cup# 13 Sample: AZ07410W07 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.1246 mg/L
Cup# 14 Sample: AZ07411W07 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.1840 mg/L
Cup# 15 Sample: AZ07493W06 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = -0.0231 mg/L
Cup# 16 Sample: AZ07534W13 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0297 mg/L
Cup# 17 Sample: AZ07534W13MS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 4.8929 mg/L
Cup# 18 Sample: AZ07534W13MSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.0433 mg/L
Cup# 19 Sample: AZ07535W05 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0227 mg/L
Cup# 20 Sample: AZ07536W05 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0222 mg/L
Cup# 21 Sample: AZ07537W05 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0019 mg/L
Cup# 24 ~~Sample: Type: Unknown Rep~~# 1/1 (4) no sample present - aspirated air AP 11/26/14
Ch 1: TOTOXN = 0.~~5396 mg/L~~
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1 Repeat# 2
Ch 1: TOTOXN = 5.0783 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 5.0783 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = 1.5661%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1 Repeat# 2
Ch 1: TOTOXN = -0.0295 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0295 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
******* Tray Run Complete *******

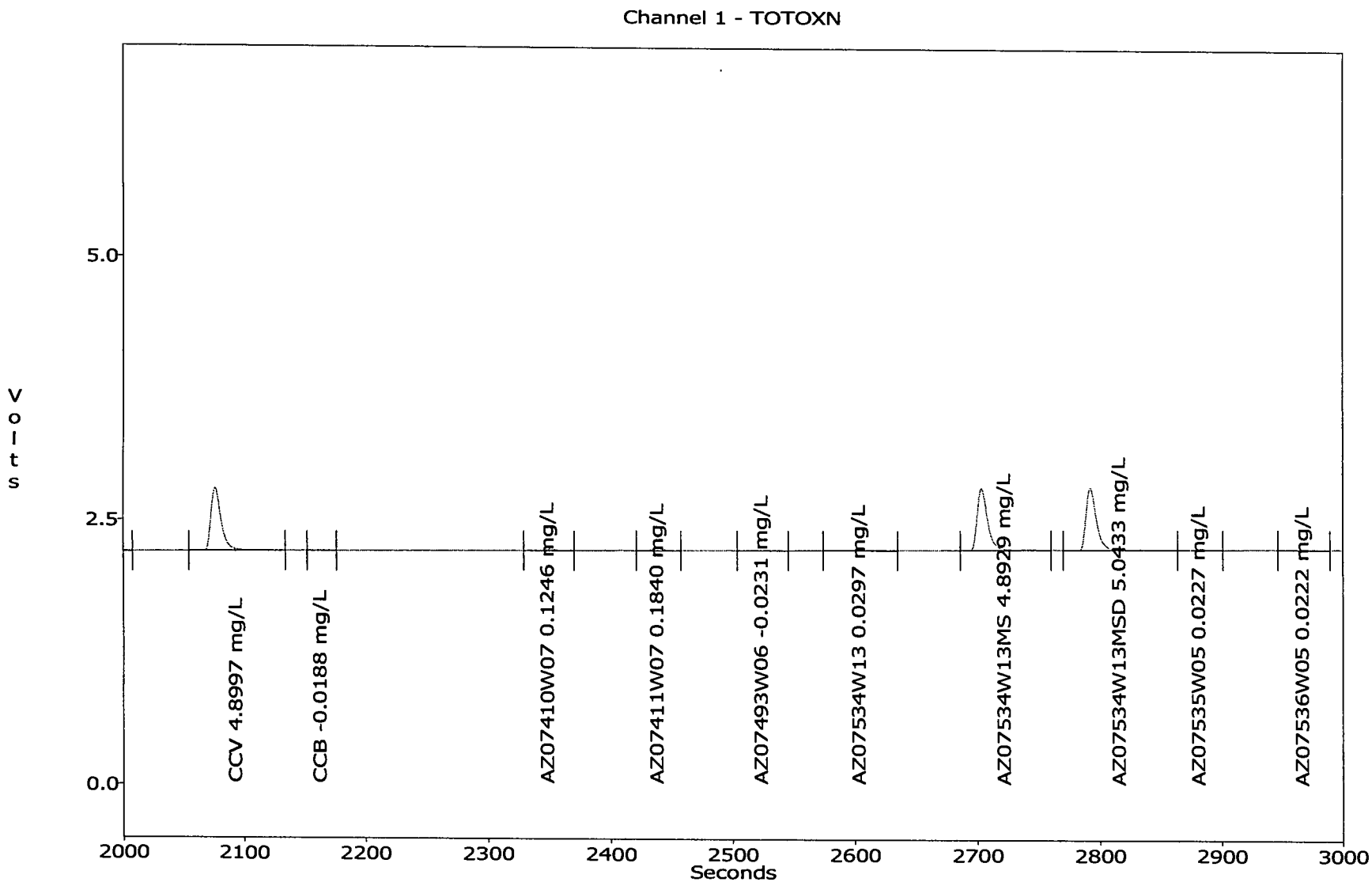
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 26, 2014 13:46:09
**DATA FILENAME:** I:\LACHAT\OMNION\141126NA.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141126NA.TRA



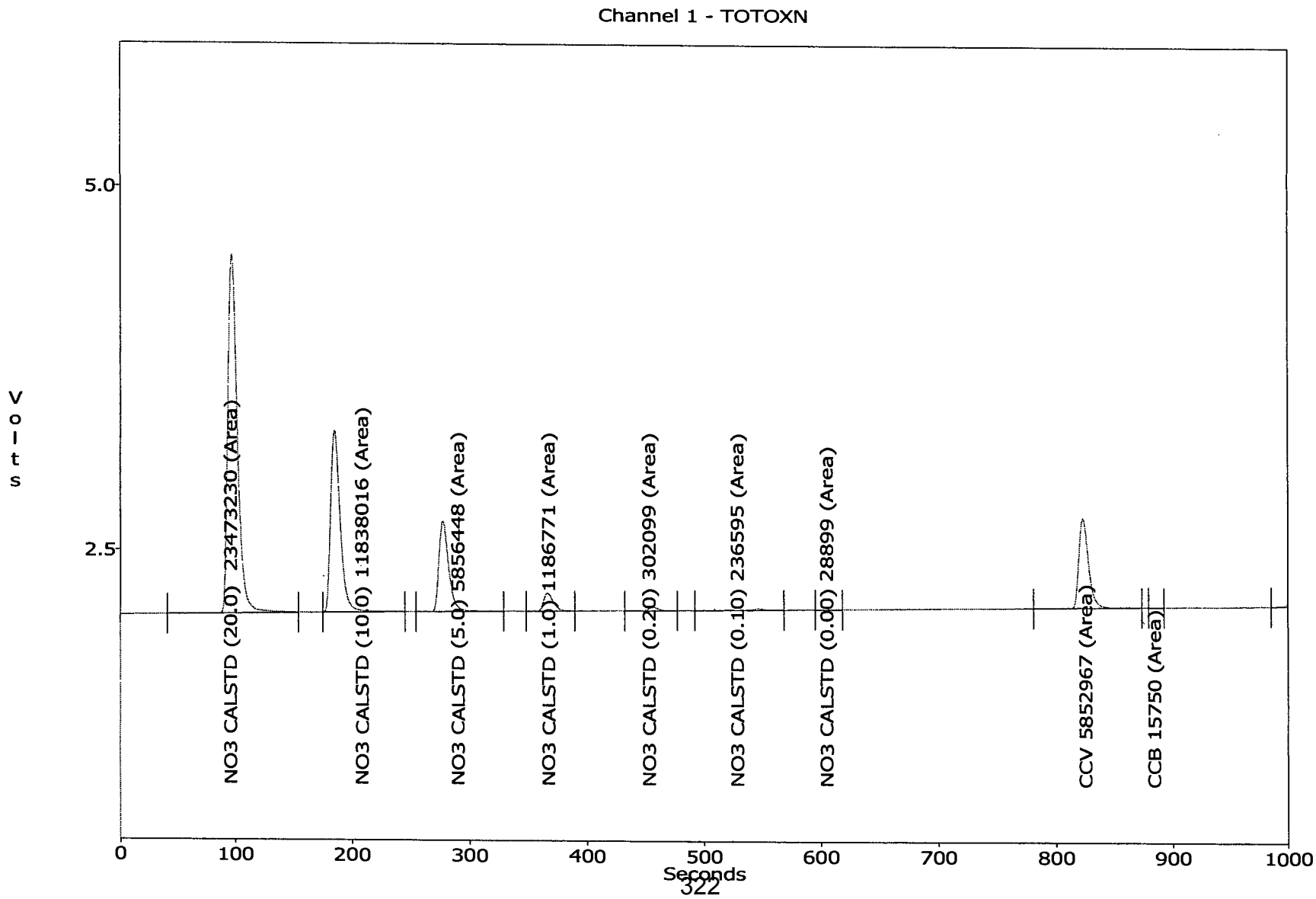
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 26, 2014 13:46:09
**DATA FILENAME:** I:\LACHAT\OMNION\141126NA.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141126NA.TRA



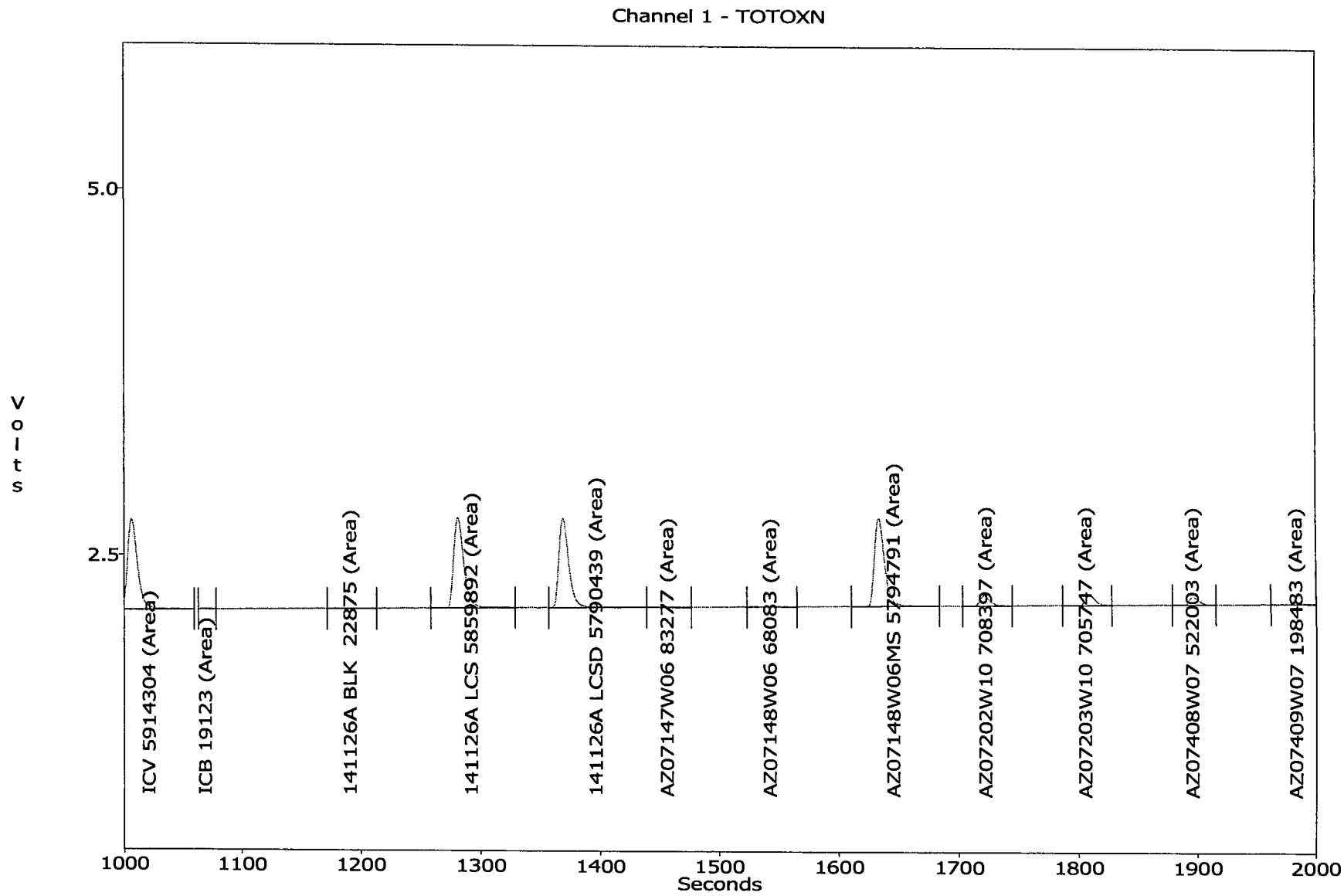
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 26, 2014 13:46:09
**DATA FILENAME:** I:\LACHAT\OMNION\141126NA.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141126NA.TRA



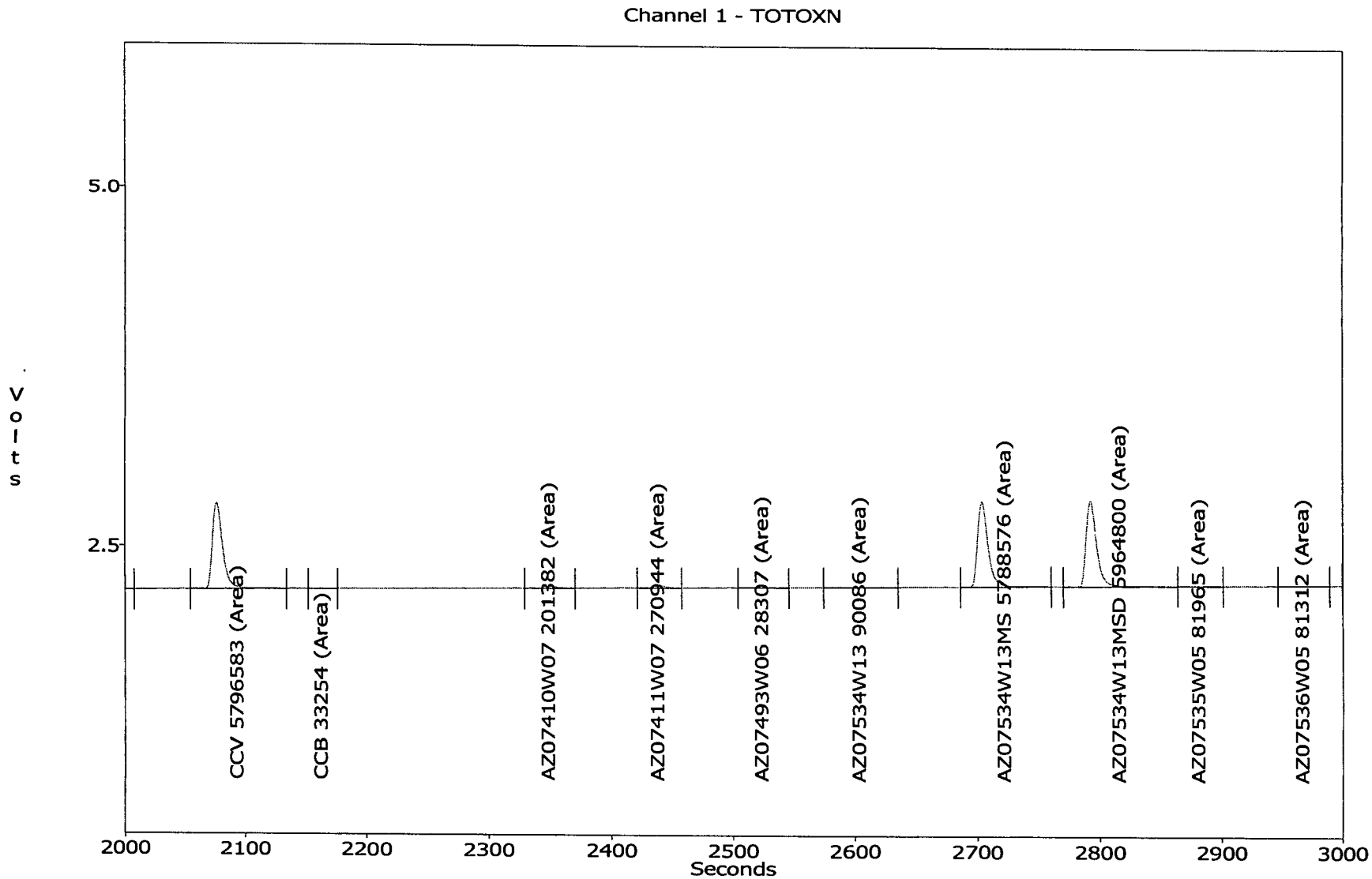
**OPERATOR:** Aileen
**ACQ. TIME:** Nov 26, 2014 13:46:09
**DATA FILENAME:** I:\LACHAT\OMNION\141126NA.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141126NA.TRA



**OPERATOR:** Aileen
**ACQ. TIME:** Nov 26, 2014 13:46:09
**DATA FILENAME:** I:\LACHAT\OMNION\141126NA.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141126NA.TRA



**OPERATOR:** Aileen
**ACQ. TIME:** Nov 26, 2014 13:46:09
**DATA FILENAME:** I:\LACHAT\OMNION\141126NA.FDT
**METHOD FILENAME:** I:\LACHAT\METHODS\TOTOXN1.MET
**TRAY FILENAME:** I:\LACHAT\TRAYS\141126NA.TRA



# Metrohm 814/809 Titrando Data

| Sample ID | Analysis Date/Time | Method | Titration Volume (to 8.3) | Titration Volume (total) | OH | CO3 | HCO3 | Total Alk | Unit | Sample Vol | N | Batch | Initials |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AZ07203W12 | 2014-11-24 17:02:29 UTC-8 | Alkalinity | 0.000 | 1.258 | 0.00 | 0.00 | 53.59 | 53.59 | mg/L | 25 mL | 0.0213 | 141124a | bb |
| AZ07202W12 | 2014-11-24 16:57:37 UTC-8 | Alkalinity | 0.000 | 1.242 | 0.00 | 0.00 | 52.91 | 52.91 | mg/L | 25 mL | 0.0213 | 141124a | bb |
| 141124a lcsd | 2014-11-24 16:38:14 UTC-8 | Alkalinity | 0.412 | 6.068 | 0.00 | 35.10 | 223.39 | 258.50 | mg/L | 25 mL | 0.0213 | 141124a | bb |
| 141124a lcs | 2014-11-24 16:27:30 UTC-8 | Alkalinity | 0.450 | 6.132 | 0.00 | 38.34 | 222.88 | 261.22 | mg/L | 25 mL | 0.0213 | 141124a | bb |
| 141124a blk | 2014-11-24 15:49:37 UTC-8 | Alkalinity | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | mg/L | 25 mL | 0.0213 | 141124a | bb |

Standards Prep Log Book# 62 page# 029

11/20/14 AP
Exp 11/27/14

AP 11/20/14

| FINAL CONC. (mg/L) |
|---|
| |
| 100 |
| |
| 0.0 |
| 0.35 |
| 0.5 |
| 1.0 |
| 5.0 |
| 10.0 |
| 20.0 |
| |
| 5.00 |

| NO3-N STDS | STD / STOCK | PREP DATE / LOT# | EXP. | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. W/DI H2O (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 100mg/L STOCK | O2SI | 2/28/14 | 8/30/15 | 1000 | 5 | 50 | 100 |
| | | 1057207 | | | | | |
| 0.1 | 100mg/L NO3-N STOCK | 11/20/14 | | | 0.1 | 100 | 0.1 |
| 0.2 | | | | | 0.2 | 100 | 0.2 |
| 0.5 | | | | | | | |
| 1 | | | 11/27/14 | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 10 | | | | | 10.0 | 100 | 10.0 |
| 20 | | | | | 20.0 | 100 | 20.0 |
| | | | | | | | |
| NO3-N ICV | CPI | 13L102 | 11/22/15 | 1000 | 0.25 | 50 | 5.00 |
| | | 5/27/14 | | | | | |

| FINAL CONC. (mg/L) |
|---|
| |
| 100 |
| |
| 0.0 |
| 0.35 |
| 0.5 |
| 1.0 |
| 5.0 |
| 10.0 |
| 20.0 |
| |
| 5.00 |

| LCS /MS /MSD | STOCK | LOT# 13L102 | EXP. | CONC STOCK [mg/L] | STD (mL) | FINAL VOL. | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| LCS | CPI | 11/22/15 | 11/27/14 | 1000 | 0.25 | 50 mL | 5 |
| MS / MSD | CPI | 11/22/15 | 11/27/14 | 1000 | 0.25 | 50 mL | 5 |

| | |
|---|---|
| 09/13/14 mm<br>exp 09/14/14 | Anion LCS, MS/MSD made as per page 48. |
| 09/15/14 mm | Anion eluent made as per page 22 |
| 09/15/14 mm<br>exp 09/16/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 09/16/14 mm<br>exp | Anion ICAL stock, curve, and ICV made as per page 47. |
| 09/16/14 mm<br>exp 09/17/14 | Anion LCS, MS/MSD made as per page 48. |

made as per p. 29 BD 11.11.13 DAP 11.12.13

per p. 29

as per p. 29

| METHOD 300 / 9056 | | ANION STOCK | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| O2SI | F- | 1,000 | 1037642-31166 | 01/04/14 | 0.25 | 5 |
| O2SI | Cl- | 5,000 | 1045796-32404 | 11/08/14 | 0.5 | 50 |
| O2SI | NO2-N | 1,000 | 1040585-31592 | 04/26/14 | 0.25 | 5 |
| Ultra Scientific | Br- | 1,000 | L00953-31570 | 09/30/14 | 1.25 | 25 |
| O2SI | NO3-N | 1,000 | 1040587-31591 | 04/26/14 | 0.5 | 10 |
| O2SI | PO4-P | 1,000 | 1040570-31590 | 04/26/14 | 0.5 | 10 |
| Ultra Scientific | SO4 | 5,000 | P00075-30305 | 02/28/14 | 0.5 | 50 |
| Brought up with milipore water to Final Volume of: | | | | | | 50 |

BD 11.11.13 DAP 11.12.13

| METHOD 300 / 9056 | | | | ANION CAL CURVE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ICAL #1 | ICAL#2 | ICAL#3 | ICAL #4 | ICAL #5 | ICAL #6 | ICAL #7 |
| ID# | mg/L | Prep Date | EXP. DATE | mL | mL | mL | mL | mL | mL | mL |
| ANION STOCK | 100 | | | 0.4 | 2 | 10 | 2 | 5 | 7 | 10 |
| Brought up w/ Milipore Water to final volume of (mL): | | | | 100 | 100 | 100 | 10 | 10 | 10 | na |
| Final Conc F (mg/L): | | | | 0.04 | 0.1 | 0.5 | 1 | 2.5 | 3.5 | 5 |
| Final Conc Cl (mg/L): | | | | 0.4 | 1 | 5 | 10 | 25 | 35 | 50 |
| Final Conc NO2-N (mg/L): | | | | 0.04 | 0.1 | 0.5 | 1 | 2.5 | 3.5 | 5 |
| Final Conc Br (mg/L): | | | | 0.2 | 0.5 | 2.5 | 5 | 12.5 | 17.5 | 25 |
| Final Conc NO3-N (mg/L): | | | | 0.08 | 0.2 | 1 | 2 | 5 | 7 | 10 |
| Final Conc PO4-P (mg/L): | | | | 0.08 | 0.2 | 1 | 2 | 5 | 7 | 10 |
| Final Conc SO4 (mg/L): | | | | 0.4 | 1 | 5 | 10 | 25 | 35 | 50 |

BD 11.11.13

BD 11.11.13 DAP 11.12.13

| METHOD 300 / 9056 | | ANION ICV / LCS | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.625 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | |

BD 11.11.13

A2.

| | |
|---|---|
| 11/7/14 | Anion Eluent made as per page 22 |
| 11/7/14 MM<br>exp 11/18/14 | Anion CCV, LCS, MS/MSD made as per page 48 |
| 11/19/14 MM<br>exp 11/20/14 | Anion CCV, LCS, MS/MSD made as per page 48. |
| 11/20/14 MM<br>exp 11/21/14 | Anion CCV, MS/MSD made as per page 48. |
| 11/21/14 MM<br>exp 11/22/14 | Anion LCS, MS/MSD made as per page 48. |
| 11/24/14 MM | Anion Eluent made as per page 22 |
| 11/24/14 MM<br>exp 11/25/14 | Anion CCV, LCS, MS/MSD made as per page 48. |

DS 11.11.13
exp 11.12.13

| | | ANION CCV | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| O2SI | F- | 1,000 | 1037642-31166 | 01/04/14 | 0.125 | 2.50 |
| O2SI | Cl- | 5,000 | 1045796-32404 | 11/08/14 | 0.25 | 25.0 |
| O2SI | NO2-N | 1,000 | 1040585-31592 | 04/26/14 | 0.125 | 2.5 |
| Ultra Scientific | Br- | 1,000 | L00953-31570 | 09/30/14 | 0.625 | 12.50 |
| O2SI | NO3-N | 1,000 | 1040587-31591 | 04/26/14 | 0.25 | 5.0 |
| O2SI | PO4-P | 1,000 | 1040570-31590 | 04/26/14 | 0.25 | 5.0 |
| Ultra Scientific | SO4 | 5,000 | P00075-30305 | 02/28/14 | 0.25 | 25.0 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | DS 11.11.13 |

DS 11.11.13
exp 11.12.13

| METHOD 300 / 9056 | | ANION LCS | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.63 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Brought up with milipore water to Final Volume of: | | | | | 50 | DS 11.11.13 |

DS 11.11.13
exp 11.12.13

| METHOD 300 / 9056 | | ANION MS/MSD | | | | |
|---|---|---|---|---|---|---|
| SUPPLIER | | mg/L | LOT # | EXP. | mL | Final Conc (mg/L) |
| CPI | F- | 1,000 | 12B199-30554 | 09/30/13 | 0.125 | 2.50 |
| CPI | Cl- | 1,000 | 13e314-32692 | 01/19/15 | 1.00 | 20.00 |
| CPI | NO2-N | 304 | 12g112-32702 | 01/19/15 | 0.50 | 3.04 |
| CPI | Br- | 1,000 | 12b205-32027 | 08/08/14 | 0.63 | 12.50 |
| CPI | NO3-N | 1,000 | 13b007-32700 | 01/19/15 | 0.25 | 5.00 |
| CPI | PO4-P | 1,000 | 12g005-32694 | 01/19/15 | 0.25 | 5.00 |
| CPI | SO4 | 1,000 | 01/19/15 | 13e315-32697 | 1.00 | 20.00 |
| Final Volume of Sample: (mL) | | | | | 50 | DS 11.11.13 |

Standards Prep Log book# 62 page #

10/31/14 AP
Exp 11/7/14

AP 10/31/14

| NH4 STDS | STD / STOCK | PREP DATE / LOT | OPEN / EXP DATE | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. DI (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| NH3-N CCV | O2SI | 6/18/13 | 12/8/14 | 1000 | 5 | 50 | 100 |
| | | Lot 1047250 | | | | | |
| 1 | 100mg/L NH4 STOCK | 10/31/14 | 11/7/14 | 100 | 0.0 | 100 | 0.0 |
| 2 | | | | | | | |
| 3 | | | | | 0.5 | 100 | 0.5 |
| 4 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 6 | | | | | 10.0 | 100 | 10.0 |
| 7 | | | | | 20.0 | 100 | 20.0 |
| | | Lot 011714 | | | | | |
| NH3-N ICV | Absolute | 2/21/14 | 1/17/16 | 1000 | 0.25 | 50 | 5.00 |

10-31-14 ek
exp 11-1-14

MBAS

2 ml x 1000 ppm LAS Absolute Stds LOT 071913-33718 / 200 ml DI
= 10 ppm LAS

ck'd 10-31-14

10 ml x 10 ppm LAS (10-31-14) / 100 ml DI = 1 ppm LAS

ck'd 10-31-14

CCV (0.8): 8 ml x 1 ppm LAS (10-31-14) / 100 ml DI

CCV2 / LCS: 5 ml x 10 ppm LAS (10-31-14) / 100 ml DI

MS: 5 ml x 10 ppm LAS (10-31-14) / 400 ml sample

11-3-14 ek
exp
11-4-14

**$OPO_4$-P For Method SM4500PE exp 11-4-14**

1mL X 1000ppm $PO_4$-P CPI LOT 12G005-32026 / 100mL DI→10ppm $PO_4$-P
10ppm $PO_4$-P (11-3-14) X 10mL / 100mL DI → 1ppm $PO_4$-P
1ppm $PO_4$-P (11-3-14) X 2.5mL / 50mL → 0.05ppm $PO_4$-P
↓ X5mL / ↓ → 0.10ppm $PO_4$-P
↓ X 10mL / ↓ → 0.20ppm $PO_4$-P
↓ X 25mL / ↓ → 0.50ppm $PO_4$-P

**ICV $PO_4$-P**

1000 PO4-P O2SI Lot 1049001-32799X 1mL / 100mL DI → 10ppm $PO_4$-P
10ppm $PO_4$-P (11-3-14)X 0.75mL / 50mL DI → 0.15ppm $PO_4$-P
LCS: 0.75mL X 10ppm $PO_4$-P (11-3-14 / 50mL DI → 0.15ppm $PO_4$-P
MS: 0.75mL X 10ppm $PO_4$-P (11-3-14) / 50mL sample → 0.15ppm $PO_4$-

11/3/14 BB
Book ck'd 10/28/14
exp. 8/26/15

0.02N $H_2SO_4$ Titrant for Alkalinity
200 mL 0.1 N $H_2SO_4$ (exp 8/26/14)
Final vol 1L w/DI water

9/10/14 AP
Exp 9/17/14

AP 9/10/14

| NH4 STDS | STD / STOCK | PREP DATE / LOT | OPEN / EXP DATE | CONC STOCK OR STD [mg/L] | STOCK OR STD (mL) | FINAL VOL. DI (mL) | FINAL CONC. (mg/L) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| NH3-N CCV | O2SI | 6/18/13 | 12/8/14 | 1000 | 5 | 50 | 100 |
| | | Lot 1047250 | | | | | |
| 1 | 100mg/L NH4 STOCK | 9/10/14 | 9/17/14 | 100 | 0.0 | 100 | 0.0 |
| 2 | | | | | | | |
| 3 | | | | | 0.5 | 100 | 0.5 |
| 4 | | | | | 1.0 | 100 | 1.0 |
| 5 | | | | | 5.0 | 100 | 5.0 |
| 6 | | | | | 10.0 | 100 | 10.0 |
| 7 | | | | | 20.0 | 100 | 20.0 |
| | | Lot 011714 | | | | | |
| NH3-N ICV | Absolute | 2/21/14 | 1/17/16 | 1000 | 0.25 | 50 | 5.00 |

7/10/14 BB — $NaHCO_3$ Inorganic Spiking Solution
exp 3/10/15 — 7.0007g $NaHCO_3$ BDH Lot # 183064
Final Vol 1L w/ DI water

100 ml DI
10 ml DI

7/12/14 BB — 0.02N $H_2SO_4$ Titrant for Alkalinity
exp 8/24/15 — 200 mL 0.1N $H_2SO_4$ (prep 8/26/14)
Final vol 1L w/DI water

+6
+6 ICV

9-12-14 CK — 7199
exp 9-13-14 — 1ml x 100 ppm $Cr^{+6}$ (9-9-14) / 100 ml DI = 1000 ppb $Cr^{+6}$
1ml x 1000 ppb $Cr^{+6}$ (9-12-14) / 100 ml DI = 10 ppb $Cr^{+6}$ CCV
LCS, MS: 0.25 ml x 1000 ppb $Cr^{+6}$ (9-12-14) / 25 ml DI or sampl

+6
+6
+6
+6
+6

+6 ICV

9/13/14 MM — 1mL x 100ppm $Cr^{6+}$ (9-9-14) / 100mL DI = 1000ppb $Cr^{6+}$ Std
exp 9/14/14 — 1mL x 1000 $Cr^{6+}$ ppb (9/13/14) / 100mL DI = 10ppb $Cr^{6+}$ (CCV)
1mL x 100ppm $Cr^{6+}$ (9/10/14) / 100mL DI = 1000ppb $Cr^{6+}$ ICV
1mL x 1000 ppb $Cr^{6+}$ (9/13/14) / 100mL DI = 10ppb $Cr^{6+}$ (LCS)
MS: 0.25 mL x 1000ppb $Cr^{6+}$ ICV (9/13/14) / 25mL sample = 10ppb

+6

9-16-14 CK — 3060A Digestion
exp 9-17-14 — 1ml x 100 ppm $Cr^{+6}$ (9-9-14) / 100 ml DI = 1 ppm $Cr^{+6}$

BB 10/28/14

BB 10/28/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.83

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02113

BB 10/30/14

BB10/30/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.77

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02124

BB 11/6/14

BB 11/6/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.8

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02119

11/10/14 BB Replaced pH 7 Buffer CPI lot # 1065597-34085
exp BB of: 11/10/14
exp: 3/20/16

BB 11/17/14

BB 11/17/14

**NORMALITY OF TITRANT (0.02 N H2SO4)**

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.75

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02128

# 353.2 Injection Log

Directory: I:\Lachat\UPLOAD\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 1 | 26 Nov 2014 | 13:46 | NO3 CALSTD (20.0) | | 141126NA | 1. |
| 2 | 26 Nov 2014 | 13:47 | NO3 CALSTD (10.0) | | 141126NA | 1. |
| 3 | 26 Nov 2014 | 13:49 | NO3 CALSTD (5.0) | | 141126NA | 1. |
| 4 | 26 Nov 2014 | 13:50 | NO3 CALSTD (1.0) | | 141126NA | 1. |
| 5 | 26 Nov 2014 | 13:52 | NO3 CALSTD (0.20) | | 141126NA | 1. |
| 6 | 26 Nov 2014 | 13:53 | NO3 CALSTD (0.10) | | 141126NA | 1. |
| 7 | 26 Nov 2014 | 13:55 | NO3 CALSTD (0.00) | | 141126NA | 1. |
| 8 | 26 Nov 2014 | 13:58 | CCV | | 141126NA | 1. |
| 9 | 26 Nov 2014 | 13:59 | CCB | | 141126NA | 1. |
| 10 | 26 Nov 2014 | 14:01 | ICV | | 141126NA | 1. |
| 11 | 26 Nov 2014 | 14:02 | ICB | | 141126NA | 1. |
| 12 | 26 Nov 2014 | 14:04 | 141126A BLK | | 141126NA | 1. |
| 13 | 26 Nov 2014 | 14:05 | 141126A LCS | | 141126NA | 1. |
| 14 | 26 Nov 2014 | 14:07 | 141126A LCSD | | 141126NA | 1. |
| 18 | 26 Nov 2014 | 14:13 | AZ07202W10 | | 141126NA | 1. |
| 19 | 26 Nov 2014 | 14:14 | AZ07203W10 | | 141126NA | 1. |
| 22 | 26 Nov 2014 | 14:19 | CCV | | 141126NA | 1. |
| 23 | 26 Nov 2014 | 14:20 | CCB | | 141126NA | 1. |

# 300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 2 | 16 Sep 2014 | 13:01 | CAL STD #1 9/16/14 | | 140916a | 1. |
| 3 | 16 Sep 2014 | 13:12 | CAL STD #2 | | 140916a | 1. |
| 4 | 16 Sep 2014 | 13:23 | CAL STD #3 | | 140916a | 1. |
| 5 | 16 Sep 2014 | 13:35 | CAL STD #4 | | 140916a | 1. |
| 6 | 16 Sep 2014 | 13:46 | CAL STD #5 | | 140916a | 1. |
| 7 | 16 Sep 2014 | 13:57 | CAL STD #6 | | 140916a | 1. |
| 8 | 16 Sep 2014 | 14:08 | CAL STD #7 | | 140916a | 1. |
| 9 | 16 Sep 2014 | 14:20 | 140916A ICV | | 140916a | 1. |
| 0 | 16 Sep 2014 | 14:31 | ICB | | 140916a | 1. |

# 300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

| RunID | Injected | | Sample Name | Misc Info | FileName | Multiplier |
|---|---|---|---|---|---|---|
| 25 | 21 Nov 2014 | 12:36 | CCV 141120 | | 141121a | 1. |
| 26 | 21 Nov 2014 | 12:47 | CCB | | 141121a | 1. |
| 27 | 21 Nov 2014 | 12:58 | 141121B LCS | | 141121a | 1. |
| 30 | 21 Nov 2014 | 13:32 | AZ07203W12 | | 141121a | 1. |
| 37 | 21 Nov 2014 | 14:51 | CCV 141120 | | 141121a | 1. |
| 38 | 21 Nov 2014 | 15:02 | CCB | | 141121a | 1. |
| 43 | 21 Nov 2014 | 15:58 | AZ07202W12 | | 141121a | 1. |
| 49 | 21 Nov 2014 | 17:05 | CCV 141120 | | 141121a | 1. |
| 50 | 21 Nov 2014 | 17:16 | CCB | | 141121a | 1. |

**EMAX**

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**CLIENT:** **BATTELLE**

**PROJECT:** **RED HILL PHASE 1B**

**SDG:** **14J130**


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| GC/MS-VOA | ** | 2000 – |
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| GC-VOA | ** | 4000 – |
| GC-SVOA | METHOD 3520C/8015B | 5000 – 5068 |
| HPLC | ** | 6000 – |
| METALS | ** | 7000 – |
| WET | ** | 8000 – |
| OTHERS | APPENDIX | 9000 – 9016 |


** - Not Requested

Revised Report

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 11-24-2014
EMAX Batch No.: 14J130

Attn: Carolyn Scala

Battelle
301 South State St., Suite N001
Newton PA 18940

Subject: Supplemental to Test Report 14J130
Project: Red Hill Phase 1b

---

Enclosed is the Laboratory report for samples received on 10/21/14.
The data reported relate only to samples listed below :

| Sample ID | Control # | Col Date | Matrix | Analysis |
|---|---|---|---|---|
| RHMW07-GW-01 | J130-01 | 10/20/14 | WATER | CANCELLED |
| | | | | TPH |
| | | | | PAH BY 8270C SIM ULTRA LOW |
| RHMW07-GW-01FD | J130-02 | 10/20/14 | WATER | CANCELLED |
| | | | | TPH |
| | | | | PAH BY 8270C SIM ULTRA LOW |

These pages are to replace the original submittal. The results for TPH were recalculated to remove discrete peaks per Client's request.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

Revised Report

# CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. * 14J130

PROJECT CODE:

CLIENT: Battelle / Parsons
PROJECT: 749435
COORDINATOR: Mitch Jonsen
TEL: 801 380 1375 FAX: EMAIL:
SEND REPORT TO: Gene Wright 801 553 3317
COMPANY: Parsons
ADDRESS:
EMAX PM: not known

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

ANALYSIS REQUIRED: TPH - GRO; TPH - DRO/ORO; PAHs

TAT: ☐ Rush ____hrs. ☐ Rush ____days ☐ 7 days ☐ 14 days ☐ 21 days ☐ 30 days ☐ ____days ☐

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | PRESERVATIVE CODE (TPH - GRO) | (TPH - DRO/ORO) | (PAHs) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RHMW07-GW-01 | Hawaii | 10/20/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | no preservative |
| 2 | RHMW07-GW-01FD | " " | 10/20/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | no preservative |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | note: water has drilling |
| 5 | | | | | | | | | | | | | foam i.e ethylglycol ether |
| 6 | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |

Instructions

| Cooler # | Temp. (°C) | Sample #s |
|---|---|---|
| 1 | 5.7 | |

SAMPLER

COURIER/AIRBILL: Fedex 8033 6937 1554

| RELINQUISHED BY | Date | Time | RECEIVED BY |
|---|---|---|---|
| [signature] | 10/20/14 | 1530 | |
| | 10/21/14 | 09:15 | [signature] |

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

**SAMPLE RECEIPT FORM 1**

Reference Number: SM02.7.3

| Type of Delivery | Airbill / Tracking Number | ECN 14J130 |
|---|---|---|
| ☑ Fedex ☐ UPS ☐ GSO ☐ Others | 8033 9937 1554 | Recipient Cecilia Chavez |
| ☐ EMAX Courier ☐ Client Delivery | | Date 10-21-14 Time 0915 |

**COC INSPECTION**

| | | | | | |
|---|---|---|---|---|---|
| ☑ Client Name | ☑ Client PM/FC | ☐ Sampler Name | ☑ Sampling Date/Time | ☑ Sample ID | ☑ Matrix |
| ☐ Address | ☑ Tel # / Fax # | ☐ Courier Signature | ☑ Analysis Required | ☑ Preservative (if any) | ☐ TAT |
| Safety Issues (if any) | ☐ High concentrations expected | ☐ From Superfund Site | ☐ Rad screening required | | |

Note:

**PACKAGING INSPECTION**

| | | | | | |
|---|---|---|---|---|---|
| Container | ☑ Cooler | ☐ Box | ☐ Other | | |
| Condition | ☐ Custody Seal | ☐ Intact | ☐ Damaged | | |
| Packaging | ☑ Bubble Pack | ☐ Styrofoam | ☐ Popcorn | ☑ Sufficient | ☐ _____ |
| Temperatures (Cool, ≤6 °C but not frozen) | B ☑ Cooler 1 5.7 °C | ☐ Cooler 2_____ °C | ☐ Cooler 3_____ °C | ☐ Cooler 4_____ °C | ☐ Cooler 5_____ °C |
| | ☐ Cooler 6_____ °C | ☐ Cooler 7_____ °C | ☐ Cooler 8_____ °C | ☐ Cooler 9_____ °C | ☐ Cooler 10_____ °C |

*Thermometer:* *A - S/N* _____ (B) *S/N* 140252010 *C - S/N* _____ *D - S/N* _____

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note:

**DISCREPANCIES**

| LabSampleID | LabSampleContainerID | Code | ClientSample Label ID / Information | Corrective Action |
|---|---|---|---|---|
| 2 | 8 | D10 | | R1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |

10/21/14

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

**NOTES/OBSERVATIONS:**

**LEGEND:**

☐ **Continue to next page.**

| Code | Description- Sample Management | Code | Description-Sample Management | Code | Description-Sample Management |
|---|---|---|---|---|---|
| D1 | Analysis is not indicated in _____ | D13 | Out of Holding Time | R1 | Proceed as indicated in ☐ COC ☐ Label |
| D2 | Analysis mismatch COC vs label | D14 | Bubble is >6mm | R2 | Refer to attached instruction |
| D3 | Sample ID mismatch COC vs label | D15 | No trip blank in cooler | R3 | Cancel the analysis |
| D4 | Sample ID is not indicated in _____ | D16 | Preservation not indicated in _____ | R4 | Use vial with smallest bubble first |
| D5 | Container -[improper] [leaking] [broken] | D17 | Preservation mismatch COC vs label | R5 | Log-in with latest sampling date and time+1 min |
| D6 | Date/Time is not indicated in _____ | D18 | Insufficient chemical preservative | R6 | Adjust pH as necessary |
| D7 | Date/Time mismatch COC vs label | D19 | Insufficient Sample | R7 | Filter and preserved as necessary |
| D8 | Sample listed in COC is not received | D20 | No filtration info for dissolved analysis | R8 | |
| D9 | Sample received is not listed in COC | D21 | No sample for moisture determination | R9 | |
| D10 | No initial/date on corrections in COC/label | D22 | | R10 | |
| D11 | Container count mismatch COC vs received | D23 | | R11 | |
| D12 | Container size mismatch COC vs received | D24 | | R12 | |

**REVIEWS:**

**Sample Labeling** 10/21/14 **Date** 10/21/14

**SRF** **Date** 10/21/14

**PM** **Date** 10/21/14

## Andy Mai

**From:** Scala, Carolyn [ScalaC@battelle.org]
**Sent:** Friday, October 24, 2014 11:18 AM
**To:** Andy Mai
**Cc:** Matt Morrell
**Subject:** RE: Red Hill; login SDG 14J130

Yes, understood. Thank you Andy.
-Carolyn

**From:** Andy Mai [mailto:AMai@emaxlabs.com]
**Sent:** Friday, October 24, 2014 2:17 PM
**To:** Scala, Carolyn
**Cc:** Matt Morrell
**Subject:** RE: Red Hill; login SDG 14J130

No worries Carolyn. We will not report the results, but since the samples were already analyzed, we will still have to charge for the cost of the analysis.

Thanks,

Andy Mai
EMAX Laboratories, Inc.
1835 W. 205th St.
Torrance, CA 90501
Tel: 310-618-8889 ext. 117
Fax: 310-618-0818
AMai@emaxlabs.com

**From:** Scala, Carolyn [mailto:ScalaC@battelle.org]
**Sent:** Friday, October 24, 2014 7:27 AM
**To:** Andy Mai
**Cc:** Matt Morrell
**Subject:** RE: Red Hill; login SDG 14J130

Hi Andy. I don't think I got back to you on this yesterday, my apologies. Please do not report the results from the first TPH-GRO sample and duplicate. This will be resampled on Monday and you will receive the samples with trip blank on Tuesday.
Thank you, -Carolyn

**From:** Andy Mai [mailto:AMai@emaxlabs.com]
**Sent:** Thursday, October 23, 2014 1:43 PM
**To:** Scala, Carolyn
**Cc:** Matt Morrell
**Subject:** RE: Red Hill; login SDG 14J130

Carolyn—The samples were analyzed last night. Do you still want us to report the results?

Thanks,

Andy Mai
EMAX Laboratories, Inc.
1835 W. 205th St.

Torrance, CA 90501
Tel: 310-618-8889 ext. 117
Fax: 310-618-0818
AMai@emaxlabs.com

**From:** Scala, Carolyn [mailto:ScalaC@battelle.org]
**Sent:** Thursday, October 23, 2014 10:24 AM
**To:** Andy Mai
**Cc:** Matt Morrell
**Subject:** RE: Red Hill; login SDG 14J130

OK, if I'm too late that is fine. Just let me know either way. We will be sending the recollected samples regardless.
Thanks, -Carolyn

**From:** Andy Mai [mailto:AMai@emaxlabs.com]
**Sent:** Thursday, October 23, 2014 1:22 PM
**To:** Scala, Carolyn
**Cc:** Matt Morrell
**Subject:** RE: Red Hill; login SDG 14J130

Hi Carolyn,

I think the samples were already analyzed because of the short hold... I will check on the status and get back to you.

Thanks,

Andy Mai
EMAX Laboratories, Inc.
1835 W. 205th St.
Torrance, CA 90501
Tel: 310-618-8889 ext. 117
Fax: 310-618-0818
AMai@emaxlabs.com

**From:** Scala, Carolyn [mailto:ScalaC@battelle.org]
**Sent:** Thursday, October 23, 2014 9:55 AM
**To:** Andy Mai
**Cc:** Matt Morrell
**Subject:** RE: Red Hill; login SDG 14J130

Hi Andy.
Please cancel the TPH-GRO analysis from this SDG. There was no trip blank sent, so we are recollecting the TPH-GRO sample and duplicate today and will send with a trip blank this time.

Thank you, -Carolyn

**From:** Andy Mai [mailto:AMai@emaxlabs.com]
**Sent:** Tuesday, October 21, 2014 6:44 PM
**To:** Scala, Carolyn
**Subject:** Red Hill; login SDG 14J130

## Andy Mai

**From:** Scala, Carolyn [ScalaC@battelle.org]
**Sent:** Friday, November 21, 2014 11:44 AM
**To:** Andy Mai
**Subject:** RE: data validation for Battelle's Pearl Harbor project

Thank you Andy. We would like to recalculate the TPH result by removing the peak. Can you let us know the result before finalizing the report? Please let me know when we'll be able to get the new result.
Really appreciate all of your support on this one. Thanks!
-Carolyn

**From:** Andy Mai [mailto:AMai@emaxlabs.com]
**Sent:** Friday, November 21, 2014 1:41 PM
**To:** Scala, Carolyn
**Subject:** RE: data validation for Battelle's Pearl Harbor project

Sorry Carolyn...Our system is not sophisticated enough to report the results both ways. It only stores the results one way or there other. Also, reporting both results will cause issues with the NEDD EDD.

If it is decided that the peaks should be removed, we can mention that the peaks were removed because they do not resemble the petroleum hydrocarbon pattern.

Thanks,

Andy Mai
**EMAX Laboratories, Inc.**
1835 W. 205th St.
Torrance, CA 90501
Tel: 310-618-8889 ext. 117
Fax: 310-618-0818
AMai@emaxlabs.com

*Note: In observance of the upcoming holidays, EMAX will be closed on the following days:*
*Thursday- November 27, 2014*
*Friday- November 28, 2014*

**From:** Scala, Carolyn [mailto:ScalaC@battelle.org]
**Sent:** Friday, November 21, 2014 9:35 AM
**To:** Andy Mai
**Subject:** RE: data validation for Battelle's Pearl Harbor project

Thanks for the email Andy. I am going to check with the client to confirm how this should be reported and I will get back to you.

As an option, would it be possible to report the result both ways, with and without the discrete peak? And then add a note to the report saying that the DRO was recalculated based on the identification of butoxyacetic acid in the sample and the removal of this non-petroleum related compound from the result?

Thanks, -Carolyn

**Revised Report**

**From:** Andy Mai [mailto:AMai@emaxlabs.com]
**Sent:** Thursday, November 20, 2014 9:44 PM
**To:** Scala, Carolyn
**Subject:** RE: data validation for Battelle's Pearl Harbor project

## Andy Mai

**From:** Chang, Tammy [Tammy.Chang@parsons.com]
**Sent:** Thursday, November 20, 2014 3:57 PM
**To:** 'Scala, Carolyn'
**Cc:** Wright, Gene; Andy Mai
**Subject:** RE: data validation for Battelle's Pearl Harbor project

Carolyn:

I just talked to the analyst and went over her interpretation of the chromatographs.

Basically, the TPH-DRO extract is exactly the same as SVOC extract. Analyst injected the TPH-DRO extract into the GC/MS and clearly saw a peak came out early stage of the run, similar to what happened with the TPH-Diesel run on GC.

GC/MS software matches this peak with a compound named Butoxyacetic acid. The analyst went on line and look for the relationship between this compound and ethylene glycol monobutyl ether. It says Butoxyacetic acid is one of the metabolites of the ethylene glycol monobutyl ether. The conclusion is that the peak we saw in the original TPH-DRO run is not related to diesel. I suggest EMAX to remove that peak (from both samples) and recalculate the TPH-DRO concentrations.

I am getting ready to go out of town, but, will look into these two compounds more from the internet tomorrow morning if you wish me to.

Tammy

**From:** Andy Mai [mailto:AMai@emaxlabs.com]
**Sent:** Thursday, November 20, 2014 3:49 PM
**To:** 'Scala, Carolyn'; Chang, Tammy
**Cc:** Wright, Gene
**Subject:** RE: data validation for Battelle's Pearl Harbor project

Hi Carolyn,

Please see attached for the raw data from the TPH extract. The chemist noted peak #2 might be your compound of interest.

Thanks,

Andy Mai
**EMAX Laboratories, Inc.**
1835 W. 205th St.
Torrance, CA 90501
Tel: 310-618-8889 ext. 117
Fax: 310-618-0818
AMai@emaxlabs.com

**Revised Report**

*Note: In observance of the upcoming holidays, EMAX will be closed on the following days:*
*Thursday- November 27, 2014*
*Friday- November 28, 2014*

**From:** Scala, Carolyn [mailto:ScalaC@battelle.org]
**Sent:** Thursday, November 20, 2014 4:46 AM

FedEx Express Package US Airbill

FedEx Tracking Number 8033 9937 1554

Form ID No. 0215

**From**

Date 10/20/12

Sender's Name MITCH JENSEN Phone 801 572-5999

Company PARSONS GOVT

Address 10235 S JORDAN GTWY STE 300

Dept./Floor/Suite/Room

City SOUTH JORDAN State UT ZIP 84095-4188

**Your Internal Billing Reference** 640016.0006.74943.05000.LBR6D

**To**

Recipient's Name Sample Receiving Phone 310 618-9889

Company EMAX Laboratories Inc.

Address 1835 W. 205th Street

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance State CA ZIP 90501

HOLD Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

HOLD Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

0108334348

8033 9937 1554

**4 Express Package Service** * To mos

**NOTE: Service order has changed. Please select ca**

**Next Business Day**

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

**5 Packaging** * Declared value limit $500.

FedEx Envelope* FedEx Pak*

**6 Special Handling and Delivery Si**

SATURDAY Delivery — **NOT available for** FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

**Does this shipment contain dangerous goods?**

One box must be checked.

No

Yes — As per attached Shipper's Declaration.

Yes — Shipper's Declaration not required.

Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

**7 Payment** *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

Obtain recip. Acct. No.

Sender — Acct. No. in Section 1 will be billed.

Recipient

Third Party

Credit Card

Cash/Check

Total Packages

Total Weight ____ lbs.

Credit Card Auth.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

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TRK# 0215 8033 9937 1554

WZ HHRA

BUCK 1,000,400,3333

1065

## REPORTING CONVENTIONS

### DATA QUALIFIERS:

| Lab Qualifier | AFCEE Qualifier | Description |
|---|---|---|
| J | F | Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL. |
| N | | Indicates presumptive evidence of a compound. |
| B | B | Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level. |
| E | J | Indicates that the result is above the maximum calibration range. |
| * | * | Out of QC limit. |

**Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.**

### ACRONYMS AND ABBREVIATIONS:

| | |
|---|---|
| **CRDL** | Contract Required Detection Limit |
| **RL** | Reporting Limit |
| **MRL** | Method Reporting Limit |
| **MDL** | Method Detection Limit |
| **DL** | Detection Limit |
| **LOD** | Limit of Detection |
| **LOQ** | Limit of Quantitation |
| **DO** | Diluted out |

### DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

# LABORATORY REPORT FOR

# BATTELLE

# RED HILL PHASE 1B

## METHOD 3520C/8270C SIM
## SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

SDG#: 14J130

CASE NARRATIVE

Client : BATTELLE

Project : RED HILL PHASE 1B

SDG : 14J130

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

A total of two (2) water samples were received on 10/21/14 for PAH BY 8270C SIM Ultra Low analysis, Method SW3520C/8270C SIM in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 and project SAP August 2014.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were evaluated and results were within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for SVJ034WL/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogate was added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE

SEMI VOLATILE ORGANICS BY GC/MS SIM

Client : BATTELLE
Project : RED HILL PHASE 1B

SDG NO. : 14J130
Instrument ID : T-OFO

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | SVJ034WB | 1 | NA | 10/28/1410:13 | 10/23/1410:00 | RJF033 | REF014 | SVJ034W | Method Blank |
| LCS1W | SVJ034WL | 1 | NA | 10/28/1410:41 | 10/23/1410:00 | RJF034 | REF014 | SVJ034W | Lab Control Sample (LCS) |
| LCD1W | SVJ034WC | 1 | NA | 10/28/1411:08 | 10/23/1410:00 | RJF035 | REF014 | SVJ034W | LCS Duplicate |
| RHMW07-GW-01 | J130-01 | 0.96 | NA | 10/28/1411:44 | 10/23/1410:00 | RJF036 | REF014 | SVJ034W | Field Sample |
| RHMW07-GW-01FD | J130-02 | 1 | NA | 10/28/1412:03 | 10/23/1410:00 | RJF037 | REF014 | SVJ034W | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/20/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/21/14 |
| Batch No. | : 14J130 | Date Extracted: | 10/23/14 10:00 |
| Sample ID: | RHMW07-GW-01 | Date Analyzed: | 10/28/14 11:44 |
| Lab Samp ID: | J130-01 | Dilution Factor: | 0.96 |
| Lab File ID: | RJF036 | Matrix : | WATER |
| Ext Btch ID: | SVJ034W | % Moisture : | NA |
| Calib. Ref.: | REF014 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.019 | 0.0048 | 0.0096 |
| ACENAPHTHYLENE | ND | 0.019 | 0.0048 | 0.0096 |
| ANTHRACENE | ND | 0.019 | 0.0048 | 0.0096 |
| BENZO(A)ANTHRACENE | ND | 0.019 | 0.0048 | 0.0096 |
| BENZO(A)PYRENE | ND | 0.019 | 0.0048 | 0.0096 |
| BENZO(B)FLUORANTHENE | ND | 0.019 | 0.0048 | 0.0096 |
| BENZO(K)FLUORANTHENE | ND | 0.019 | 0.0048 | 0.0096 |
| BENZO(G,H,I)PERYLENE | ND | 0.019 | 0.0048 | 0.0096 |
| CHRYSENE | ND | 0.019 | 0.0048 | 0.0096 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.019 | 0.0048 | 0.0096 |
| FLUORANTHENE | ND | 0.019 | 0.0048 | 0.0096 |
| FLUORENE | ND | 0.019 | 0.0048 | 0.0096 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.019 | 0.0048 | 0.0096 |
| NAPHTHALENE | ND | 0.096 | 0.024 | 0.048 |
| PHENANTHRENE | ND | 0.019 | 0.0048 | 0.0096 |
| PYRENE | ND | 0.019 | 0.0048 | 0.0096 |
| 2-METHYLNAPHTHALENE | 0.0084J | 0.019 | 0.0048 | 0.0096 |
| 1-METHYLNAPHTHALENE | ND | 0.019 | 0.0048 | 0.0096 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.422 | 0.4800 | 87.9 | 50-135 |

Quantitation Report (QT Reviewed)

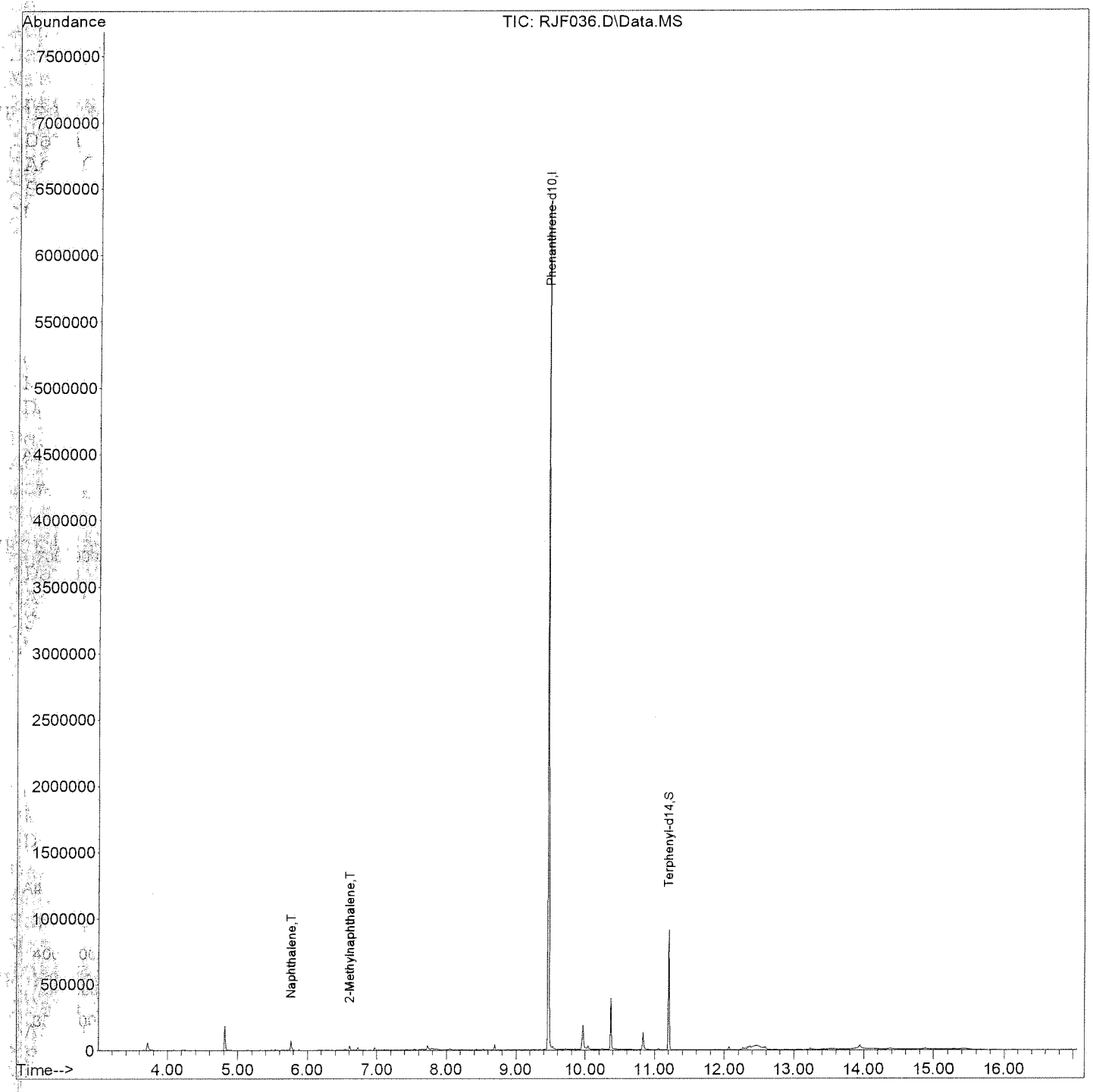
Data File : C:\msdchem\1\DATA\14J28\RJF036.D Vial: 15
Acq On : 28 Oct 2014 11:44 Operator: KVu
Sample : 14J130-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:06:21 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

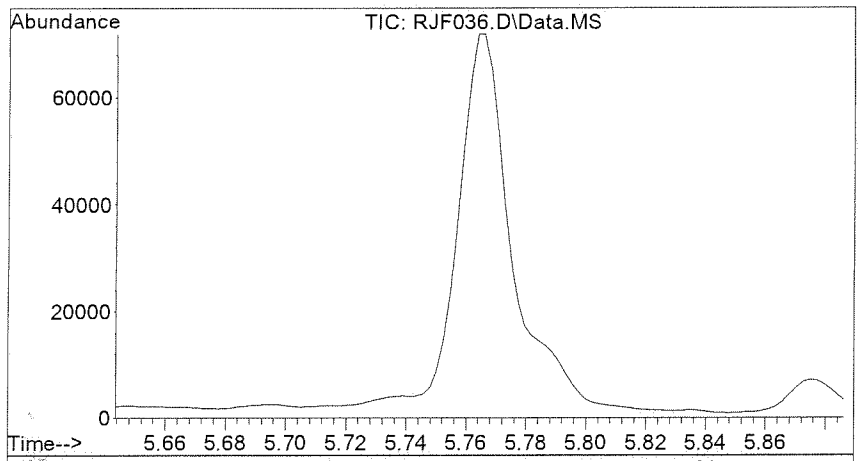
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.468 | 188 | 4893440 | 2000.00 | ppb | 0.02 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.203 | 244 | 795556 | 439.59 | ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = | 87.92% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.766 | 128 | 82323 | 24.58 | ppb < PQL | 97 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 19724 | 8.78 | ppb | 95 |

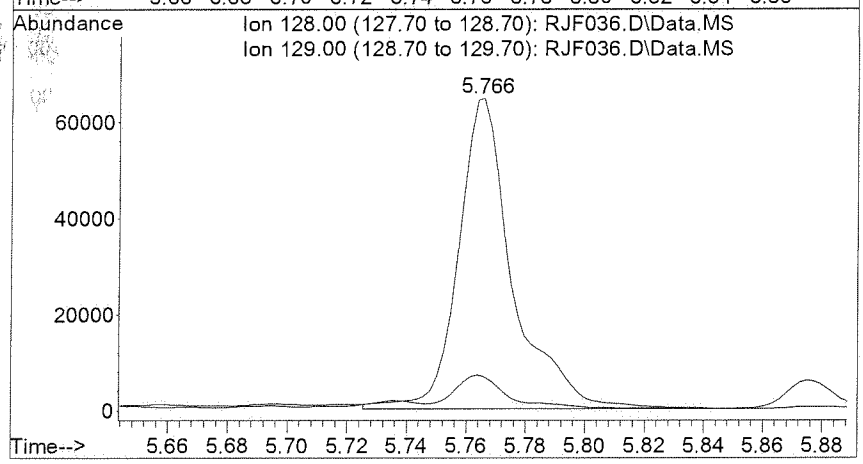
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF036.D
Vial: 15
Acq On : 28 Oct 2014 11:44
Operator: KVu
Sample : 14J130-01
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:06:21 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



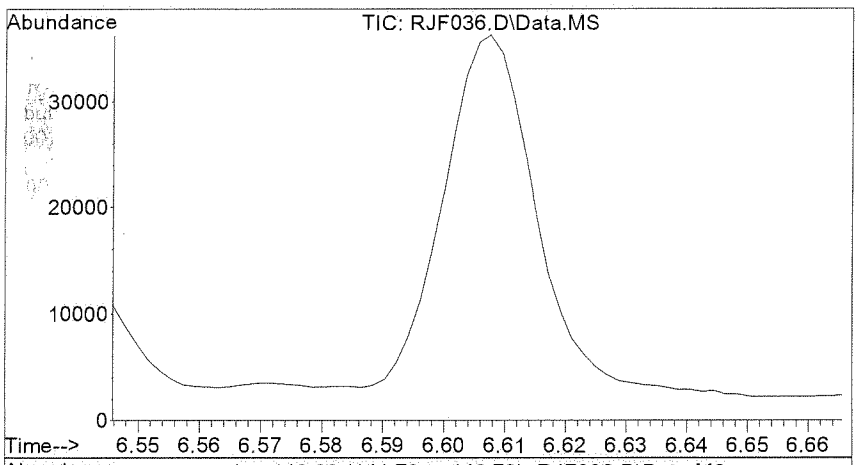


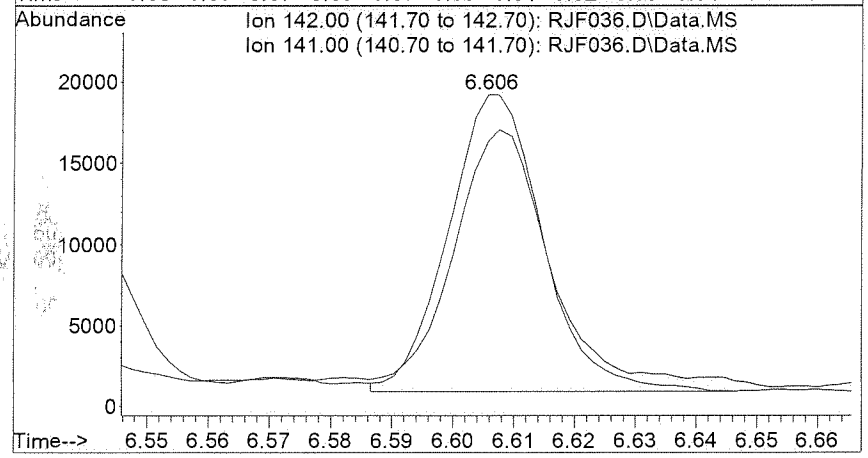




#2
Naphthalene
Concen: 24.58 ppb
RT: 5.766 min Scan# 1220
Delta R.T. 0.025 min
Lab File: RJF036.D
Acq: 28 Oct 2014 11:44

Tgt Ion:128 Resp: 82323

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 129 | 10.2 | 0.0 | 41.2 |




#3
2-Methylnaphthalene
Concen: 8.78 ppb
RT: 6.606 min Scan# 1597
Delta R.T. 0.029 min
Lab File: RJF036.D
Acq: 28 Oct 2014 11:44

Tgt Ion:142 Resp: 19724

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 79.7 | 53.9 | 113.9 |

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/20/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/21/14 |
| Batch No. | : 14J130 | Date Extracted: | 10/23/14 10:00 |
| Sample ID: | RHMW07-GW-01FD | Date Analyzed: | 10/28/14 12:03 |
| Lab Samp ID: | J130-02 | Dilution Factor: | 1 |
| Lab File ID: | RJF037 | Matrix : | WATER |
| Ext Btch ID: | SVJ034W | % Moisture : | NA |
| Calib. Ref.: | REF014 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.020 | 0.0050 | 0.010 |
| ACENAPHTHYLENE | ND | 0.020 | 0.0050 | 0.010 |
| ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(B)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(K)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(G,H,I)PERYLENE | ND | 0.020 | 0.0050 | 0.010 |
| CHRYSENE | ND | 0.020 | 0.0050 | 0.010 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORENE | ND | 0.020 | 0.0050 | 0.010 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| NAPHTHALENE | ND | 0.10 | 0.025 | 0.050 |
| PHENANTHRENE | ND | 0.020 | 0.0050 | 0.010 |
| PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| 2-METHYLNAPHTHALENE | 0.0060J | 0.020 | 0.0050 | 0.010 |
| 1-METHYLNAPHTHALENE | ND | 0.020 | 0.0050 | 0.010 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.347 | 0.5000 | 69.5 | 50-135 |

Quantitation Report (QT Reviewed)

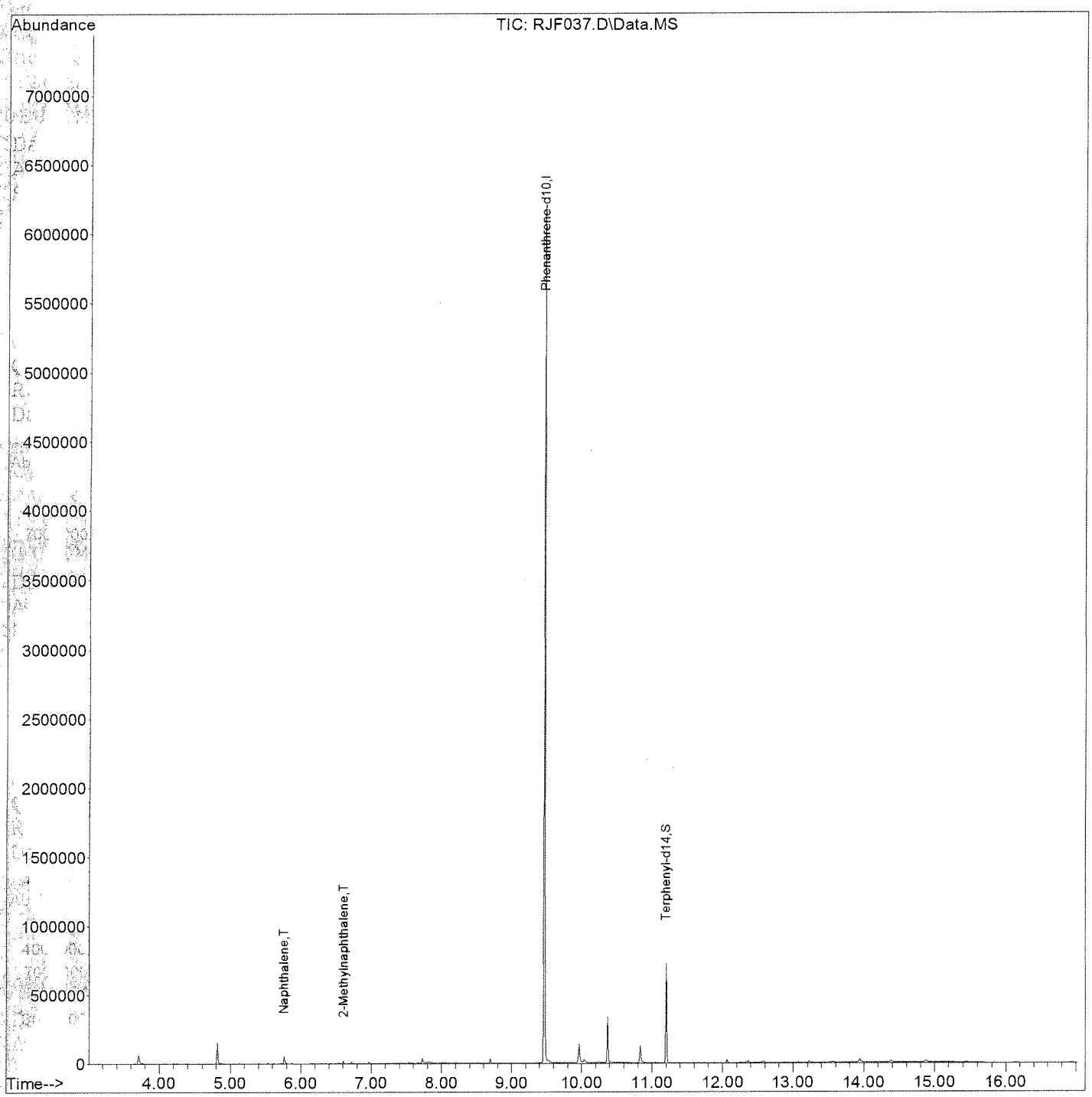
Data File : C:\msdchem\1\DATA\14J28\RJF037.D Vial: 16
Acq On : 28 Oct 2014 12:03 Operator: KVu
Sample : 14J130-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:06:37 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

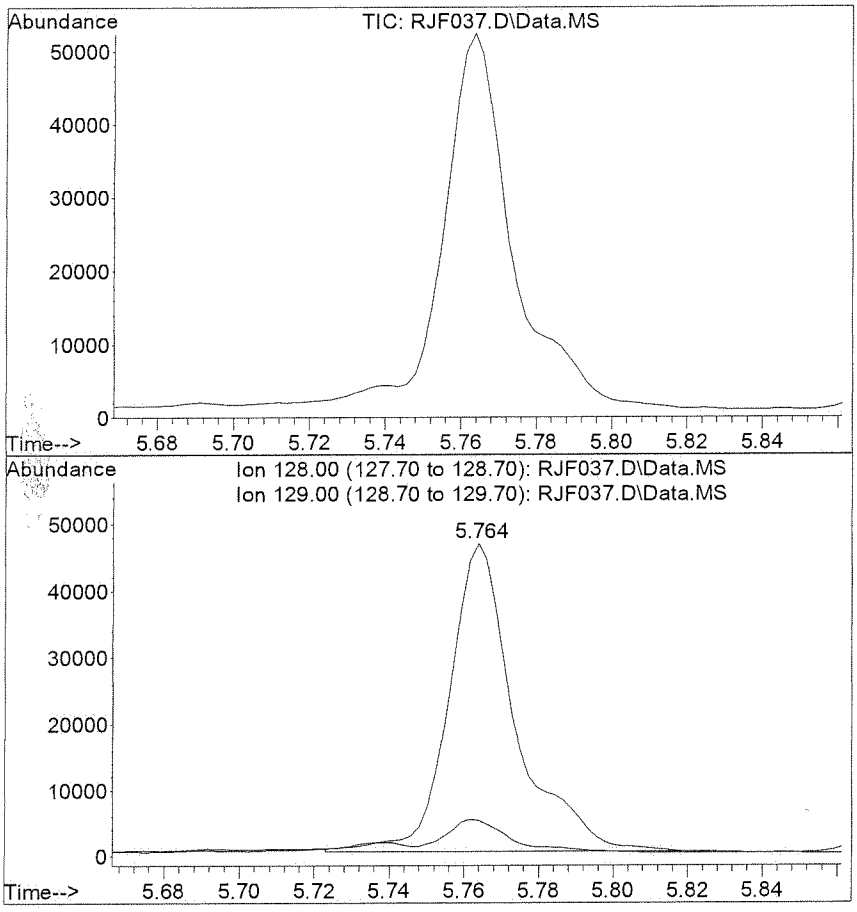
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 4832655 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.201 | 244 | 620741 | 347.31 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 69.46% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 57942 | 17.52 ppb <DL | 98 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 13361 | 6.02 ppb | 97 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF037.D
Vial: 16
Acq On : 28 Oct 2014 12:03
Operator: KVu
Sample : 14J130-02
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:06:37 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

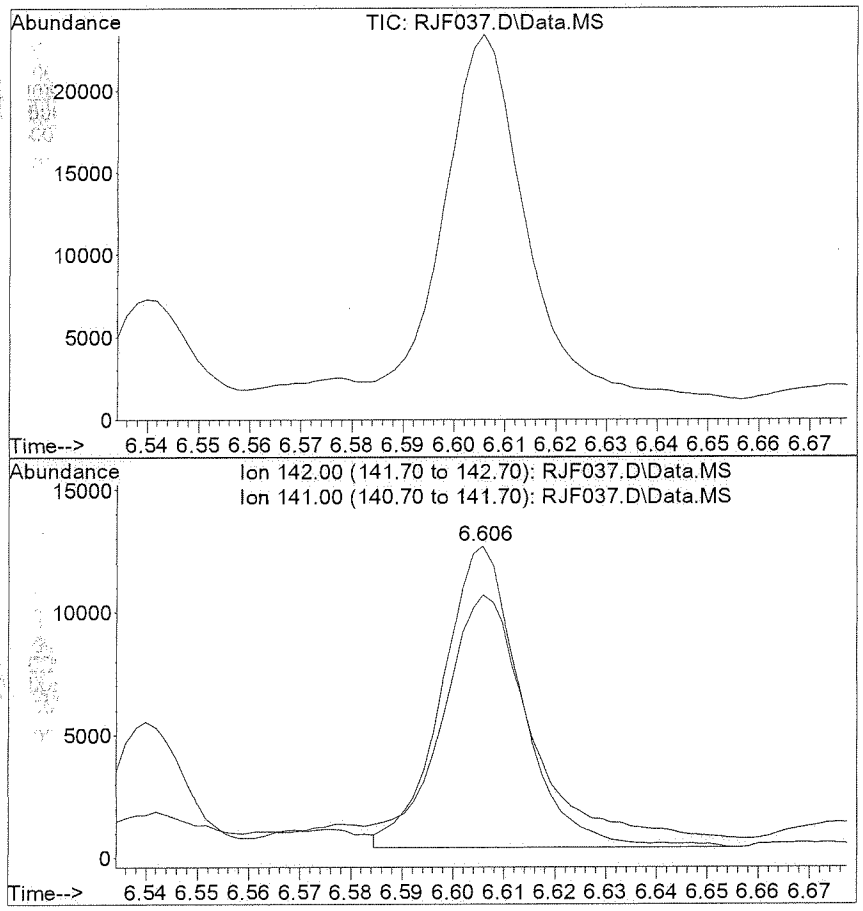





#2
Naphthalene
Concen: 17.52 ppb
RT: 5.764 min Scan# 1219
Delta R.T. 0.023 min
Lab File: RJF037.D
Acq: 28 Oct 2014 12:03

Tgt Ion:128 Resp: 57942

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 129 | 10.3 | 0.0 | 41.2 |




#3
2-Methylnaphthalene
Concen: 6.02 ppb
RT: 6.606 min Scan# 1597
Delta R.T. 0.029 min
Lab File: RJF037.D
Acq: 28 Oct 2014 12:03

Tgt Ion:142 Resp: 13361

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 87.0 | 53.9 | 113.9 |

# QC SUMMARIES

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 10/23/14 |
| Batch No. | : 14J130 | Date Extracted: | 10/23/14 10:00 |
| Sample ID: | MBLK1W | Date Analyzed: | 10/28/14 10:13 |
| Lab Samp ID: | SVJ034WB | Dilution Factor: | 1 |
| Lab File ID: | RJF033 | Matrix : | WATER |
| Ext Btch ID: | SVJ034W | % Moisture : | NA |
| Calib. Ref.: | REF014 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.020 | 0.0050 | 0.010 |
| ACENAPHTHYLENE | ND | 0.020 | 0.0050 | 0.010 |
| ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(B)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(K)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(G,H,I)PERYLENE | ND | 0.020 | 0.0050 | 0.010 |
| CHRYSENE | ND | 0.020 | 0.0050 | 0.010 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORENE | ND | 0.020 | 0.0050 | 0.010 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| NAPHTHALENE | ND | 0.10 | 0.025 | 0.050 |
| PHENANTHRENE | ND | 0.020 | 0.0050 | 0.010 |
| PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| 2-METHYLNAPHTHALENE | ND | 0.020 | 0.0050 | 0.010 |
| 1-METHYLNAPHTHALENE | ND | 0.020 | 0.0050 | 0.010 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.395 | 0.5000 | 78.9 | 50-135 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J130
METHOD: SW3520C/8270C SIM

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | SVJ034WB | SVJ034WL | SVJ034WC | | |
| LAB FILE ID: | RJF033 | RJF034 | RJF035 | | |
| DATE EXTRACTED: | 10/23/1410:00 | 10/23/1410:00 | 10/23/1410:00 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 10/28/1410:13 | 10/28/1410:41 | 10/28/1411:08 | DATE RECEIVED: | 10/23/14 |
| PREP. BATCH: | SVJ034W | SVJ034W | SVJ034W | | |
| CALIB. REF: | REF014 | REF014 | REF014 | | |

ACCESSION:

| PARAMETER | BLNK RSLT (ug/L) | SPIKE AMT (ug/L) | BS RSLT (ug/L) | BS % REC | SPIKE AMT (ug/L) | BSD RSLT (ug/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | 0.500 | 0.462 | 92 | 0.500 | 0.445 | 89 | 4 | 45-110 | 30 |
| Acenaphthylene | ND | 0.500 | 0.455 | 91 | 0.500 | 0.437 | 87 | 4 | 50-105 | 30 |
| Anthracene | ND | 0.500 | 0.380 | 76 | 0.500 | 0.368 | 74 | 3 | 55-110 | 30 |
| Benzo(a)anthracene | ND | 0.500 | 0.490 | 98 | 0.500 | 0.492 | 98 | 0 | 55-110 | 30 |
| Benzo(a)pyrene | ND | 0.500 | 0.390 | 78 | 0.500 | 0.397 | 79 | 2 | 55-110 | 30 |
| Benzo(b)fluoranthene | ND | 0.500 | 0.465 | 93 | 0.500 | 0.466 | 93 | 0 | 45-120 | 30 |
| Benzo(k)fluoranthene | ND | 0.500 | 0.483 | 97 | 0.500 | 0.482 | 96 | 0 | 45-125 | 30 |
| Benzo(g,h,i)perylene | ND | 0.500 | 0.489 | 98 | 0.500 | 0.493 | 99 | 1 | 40-125 | 30 |
| Chrysene | ND | 0.500 | 0.461 | 92 | 0.500 | 0.468 | 94 | 1 | 55-110 | 30 |
| Dibenzo(a,h)anthracene | ND | 0.500 | 0.470 | 94 | 0.500 | 0.478 | 96 | 2 | 40-125 | 30 |
| Fluoranthene | ND | 0.500 | 0.420 | 84 | 0.500 | 0.409 | 82 | 3 | 55-115 | 30 |
| Fluorene | ND | 0.500 | 0.423 | 85 | 0.500 | 0.408 | 82 | 4 | 50-110 | 30 |
| Indeno(1,2,3-cd)pyrene | ND | 0.500 | 0.471 | 94 | 0.500 | 0.472 | 94 | 0 | 45-125 | 30 |
| Naphthalene | ND | 0.500 | 0.397 | 79 | 0.500 | 0.384 | 77 | 3 | 40-100 | 30 |
| Phenanthrene | ND | 0.500 | 0.414 | 83 | 0.500 | 0.404 | 81 | 3 | 50-115 | 30 |
| Pyrene | ND | 0.500 | 0.406 | 81 | 0.500 | 0.396 | 79 | 3 | 50-130 | 30 |
| 2-Methylnaphthalene | ND | 0.500 | 0.455 | 91 | 0.500 | 0.446 | 89 | 2 | 45-105 | 30 |
| 1-Methylnaphthalene | ND | 0.500 | 0.481 | 96 | 0.500 | 0.458 | 92 | 5 | 30-160 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (ug/L) | BS RSLT (ug/L) | BS % REC | SPIKE AMT (ug/L) | BSD RSLT (ug/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Terphenyl-d14 | 0.500 | 0.551 | 110 | 0.500 | 0.538 | 108 | 50-135 |

# QC DATA

Quantitation Report (QT Reviewed)

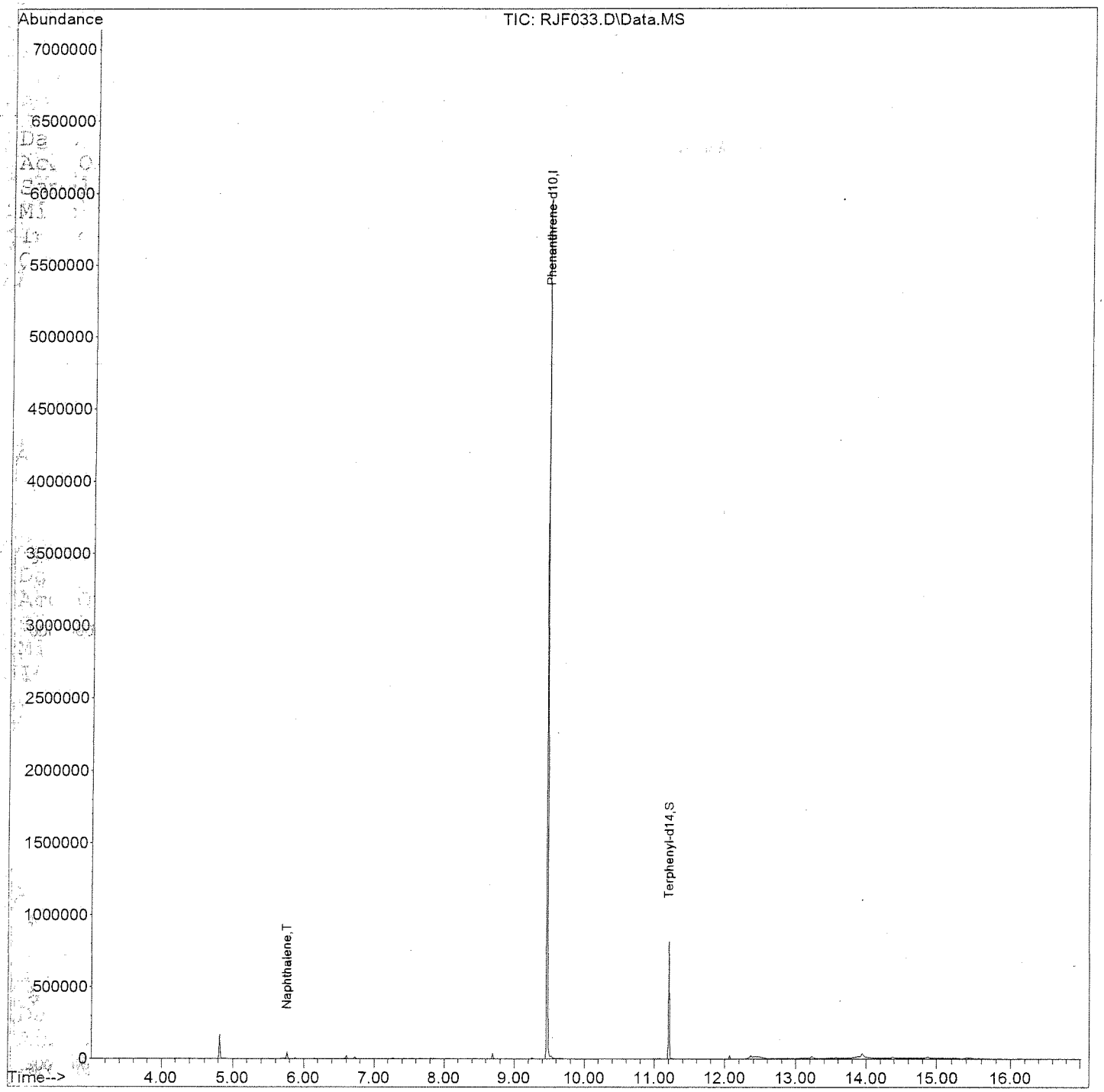
Data File : C:\msdchem\1\DATA\14J28\RJF033.D
Vial: 12
Acq On : 28 Oct 2014 10:13
Operator: KVu
Sample : SVJ034WB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:04:43 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

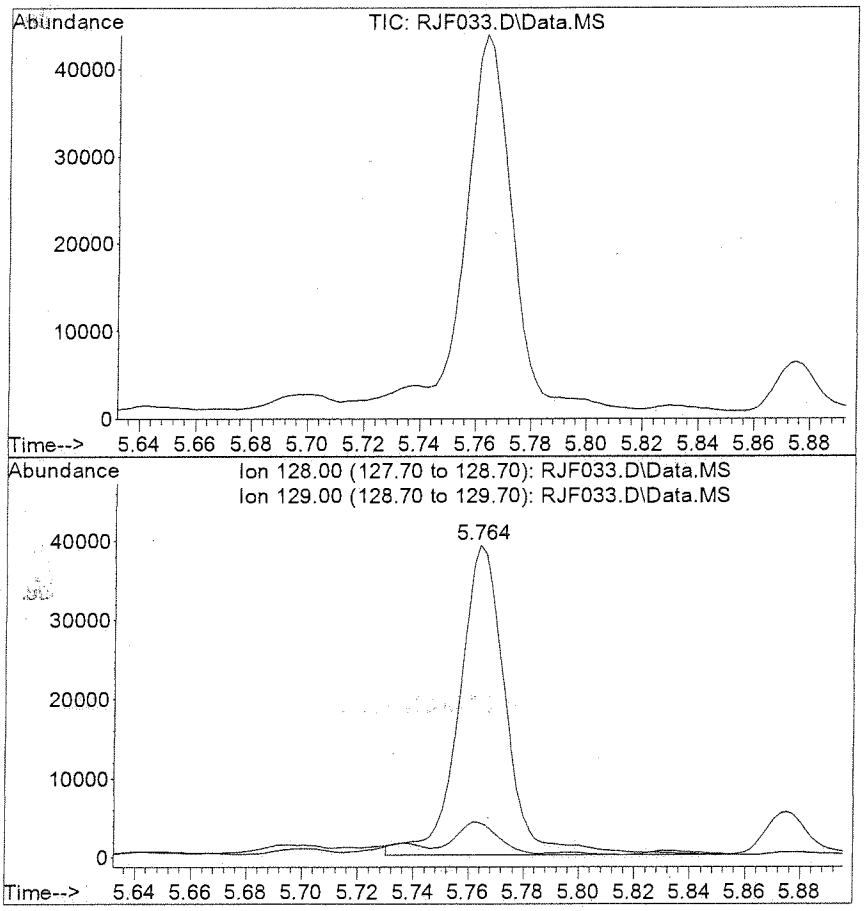
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 4529029 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.204 | 244 | 660903 | 394.57 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 78.91% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 46402 | 14.97 ppb < DL | 94 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF033.D Vial: 12
Acq On : 28 Oct 2014 10:13 Operator: KVu
Sample : SVJ034WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:04:43 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M






#2
Naphthalene
Concen: 14.97 ppb
RT: 5.764 min Scan# 1219
Delta R.T. 0.023 min
Lab File: RJF033.D
Acq: 28 Oct 2014 10:13

Tgt Ion:128 Resp: 46402

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 129 | 9.0 | 0.0 | 41.2 |

Quantitation Report (QT Reviewed)

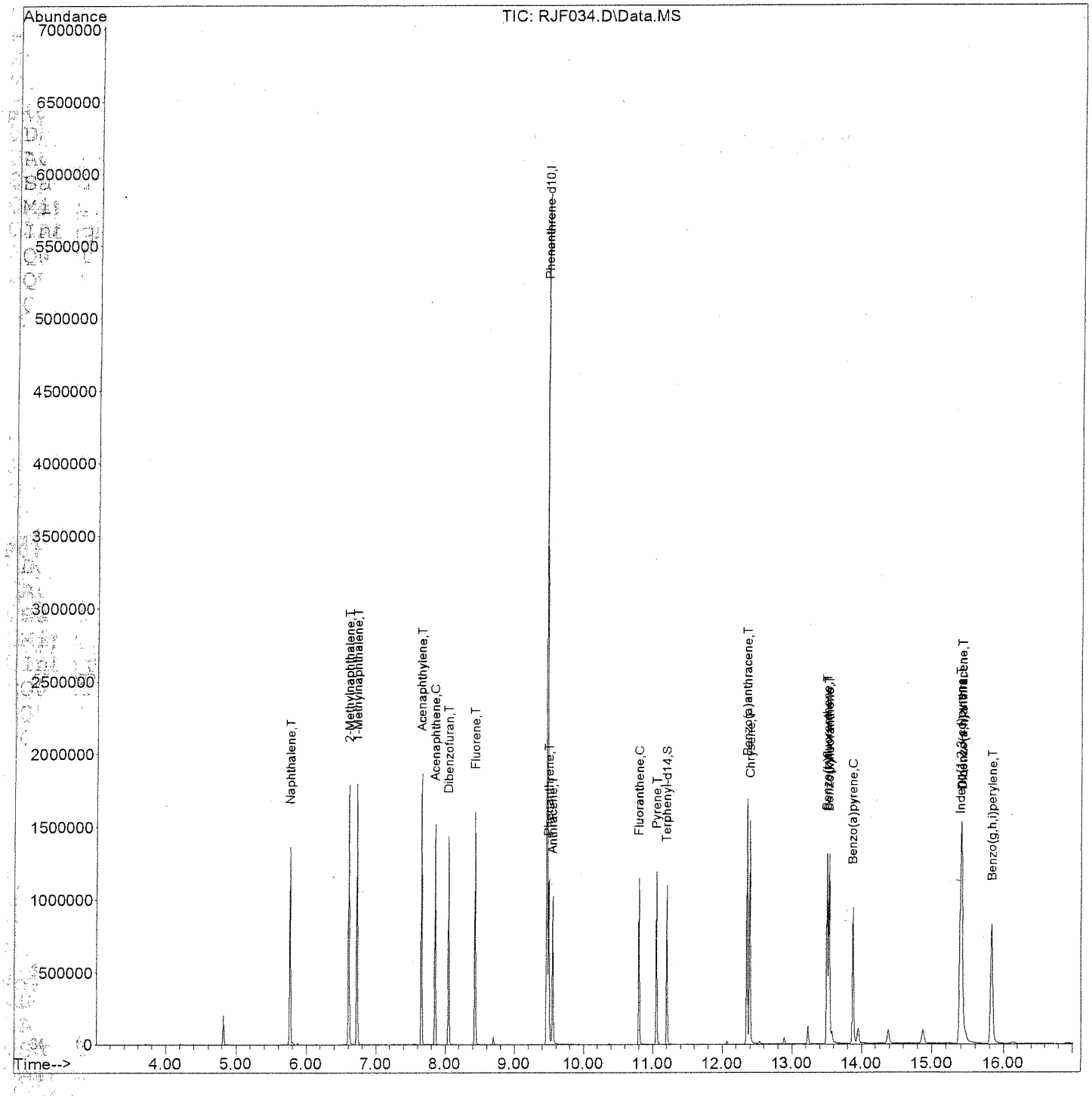
Data File : C:\msdchem\1\DATA\14J28\RJF034.D
Vial: 13
Acq On : 28 Oct 2014 10:41
Operator: KVu
Sample : SVJ034WL
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 13:01:41 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.468 | 188 | 4565409 | 2000.00 | ppb | 0.02 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.204 | 244 | 929625 | 550.57 | ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = | 110.11% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1239734 | 396.82 | ppb | 100 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 953792 | 455.22 | ppb | 98 |
| 4) 1-Methylnaphthalene | 6.724 | 142 | 925848 | 481.17 | ppb | 99 |
| 5) Acenaphthylene | 7.657 | 152 | 1266238 | 454.96 | ppb | 100 |
| 6) Acenaphthene | 7.853 | 153 | 836576 | 462.15 | ppb | 100 |
| 7) Dibenzofuran | 8.046 | 168 | 978378 | 422.77 | ppb | 99 |
| 8) Fluorene | 8.430 | 166 | 782257 | 423.39 | ppb | 99 |
| 9) Phenanthrene | 9.495 | 178 | 981080 | 414.43 | ppb | 100 |
| 10) Anthracene | 9.551 | 178 | 904803 | 380.45 | ppb | 99 |
| 11) Fluoranthene | 10.802 | 202 | 923369 | 420.16 | ppb | 84 |
| 12) Pyrene | 11.054 | 202 | 965466 | 406.19 | ppb | 84 |
| 14) Benzo(a)anthracene | 12.356 | 228 | 1584401 | 490.39 | ppb | 76 |
| 15) Chrysene | 12.395 | 228 | 1445766 | 461.05 | ppb | 82 |
| 16) Benzo(b)fluoranthene | 13.502 | 252 | 1439754 | 465.38 | ppb | 85 |
| 17) Benzo(k)fluoranthene | 13.534 | 252 | 1493502 | 483.37 | ppb | 85 |
| 18) Benzo(a)pyrene | 13.877 | 252 | 1144792 | 389.56 | ppb | 85 |
| 19) Indeno(1,2,3-cd)pyrene | 15.392 | 276 | 1684931 | 471.07 | ppb | 84 |
| 20) Dibenzo(a,h)anthracene | 15.409 | 278 | 1388276 | 470.28 | ppb | 95 |
| 21) Benzo(g,h,i)perylene | 15.829 | 276 | 1449682 | 489.16 | ppb | 84 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF034.D
Vial: 13
Acq On : 28 Oct 2014 10:41
Operator: KVu
Sample : SVJ034WL
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 13:01:41 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

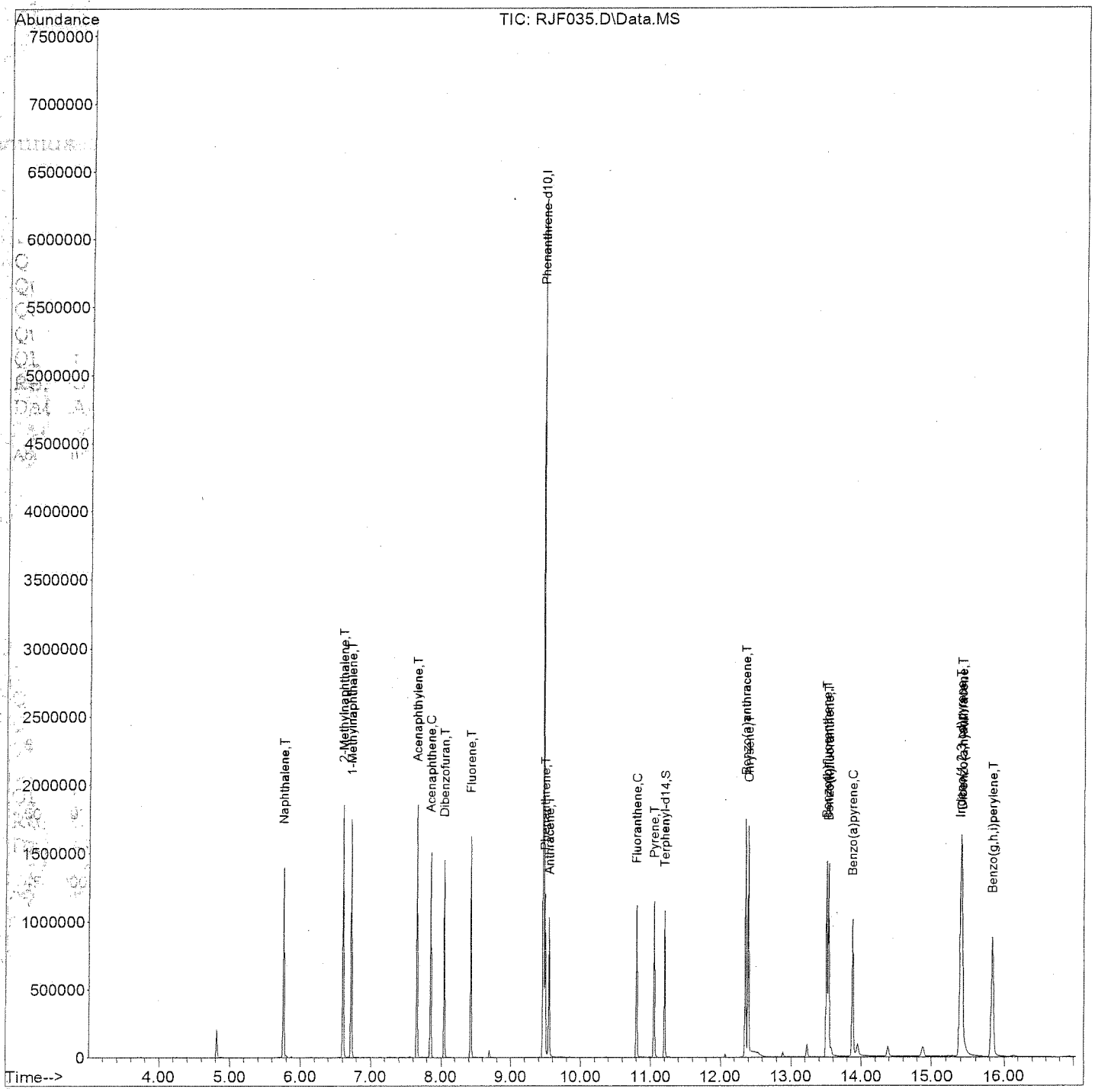
Data File : C:\msdchem\1\DATA\14J28\RJF035.D
Vial: 14
Acq On : 28 Oct 2014 11:08
Operator: KVu
Sample : SVJ034WC
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 13:01:44 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 4726800 | 2000.00 | ppb | 0.02 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.204 | 244 | 940398 | 537.94 | ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = | 107.59% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1242136 | 384.01 | ppb | 99 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 967422 | 445.96 | ppb | 99 |
| 4) 1-Methylnaphthalene | 6.724 | 142 | 912671 | 458.13 | ppb | 99 |
| 5) Acenaphthylene | 7.657 | 152 | 1260386 | 437.40 | ppb | 99 |
| 6) Acenaphthene | 7.851 | 153 | 833893 | 444.94 | ppb | 99 |
| 7) Dibenzofuran | 8.046 | 168 | 972632 | 405.94 | ppb | 98 |
| 8) Fluorene | 8.428 | 166 | 780462 | 408.00 | ppb | 99 |
| 9) Phenanthrene | 9.493 | 178 | 990533 | 404.14 | ppb | 99 |
| 10) Anthracene | 9.551 | 178 | 905642 | 367.81 | ppb | 100 |
| 11) Fluoranthene | 10.799 | 202 | 931175 | 409.25 | ppb | 84 |
| 12) Pyrene | 11.051 | 202 | 973808 | 395.71 | ppb | 84 |
| 14) Benzo(a)anthracene | 12.354 | 228 | 1647162 | 492.44 | ppb | 79 |
| 15) Chrysene | 12.395 | 228 | 1519075 | 467.89 | ppb | 83 |
| 16) Benzo(b)fluoranthene | 13.504 | 252 | 1492343 | 465.91 | ppb | 85 |
| 17) Benzo(k)fluoranthene | 13.534 | 252 | 1542693 | 482.25 | ppb | 85 |
| 18) Benzo(a)pyrene | 13.877 | 252 | 1207691 | 396.94 | ppb | 88 |
| 19) Indeno(1,2,3-cd)pyrene | 15.392 | 276 | 1748657 | 472.20 | ppb | 83 |
| 20) Dibenzo(a,h)anthracene | 15.406 | 278 | 1460567 | 477.88 | ppb | 91 |
| 21) Benzo(g,h,i)perylene | 15.829 | 276 | 1511924 | 492.75 | ppb | 85 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF035.D
Vial: 14
Acq On : 28 Oct 2014 11:08
Operator: KVu
Sample : SVJ034WC
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 13:01:44 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF012
Instrument ID: TOF0

Project: RED HILL PHASE 1B
SDG No.: 14J130
DFTPP Injection Date: 05/08/14
DFTPP Injection Time: 11:44

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 44.44 |
| 68 | Less than 2% of mass 69 | 0.14( 0.8)1 |
| 69 | Relative abundance of mass 198 | 17.73 |
| 70 | Less than 2.0% of mass 69 | 0.02( 0.1)1 |
| 127 | 40.0 - 60.0% of mass 198 | 44.87 |
| 197 | Less than 1.0% of mass 198 | 0.67 |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 199 | 5.0 - 9.0% of mass 198 | 6.24 |
| 275 | 10.0 - 30.0% of mass 198 | 22.93 |
| 365 | Greater than 1.00% of mass 198 | 1.66 |
| 441 | Present, but less than mass 443 | 13.99( 81.1)3 |
| 442 | Greater than 40.0% of mass 198 | 92.91 |
| 443 | 17.0 - 23.0% of mass 442 | 17.25( 18.6)2 |

1-Value is % mass 69 2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 1 | SSTD1000 | SVF0E081 | REF013 | 05/08/14 | 12:10 |
| 2 | SSTD500 | SVF0E082 | REF014 | 05/08/14 | 12:31 |
| 3 | SSTD100 | SVF0E083 | REF015 | 05/08/14 | 12:54 |
| 4 | SSTD080 | SVF0E084 | REF016 | 05/08/14 | 13:17 |
| 5 | SSTD040 | SVF0E085 | REF017 | 05/08/14 | 13:40 |
| 6 | SSTD020 | SVF0E086 | REF018 | 05/08/14 | 14:03 |
| 7 | SSTD500 | ISVF0E081 | REF019 | 05/08/14 | 14:26 |

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF014
Instrument ID: TOF0

Project:ICAL
SDG No.:ICAL
Date Analyzed: 05/08/14
Time Analyzed: 12:31

| | | IS4(PHN) AREA # | RT # | IS5(CRY) AREA # | RT # | IS6(PRY) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 5005097 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| | UPPER LIMIT | 10010194 | 9.94 | 0 | 0.50 | 0 | 0.50 |
| | LOWER LIMIT | 2502549 | 8.94 | 0 | -0.50 | 0 | -0.50 |
| | SAMPLE ID | | | | | | |
| 1 | SVF0E081 | 5187965 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 2 | SVF0E083 | 5327101 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 3 | SVF0E084 | 7937548 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 4 | SVF0E085 | 5477844 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 5 | SVF0E086 | 4821286 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 6 | ISVF0E081 | 6284290 | 9.44 | 0 | 0.00 | 0 | 0.00 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.



FORM VIII SV-2 OLM02.0

RW 7-11-14

3025

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :FO
Beginning DateTime :05/08/14 12:10
IC File :REF015~~4~~ DJ 10/30/14

Column Spec :ZB-SEMI ID:0.25MM
Ending DateTime :05/08/14 14:03
HPChem Method :SVFOE08

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

| IDX | Parameters | ON_COL UG/L | WATER UG/L | SOIL UG/KG | R_FILE |
|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | IntSTD | IntSTD | IntSTD | IntSTD |
| 2 | Naphthalene | 20 | .02 | .6667 | REF018 |
| 3 | 2-Methylnaphthalene | 20 | .02 | .6667 | REF018 |
| 4 | 1-Methylnaphthalene | 20 | .02 | .6667 | REF018 |
| 5 | Acenaphthylene | 20 | .02 | .6667 | REF018 |
| 6 | Acenaphthene | 20 | .02 | .6667 | REF018 |
| 7 | Dibenzofuran | 20 | .02 | .6667 | REF018 |
| 8 | Fluorene | 20 | .02 | .6667 | REF018 |
| 9 | Phenanthrene | 20 | .02 | .6667 | REF018 |
| 10 | Anthracene | 20 | .02 | .6667 | REF018 |
| 11 | Fluoranthene | 20 | .02 | .6667 | REF018 |
| 12 | Pyrene | 20 | .02 | .6667 | REF018 |
| 13 | Terphenyl-d14 | 20 | .02 | .6667 | REF018 |
| 14 | Benzo(a)anthracene | 20 | .02 | .6667 | REF018 |
| 15 | Chrysene | 20 | .02 | .6667 | REF018 |
| 16 | Benzo(b)fluoranthene | 20 | .02 | .6667 | REF018 |
| 17 | Benzo(k)fluoranthene | 20 | .02 | .6667 | REF018 |
| 18 | Benzo(a)pyrene | 20 | .02 | .6667 | REF018 |
| 19 | Indeno(1,2,3-cd)pyrene | 20 | .02 | .6667 | REF018 |
| 20 | Dibenzo(a,h)anthracene | 20 | .02 | .6667 | REF018 |
| 21 | Benzo(g,h,i)perylene | 20 | .02 | .6667 | REF018 |

AU 7-11-14

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :FO
Beginning DateTime :05/08/14 12:10
Spike Units :PP8
IC File :REF0154 DJ 10/30/14

Column Spec :ZB-SEMI ID:0.25MM
Ending DateTime :05/08/14 14:03
HPChem Method :SVFOE08

| IDX | Parameters | 20<br>14:03<br>REF018 | 40<br>13:40<br>REF017 | 80<br>13:17<br>REF016 | 100<br>12:54<br>REF015 | 500<br>12:31<br>REF014 | 1000<br>12:10<br>REF013 | Av_RRF | %_RSD | Av_Rt_M |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9.4429 |
| 2 | Naphthalene | 1.584 | 1.389 | 1.265 | 1.344 | 1.392 | 1.238 | 1.369 | 8.99 | 5.7405 |
| 3 | 2-Methylnaphthalene | 1.049 | 0.917 | 0.855 | 0.919 | 0.934 | 0.833 | 0.918 | 8.25 | 6.5772 |
| 4 | 1-Methylnaphthalene | 0.978 | 0.846 | 0.789 | 0.836 | 0.849 | 0.759 | 0.843 | 8.93 | 6.6945 |
| 5 | Acenaphthylene | 1.353 | 1.215 | 1.133 | 1.232 | 1.245 | 1.139 | 1.219 | 6.61 | 7.6248 |
| 6 | Acenaphthene | 0.908 | 0.800 | 0.739 | 0.802 | 0.787 | 0.723 | 0.793 | 8.22 | 7.8215 |
| 7 | Dibenzofuran | 1.143 | 1.026 | 0.947 | 1.015 | 1.018 | 0.934 | 1.014 | 7.34 | 8.0151 |
| 8 | Fluorene | 0.905 | 0.823 | 0.759 | 0.820 | 0.805 | 0.744 | 0.809 | 7.05 | 8.4032 |
| 9 | Phenanthrene | 1.167 | 1.073 | 0.982 | 1.046 | 1.026 | 0.928 | 1.037 | 7.86 | 9.4701 |
| 10 | Anthracene | 1.165 | 1.048 | 0.987 | 1.044 | 1.047 | 0.960 | 1.042 | 6.78 | 9.5262 |
| 11 | Fluoranthene | 1.107 | 0.997 | 0.907 | 0.952 | 0.957 | 0.857 | 0.963 | 8.86 | 10.7756 |
| 12 | Pyrene | 1.199 | 1.055 | 0.985 | 1.029 | 1.031 | 0.949 | 1.041 | 8.26 | 11.0270 |
| 13 | Terphenyl-d14 | 0.872 | 0.761 | 0.690 | 0.714 | 0.734 | 0.667 | 0.740 | 9.81 | 11.1795 |
| 14 | Benzo(a)anthracene | 2.042 | 1.655 | 1.458 | 1.489 | 1.522 | 1.358 | 1.587 | 15.30 | 12.3298 |
| 15 | Chrysene | 1.582 | 1.404 | 1.292 | 1.326 | 1.388 | 1.250 | 1.374 | 8.55 | 12.3690 |
| 16 | Benzo(b)fluoranthene | 1.516 | 1.347 | 1.270 | 1.310 | 1.410 | 1.278 | 1.355 | 6.94 | 13.4730 |
| 17 | Benzo(k)fluoranthene | 1.505 | 1.292 | 1.253 | 1.348 | 1.449 | 1.275 | 1.354 | 7.55 | 13.5020 |
| 18 | Benzo(a)pyrene | 1.418 | 1.249 | 1.173 | 1.251 | 1.378 | 1.255 | 1.287 | 7.12 | 13.8406 |
| 19 | Indeno(1,2,3-cd)pyrene | 1.722 | 1.553 | 1.448 | 1.510 | 1.657 | 1.512 | 1.567 | 6.56 | 15.3334 |
| 20 | Dibenzo(a,h)anthracene | 1.458 | 1.286 | 1.193 | 1.247 | 1.347 | 1.229 | 1.293 | 7.44 | 15.3500 |
| 21 | Benzo(g,h,i)perylene | 1.390 | 1.273 | 1.236 | 1.265 | 1.389 | 1.237 | 1.298 | 5.54 | 15.7617 |

Ave_%RSD : 8.1 Max_%RSD : 15.3

Use Least Square Linear Regression with weighting factor of inverse concentration
Resp_Ratio = xo + x1 * Amt_Ratio

| IDX | Parameter | x0 | x1 | CCF |
|---|---|---|---|---|
| 14 | Benzo(a)anthracene | 0.00585 | 1.39154 | 0.9984 |

RC
7-11-14

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :05/08/14 12:10
Spike Units :PPB
IC File :REF01~~3~~4 DJ 10/30/14

Column Spec :ZB-SEMI ID:0.25MM
Ending DateTime :05/08/14 14:03
HPChem Method :SVF0E08

| IDX | Parameters | 20<br>14:03<br>REF018 | 40<br>13:40<br>REF017 | 80<br>13:17<br>REF016 | 100<br>12:54<br>REF015 | 500<br>12:31<br>REF014 | 1000<br>12:10<br>REF013 | AvDRec | %_RSD | Av_Rt_M |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9.4429 |
| 2 | Naphthalene | 116 | 101 | 92 | 98 | 102 | 90 | 6.3 | 8.99 | 5.7405 |
| 3 | 2-Methylnaphthalene | 114 | 100 | 93 | 100 | 102 | 91 | 5.4 | 8.25 | 6.5772 |
| 4 | 1-Methylnaphthalene | 116 | 100 | 94 | 99 | 101 | 90 | 5.7 | 8.93 | 6.6945 |
| 5 | Acenaphthylene | 111 | 100 | 93 | 101 | 102 | 93 | 4.7 | 6.61 | 7.6248 |
| 6 | Acenaphthene | 115 | 101 | 93 | 101 | 99 | 91 | 5.5 | 8.22 | 7.8215 |
| 7 | Dibenzofuran | 113 | 101 | 93 | 100 | 100 | 92 | 4.8 | 7.34 | 8.0151 |
| 8 | Fluorene | 112 | 102 | 94 | 101 | 100 | 92 | 4.9 | 7.05 | 8.4032 |
| 9 | Phenanthrene | 113 | 103 | 95 | 101 | 99 | 89 | 5.6 | 7.86 | 9.4701 |
| 10 | Anthracene | 112 | 101 | 95 | 100 | 100 | 92 | 4.4 | 6.78 | 9.5262 |
| 11 | Fluoranthene | 115 | 104 | 94 | 99 | 99 | 89 | 6.2 | 8.86 | 10.7756 |
| 12 | Pyrene | 115 | 101 | 95 | 99 | 99 | 91 | 5.5 | 8.26 | 11.0270 |
| 13 | Terphenyl-d14 | 118 | 103 | 93 | 96 | 99 | 90 | 6.9 | 9.81 | 11.1795 |
| 14 | Benzo(a)anthracene | 105 | 98 | 94 | 99 | 108 | 97 | 4.2 | 5.1 | 12.3298 |
| 15 | Chrysene | 115 | 102 | 94 | 97 | 101 | 91 | 6.1 | 8.55 | 12.3690 |
| 16 | Benzo(b)fluoranthene | 112 | 99 | 94 | 97 | 104 | 94 | 5.3 | 6.94 | 13.4730 |
| 17 | Benzo(k)fluoranthene | 111 | 95 | 93 | 100 | 107 | 94 | 6.1 | 7.55 | 13.5020 |
| 18 | Benzo(a)pyrene | 110 | 97 | 91 | 97 | 107 | 98 | 5.7 | 7.12 | 13.8406 |
| 19 | Indeno(1,2,3-cd)pyrene | 110 | 99 | 92 | 96 | 106 | 96 | 5.2 | 6.56 | 15.3334 |
| 20 | Dibenzo(a,h)anthracene | 113 | 99 | 92 | 96 | 104 | 95 | 5.6 | 7.44 | 15.3500 |
| 21 | Benzo(g,h,i)perylene | 107 | 98 | 95 | 97 | 107 | 95 | 4.7 | 5.54 | 15.7617 |

JM 7-11-14

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0E08.M
Title : SEMIVOLATILES - SIM
Last Update : Thu May 08 14:37:46 2014
Response Via : Initial Calibration

Total Cpnds : 21

| PK# | | Compound Name | QIon | Exp_RT | Rel_RT | Cal | #Qual | A/H | ID |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 188 | 9.444 | 1.000 | A | 1 | A | B |
| 2 | T | Naphthalene | 128 | 5.741 | 0.608 | A | 1 | A | B |
| 3 | T | 2-Methylnaphthalene | 142 | 6.577 | 0.696 | A | 1 | A | B |
| 4 | T | 1-Methylnaphthalene | 142 | 6.695 | 0.709 | A | 1 | A | B |
| 5 | T | Acenaphthylene | 152 | 7.626 | 0.807 | A | 1 | A | B |
| 6 | C | Acenaphthene | 153 | 7.821 | 0.828 | A | 1 | A | B |
| 7 | T | Dibenzofuran | 168 | 8.015 | 0.849 | A | 1 | A | B |
| 8 | T | Fluorene | 166 | 8.403 | 0.890 | A | 1 | A | B |
| 9 | T | Phenanthrene | 178 | 9.471 | 1.003 | A | 1 | A | B |
| 10 | T | Anthracene | 178 | 9.527 | 1.009 | A | 1 | A | B |
| 11 | C | Fluoranthene | 202 | 10.777 | 1.141 | A | 1 | A | B |
| 12 | T | Pyrene | 202 | 11.029 | 1.168 | A | 1 | A | B |
| 13 | S | Terphenyl-d14 | 244 | 11.181 | 1.184 | A | 1 | A | B |
| 14 | T | Benzo(a)anthracene | 228 | 12.331 | 1.306 | L | 1 | A | B |
| 15 | T | Chrysene | 228 | 12.370 | 1.310 | A | 1 | A | B |
| 16 | T | Benzo(b)fluoranthene | 252 | 13.475 | 1.427 | A | 1 | A | B |
| 17 | T | Benzo(k)fluoranthene | 252 | 13.504 | 1.430 | A | 1 | A | B |
| 18 | C | Benzo(a)pyrene | 252 | 13.842 | 1.466 | A | 1 | A | B |
| 19 | T | Indeno(1,2,3-cd)pyrene | 276 | 15.336 | 1.624 | A | 1 | A | B |
| 20 | T | Dibenzo(a,h)anthracene | 278 | 15.353 | 1.626 | A | 1 | A | B |
| 21 | T | Benzo(g,h,i)perylene | 276 | 15.763 | 1.669 | A | 1 | A | B |

Cal = A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID = R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

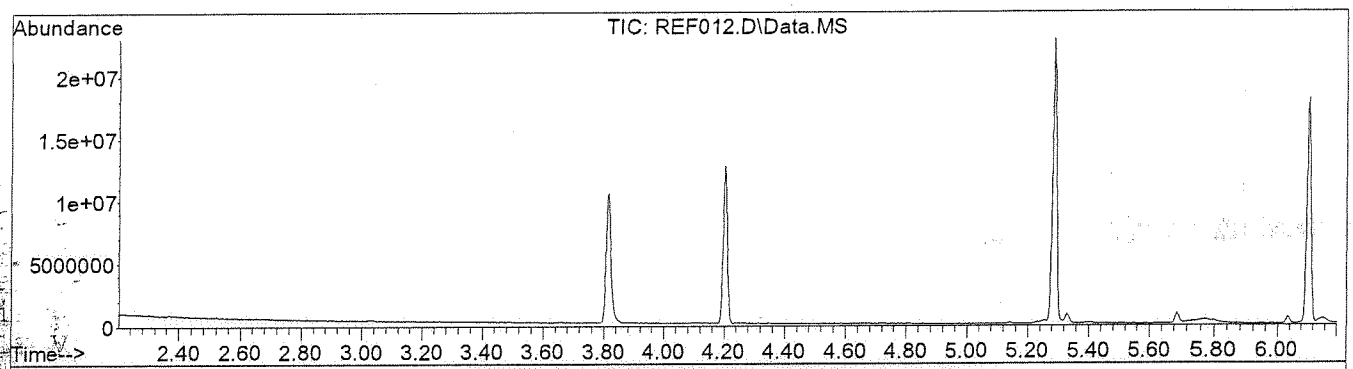
SVF0E08.M Thu May 08 14:38:06 2014 F0

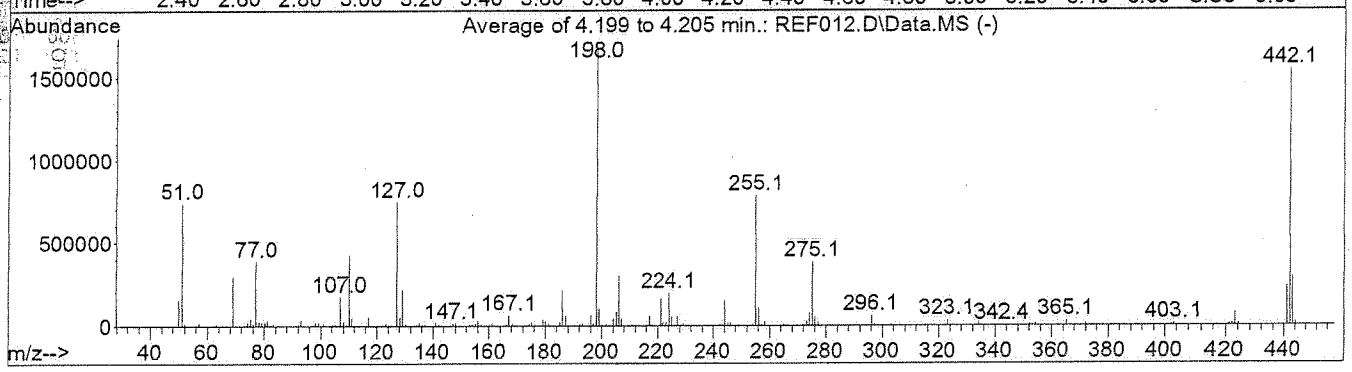
dw 7-11-14

Data Path : C:\msdchem\1\DATA\14E08\
Data File : REF012.D
Acq On : 08 May 2014 11:44
Operator : KV
Sample : DFTF0F0801
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Fri May 09 13:48:37 2014




AutoFind: Scans 725, 726, 727; Background Corrected with Scan 716

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 30 | 60 | 44.4 | 737448 | PASS |
| 68 | 69 | 0.00 | 2 | 0.8 | 2241 | PASS |
| 69 | 198 | 0.00 | 100 | 17.7 | 294208 | PASS |
| 70 | 69 | 0.00 | 2 | 0.1 | 361 | PASS |
| 127 | 198 | 40 | 60 | 44.9 | 744448 | PASS |
| 197 | 198 | 0.00 | 1 | 0.7 | 11039 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1659221 | PASS |
| 199 | 198 | 5 | 9 | 6.2 | 103579 | PASS |
| 275 | 198 | 10 | 30 | 22.9 | 380501 | PASS |
| 365 | 198 | 1 | 100 | 1.7 | 27571 | PASS |
| 441 | 443 | 0.01 | 100 | 81.1 | 232107 | PASS |
| 442 | 198 | 40 | 100 | 92.9 | 1541632 | PASS |
| 443 | 442 | 17 | 23 | 18.6 | 286251 | PASS |

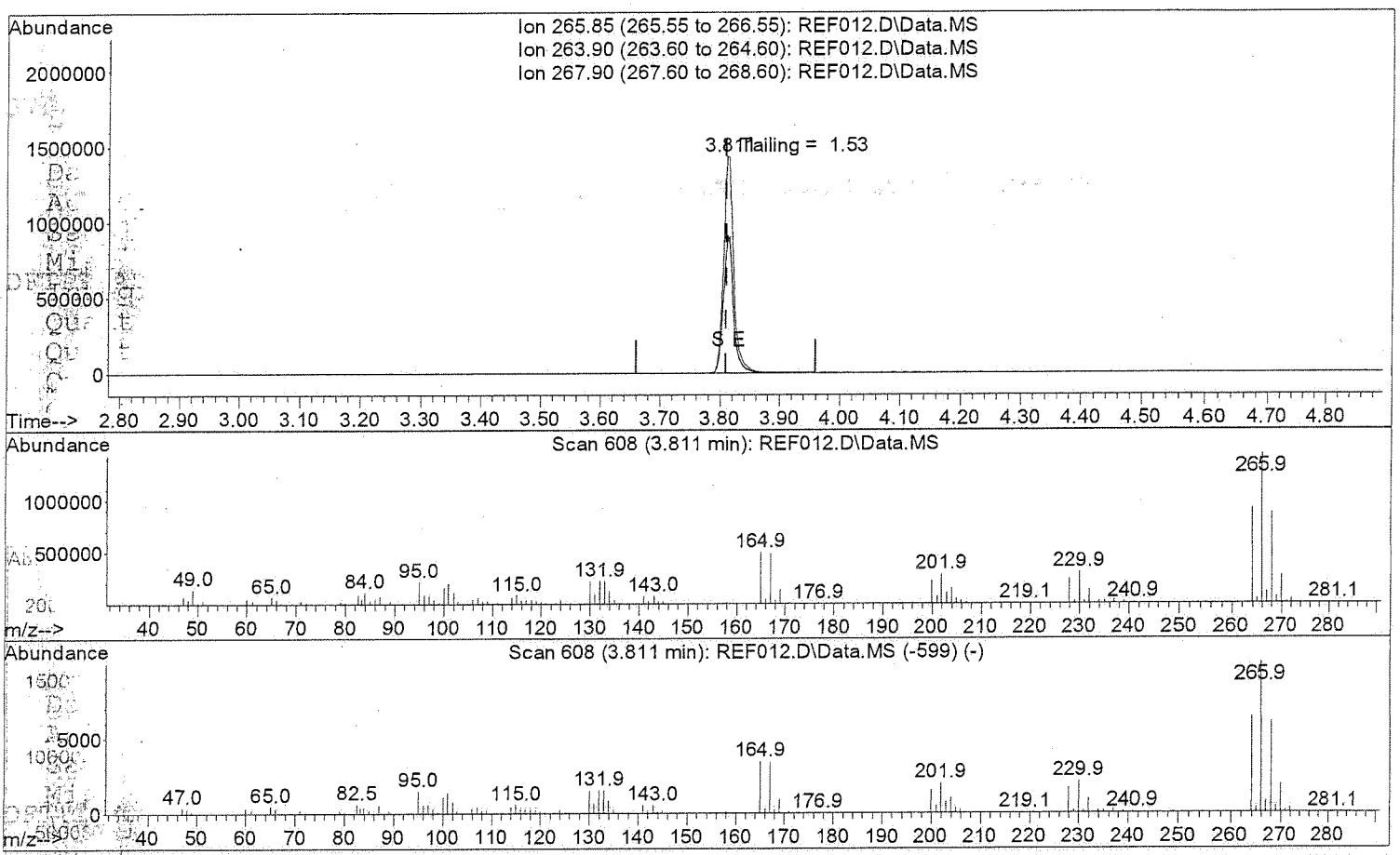
RE 7-11-14


3030

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(1) Pentachlorophenol (T)

3.811min (+0.000) 50.00 ppm

response 1690635

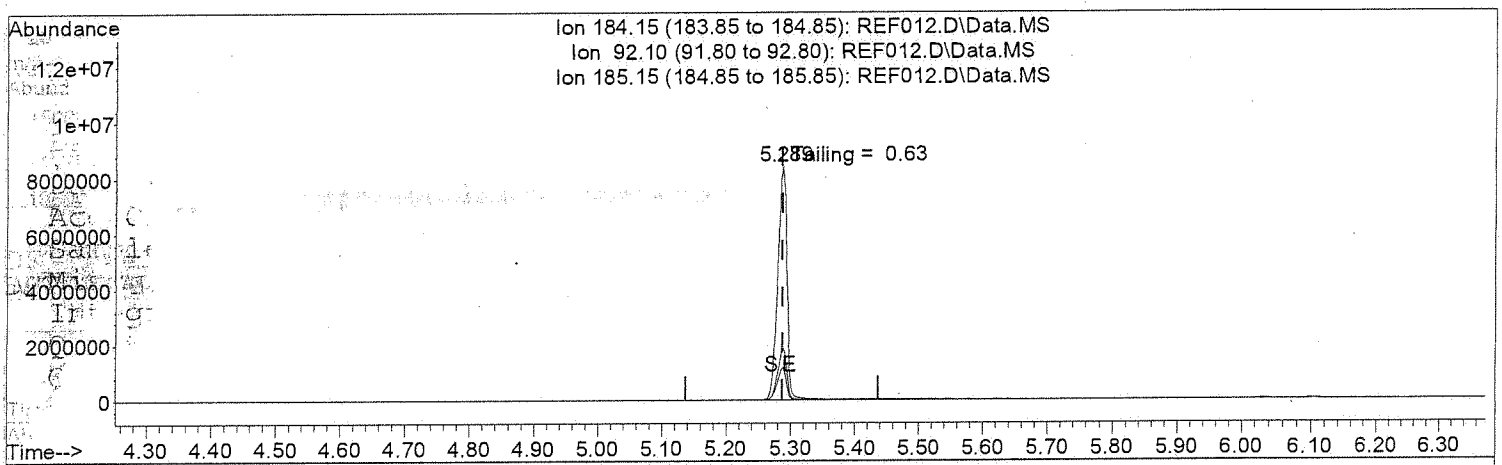
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 61.80 |
| 267.90 | 62.70 | 62.72 |
| 0.00 | 0.00 | 0.00 |

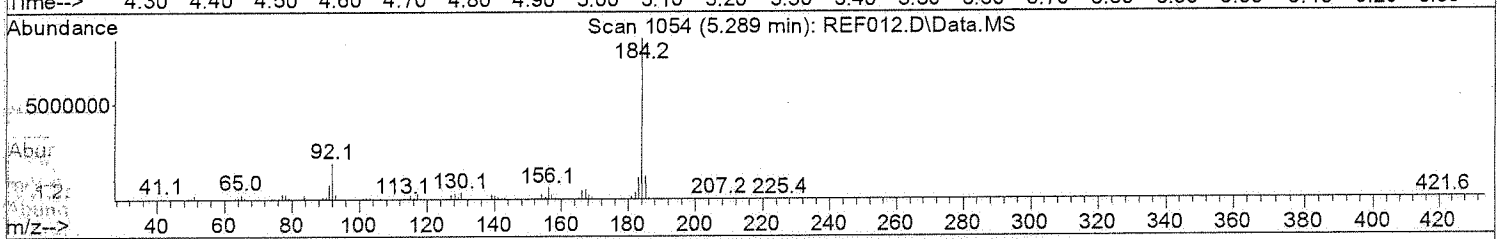
7-11-14

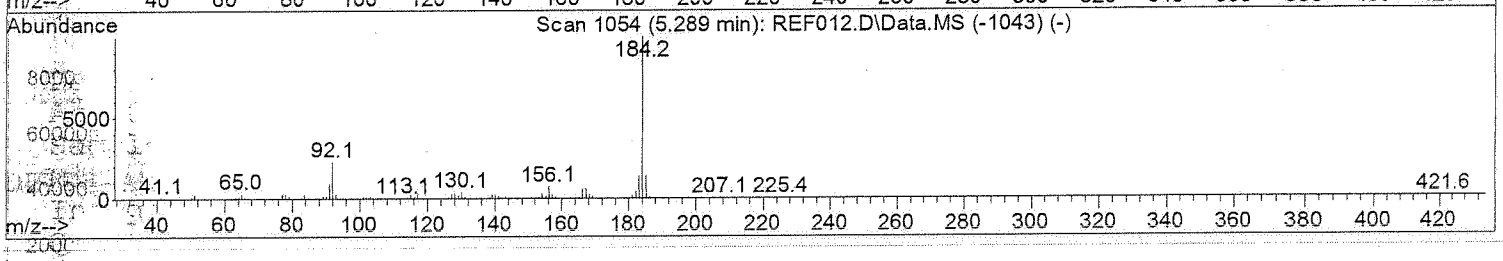
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(3) Benzidine (T)

5.289min (0.000) 50.00 ppm

response 8591117

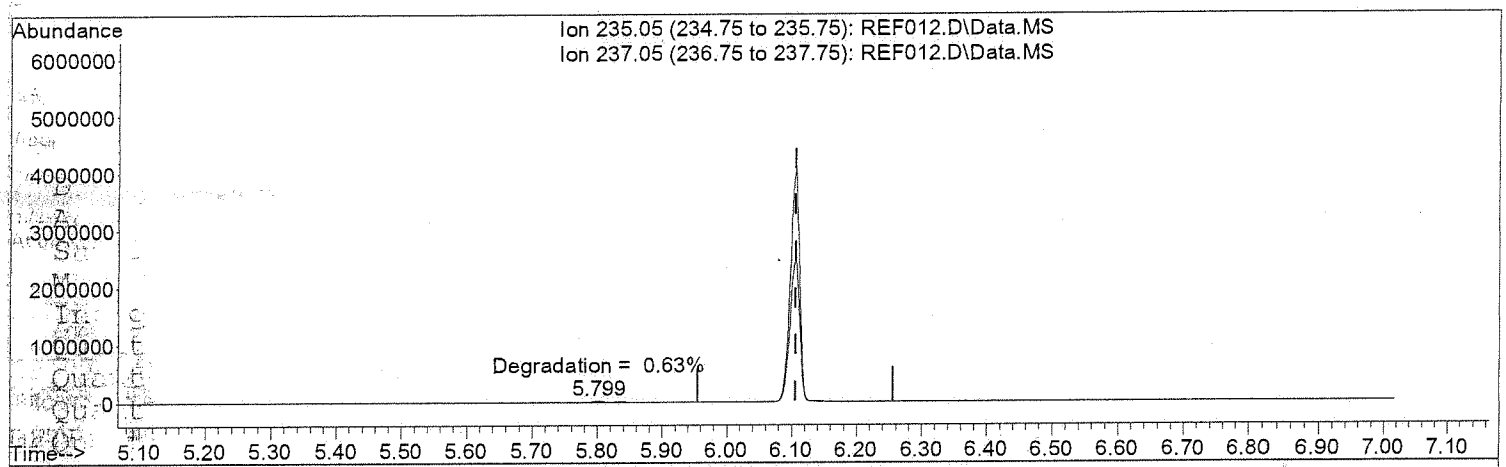
| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.65 |
| 185.15 | 13.30 | 13.29 |
| 0.00 | 0.00 | 0.00 |

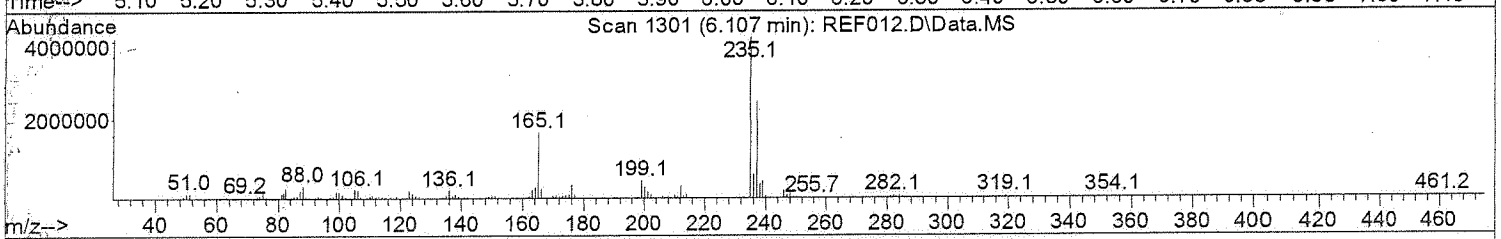
7-11-14

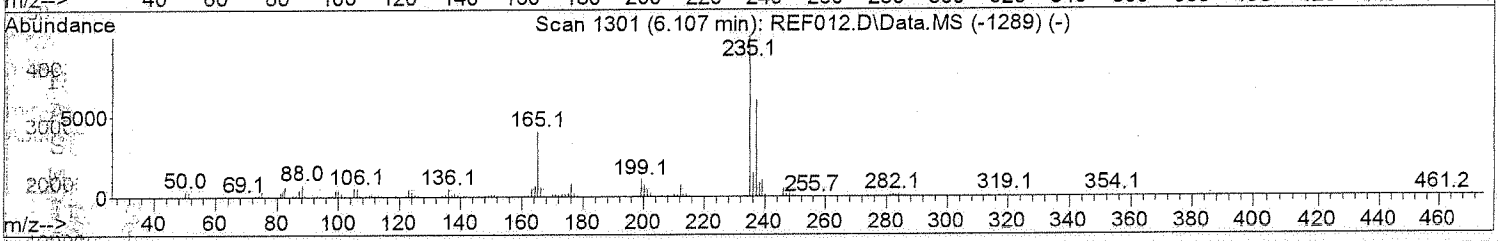
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(6) DDT (T)

6.107min (0.000) 50.00 ppm

response 4079265

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.24 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

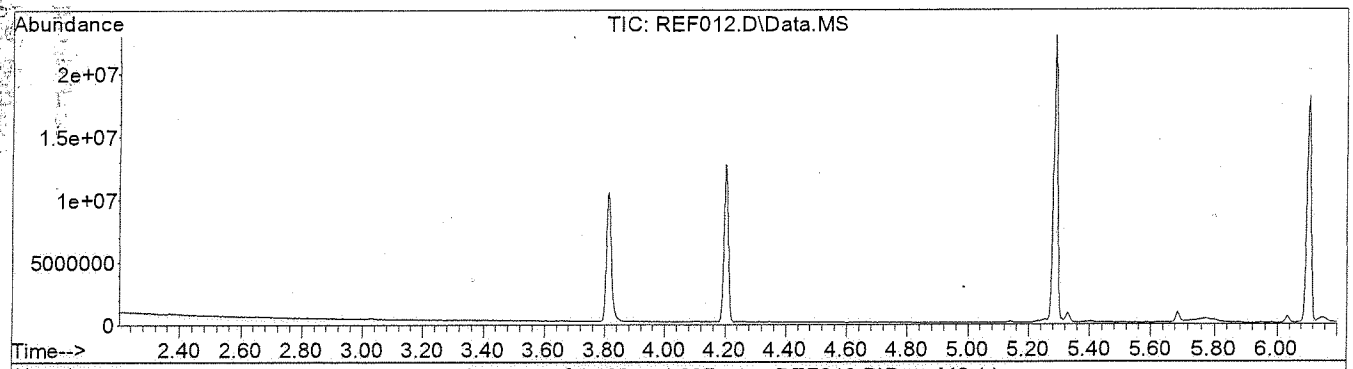
7-11-14

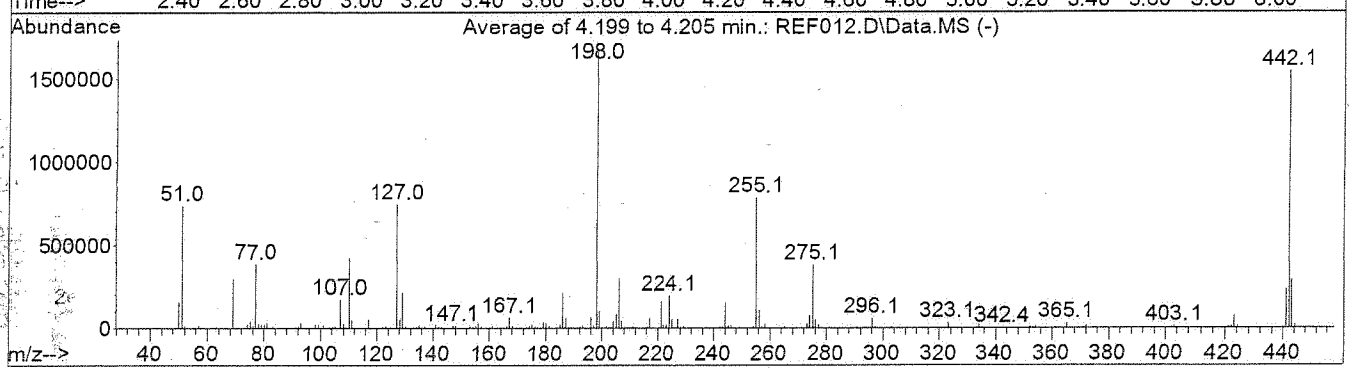
DFTPP

Data Path : C:\msdchem\1\DATA\14E08\
Data File : REF012.D
Acq On : 08 May 2014 11:44
Operator : KV
Sample : DFTF0F0801
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : DFTPP-8270D
Last Update : Fri May 09 13:50:01 2014




AutoFind: Scans 725, 726, 727; Background Corrected with Scan 716

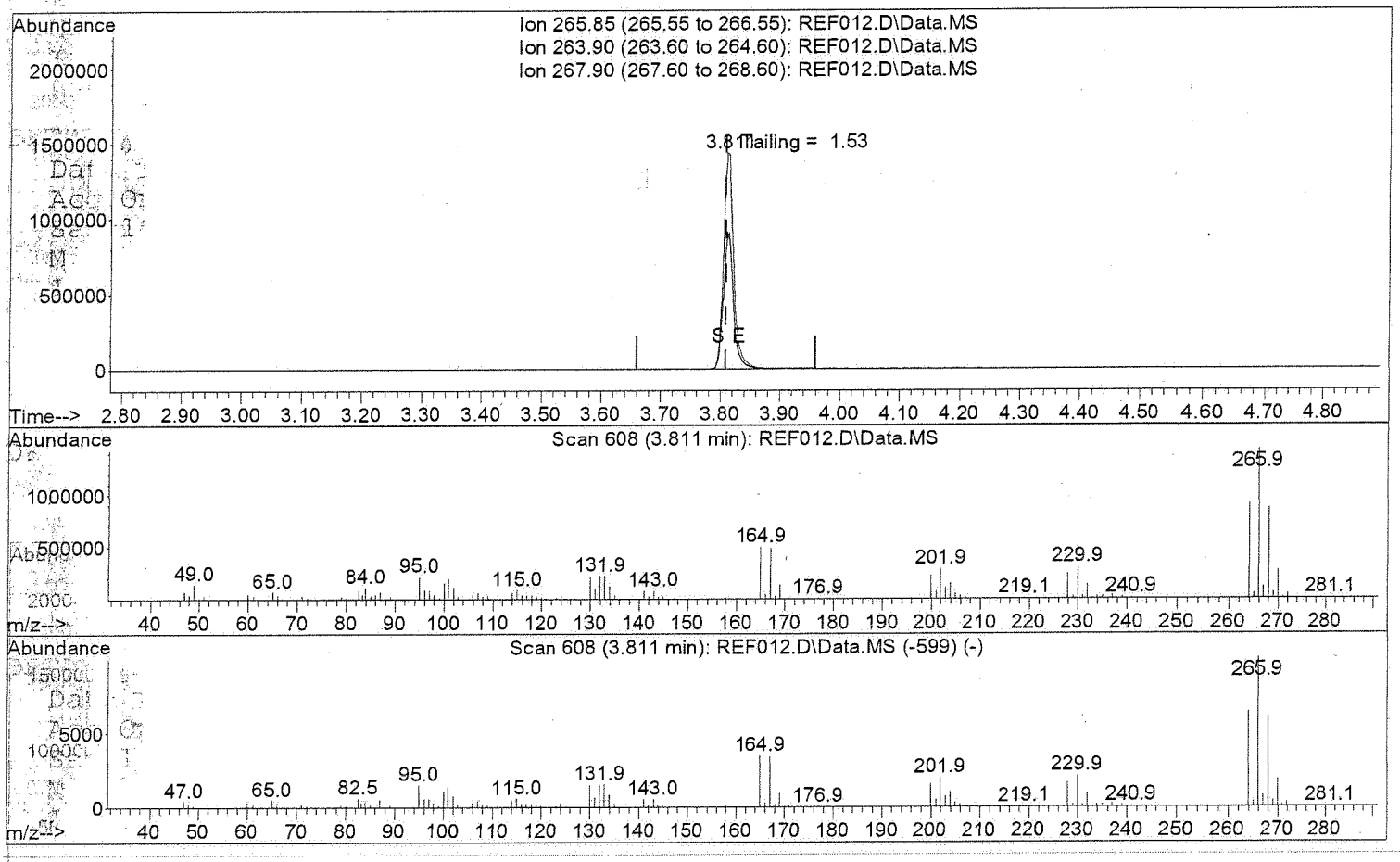
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 10 | 80 | 44.4 | 737448 | PASS |
| 68 | 69 | 0.00 | 2 | 0.8 | 2241 | PASS |
| 69 | 198 | 0.00 | 100 | 17.7 | 294208 | PASS |
| 70 | 69 | 0.00 | 2 | 0.1 | 361 | PASS |
| 127 | 198 | 10 | 80 | 44.9 | 744448 | PASS |
| 197 | 198 | 0.00 | 2 | 0.7 | 11039 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1659221 | PASS |
| 199 | 198 | 5 | 9 | 6.2 | 103579 | PASS |
| 275 | 198 | 10 | 60 | 22.9 | 380501 | PASS |
| 365 | 198 | 1 | 100 | 1.7 | 27571 | PASS |
| 441 | 442 | 0.01 | 24 | 15.1 | 232107 | PASS |
| 442 | 198 | 50 | 100 | 92.9 | 1541632 | PASS |
| 443 | 442 | 15 | 24 | 18.6 | 286251 | PASS |

pw 7-11-14

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(1) Pentachlorophenol (T)

3.811min (+0.000) 50.00 ppm

response 1690635

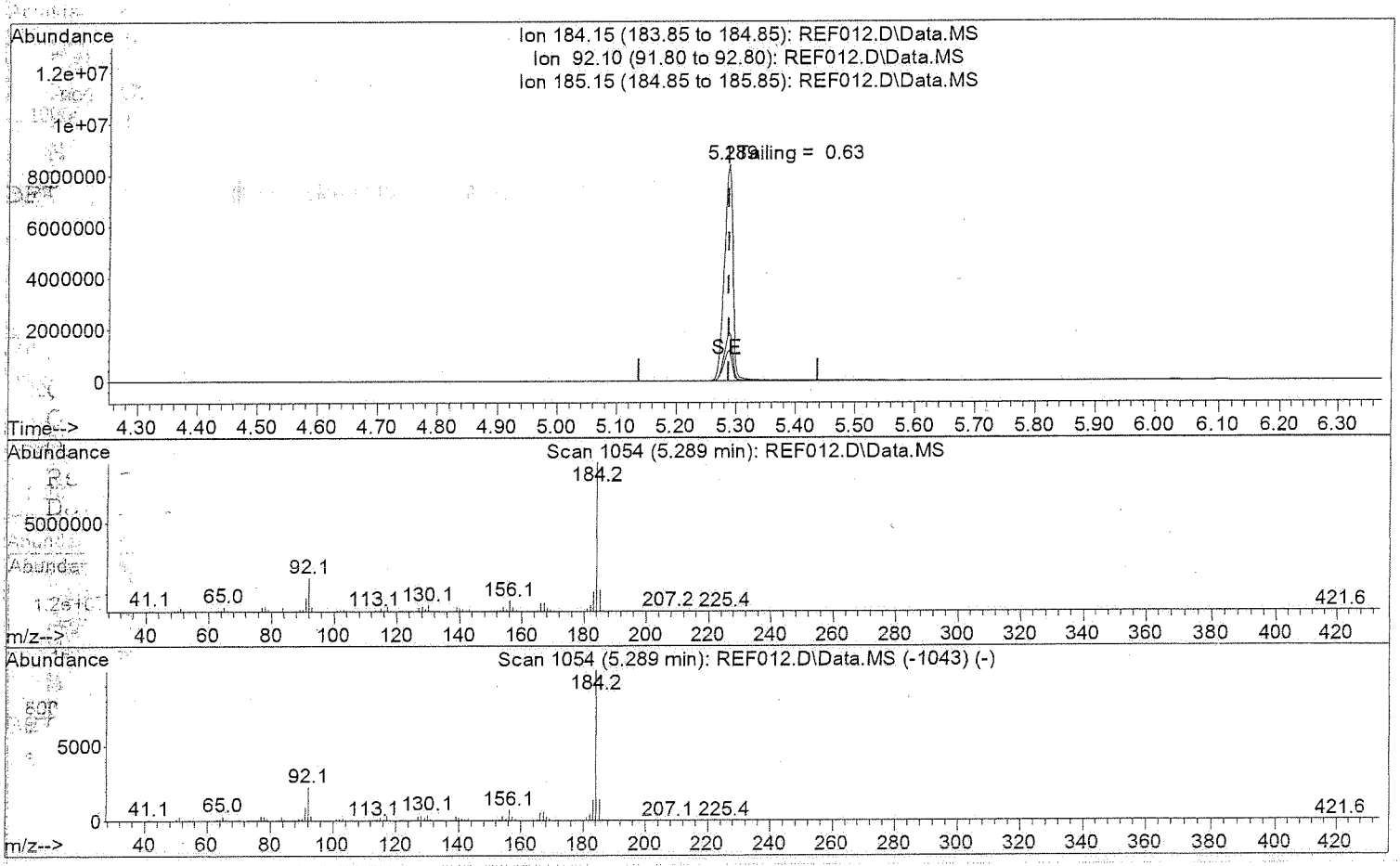
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 61.80 |
| 267.90 | 62.70 | 62.72# |
| 0.00 | 0.00 | 0.00 |

7-11-14

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(3) Benzidine (T)

5.289min (0.000) 50.00 ppm

response 8591117

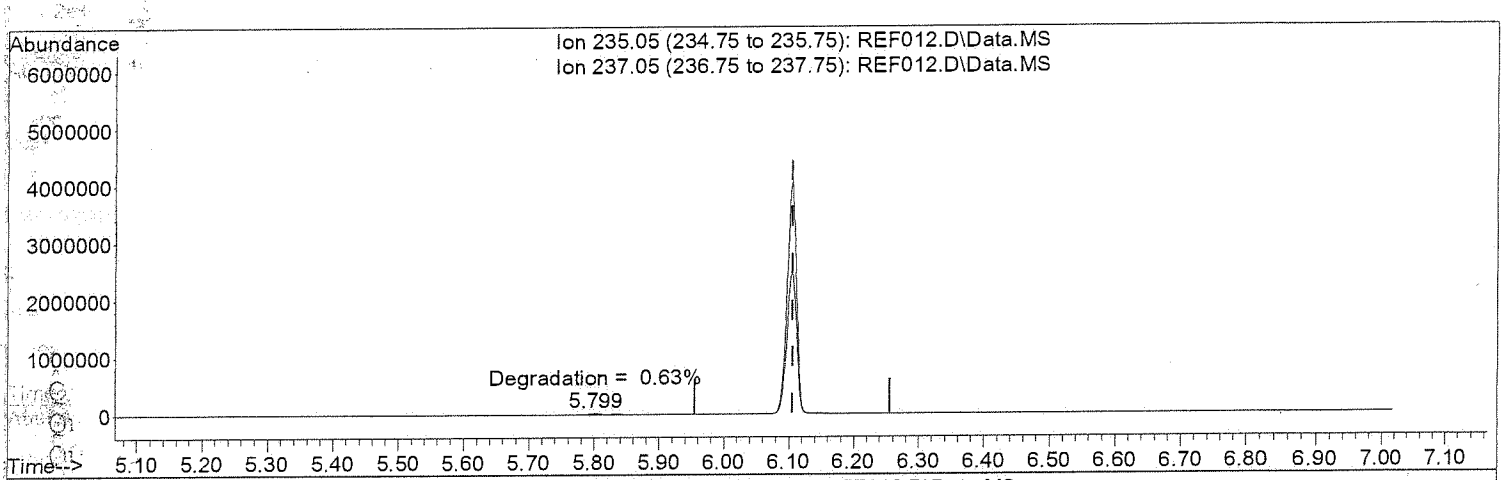
| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.65 |
| 185.15 | 13.30 | 13.29# |
| 0.00 | 0.00 | 0.00 |

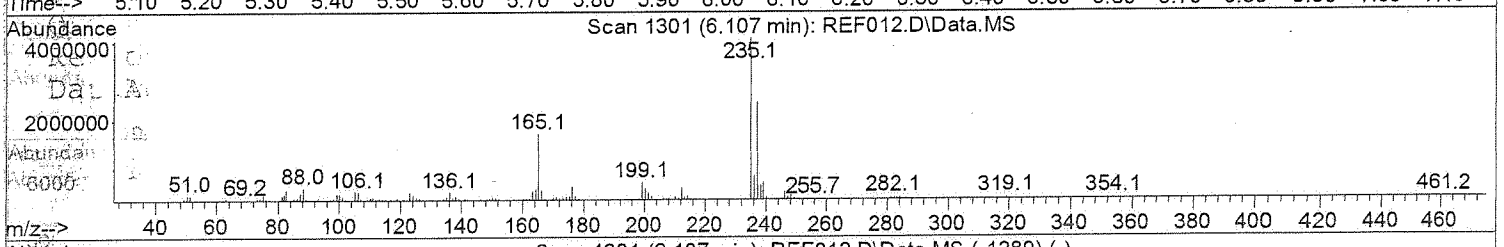
RC 7-11-14

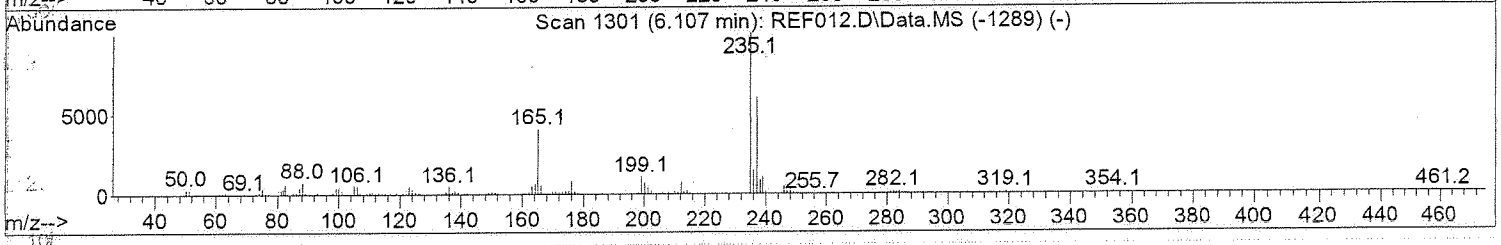
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(6) DDT (T)
6.107min (0.000) 50.00 ppm
response 4079265

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.24 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

PK 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF018.D
Vial: 8
Acq On : 08 May 2014 14:03
Operator: KV
Sample : SVF0E086 20PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:40:04 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

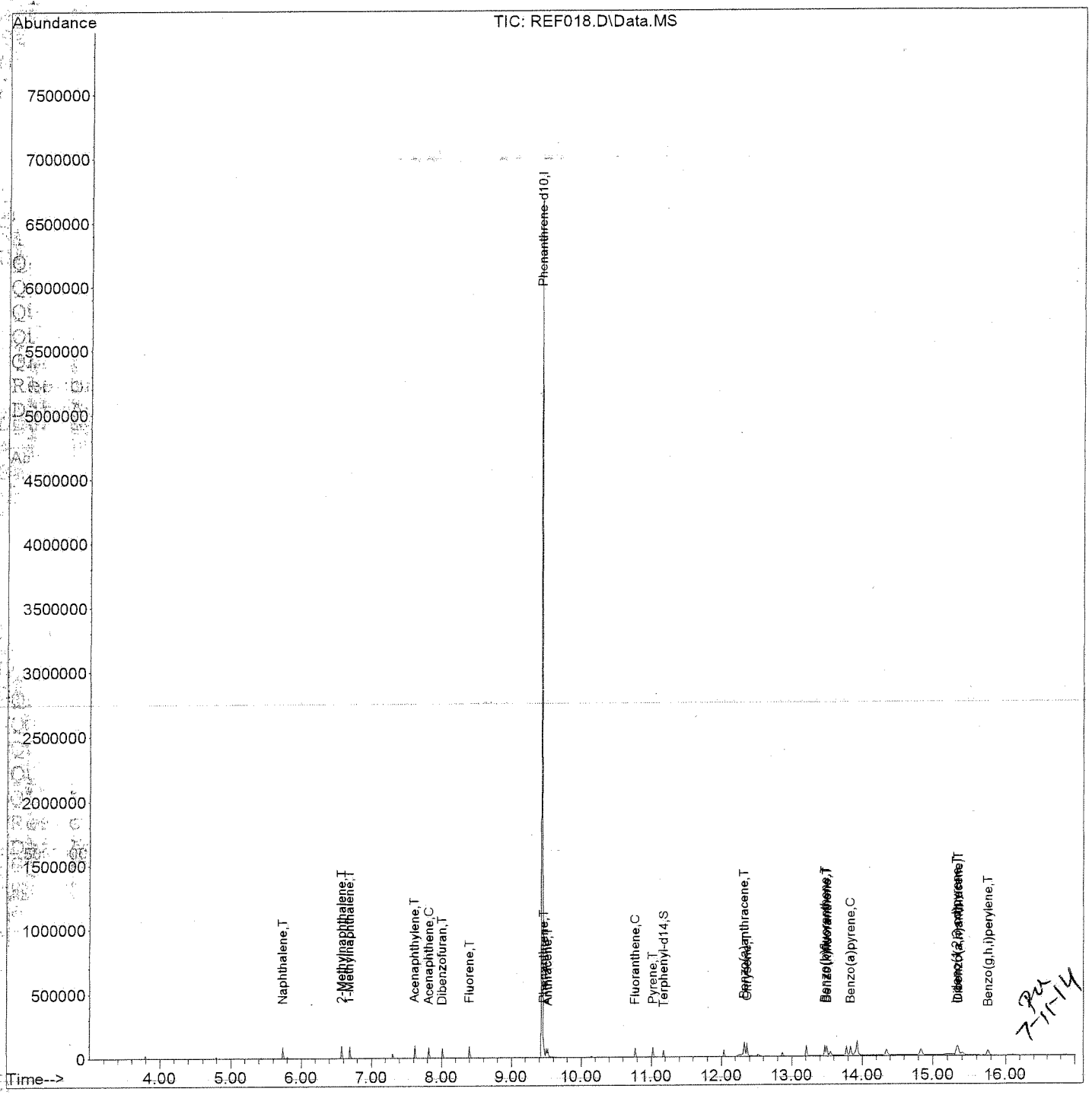
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 4821286 | 2000.00 | ppb | 0.00 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 42038 | 23.58 | ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = | 4.72% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 76370 | 23.15 | ppb | 99 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 50590 | 22.86 | ppb | 98 |
| 4) 1-Methylnaphthalene | 6.693 | 142 | 47155 | 23.21 | ppb | 98 |
| 5) Acenaphthylene | 7.623 | 152 | 65214 | 22.19 | ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 43775 | 22.90 | ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 55096 | 22.54 | ppb | 98 |
| 8) Fluorene | 8.403 | 166 | 43644 | 22.37 | ppb | 99 |
| 9) Phenanthrene | 9.469 | 178 | 56274 | 22.51 | ppb | 99 |
| 10) Anthracene | 9.524 | 178 | 56170 | 22.37 | ppb | 98 |
| 11) Fluoranthene | 10.774 | 202 | 53368 | 23.00 | ppb | 98 |
| 12) Pyrene | 11.026 | 202 | 57800 | 23.03 | ppb | 96 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 98467 | 20.95 | ppb | 96 |
| 15) Chrysene | 12.368 | 228 | 76292 | 23.04 | ppb | 50 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 73104 | 22.38 | ppb | 95 |
| 17) Benzo(k)fluoranthene | 13.500 | 252 | 72569 | 22.24 | ppb | 98 |
| 18) Benzo(a)pyrene | 13.838 | 252 | 68348 | 22.02 | ppb | 92 |
| 19) Indeno(1,2,3-cd)pyrene | 15.331 | 276 | 83032 | 21.98 | ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.348 | 278 | 70272 | 22.54 | ppb | 92 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 67001 | 21.41 | ppb | 97 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF018.D
Vial: 8
Acq On : 08 May 2014 14:03
Operator: KV
Sample : SVF0E086 20PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:40:04 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF017.D
Vial: 7
Acq On : 08 May 2014 13:40
Operator: KV
Sample : SVF0E085 40PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:47 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

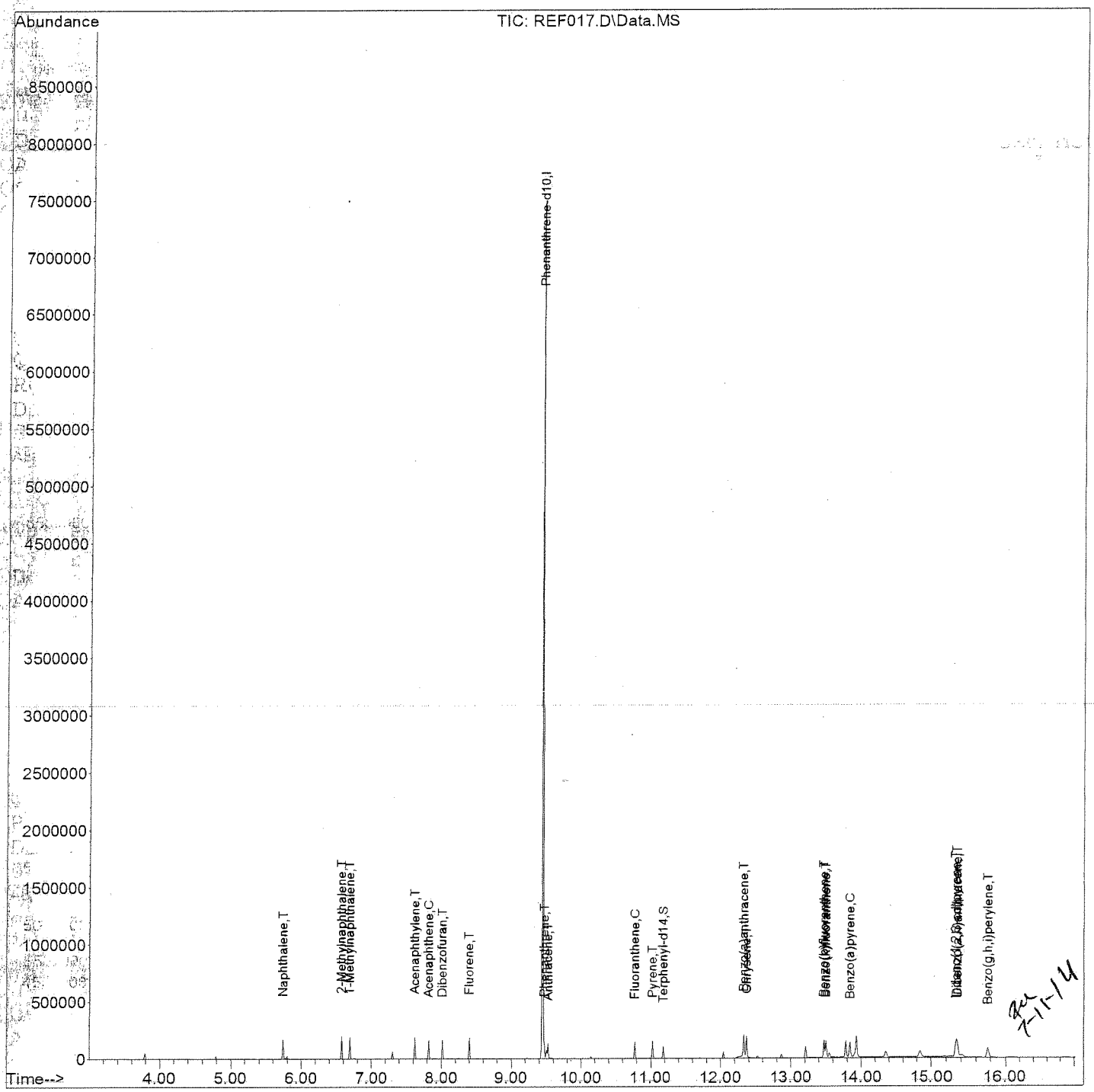
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.443 | 188 | 5477844 | 2000.00 | ppb | 0.00 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.180 | 244 | 83327 | 41.13 | ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = | 8.23% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 152169 | 40.59 | ppb | 99 |
| 3) 2-Methylnaphthalene | 6.578 | 142 | 100467 | 39.96 | ppb | 98 |
| 4) 1-Methylnaphthalene | 6.696 | 142 | 92719 | 40.16 | ppb | 99 |
| 5) Acenaphthylene | 7.625 | 152 | 133087 | 39.85 | ppb | 99 |
| 6) Acenaphthene | 7.823 | 153 | 87608 | 40.34 | ppb | 99 |
| 7) Dibenzofuran | 8.016 | 168 | 112420 | 40.49 | ppb | 99 |
| 8) Fluorene | 8.404 | 166 | 90161 | 40.67 | ppb | 99 |
| 9) Phenanthrene | 9.470 | 178 | 117504 | 41.37 | ppb | 98 |
| 10) Anthracene | 9.526 | 178 | 114777 | 40.22 | ppb | 99 |
| 11) Fluoranthene | 10.775 | 202 | 109222 | 41.42 | ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 115618 | 40.54 | ppb | 98 |
| 14) Benzo(a)anthracene | 12.330 | 228 | 181359 | 39.18 | ppb | 100 |
| 15) Chrysene | 12.369 | 228 | 153818 | 40.88 | ppb | 77 |
| 16) Benzo(b)fluoranthene | 13.472 | 252 | 147590 | 39.76 | ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.501 | 252 | 141499 | 38.17 | ppb | 98 |
| 18) Benzo(a)pyrene | 13.842 | 252 | 136839 | 38.81 | ppb | 95 |
| 19) Indeno(1,2,3-cd)pyrene | 15.333 | 276 | 170119 | 39.64 | ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.349 | 278 | 140943 | 39.79 | ppb | 93 |
| 21) Benzo(g,h,i)perylene | 15.760 | 276 | 139493 | 39.23 | ppb | 99 |

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

pm 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF017.D Vial: 7
Acq On : 08 May 2014 13:40 Operator: KV
Sample : SVF0E085 40PPB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:47 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF016.D
Vial: 6
Acq On : 08 May 2014 13:17
Operator: KV
Sample : SVF0E084 80PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 7937548 | 2000.00 | ppb | 0.00 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 219212 | 74.67 | ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = | 14.93% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 401533 | 73.92 | ppb | 98 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 271326 | 74.48 | ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 250355 | 74.84 | ppb | 99 |
| 5) Acenaphthylene | 7.626 | 152 | 359752 | 74.35 | ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 234592 | 74.54 | ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 300779 | 74.76 | ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 241130 | 75.06 | ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 311853 | 75.77 | ppb | 100 |
| 10) Anthracene | 9.527 | 178 | 313341 | 75.78 | ppb | 99 |
| 11) Fluoranthene | 10.775 | 202 | 288030 | 75.38 | ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 312643 | 75.65 | ppb | 97 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 462964 | 75.43 | ppb | 100 |
| 15) Chrysene | 12.370 | 228 | 410255 | 75.25 | ppb | 97 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 403227 | 74.97 | ppb | 99 |
| 17) Benzo(k)fluoranthene | 13.502 | 252 | 397711 | 74.04 | ppb | 99 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 372463 | 72.90 | ppb | 99 |
| 19) Indeno(1,2,3-cd)pyrene | 15.331 | 276 | 459641 | 73.91 | ppb | 98 |
| 20) Dibenzo(a,h)anthracene | 15.348 | 278 | 378829 | 73.81 | ppb | 99 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 392568 | 76.19 | ppb | 98 |

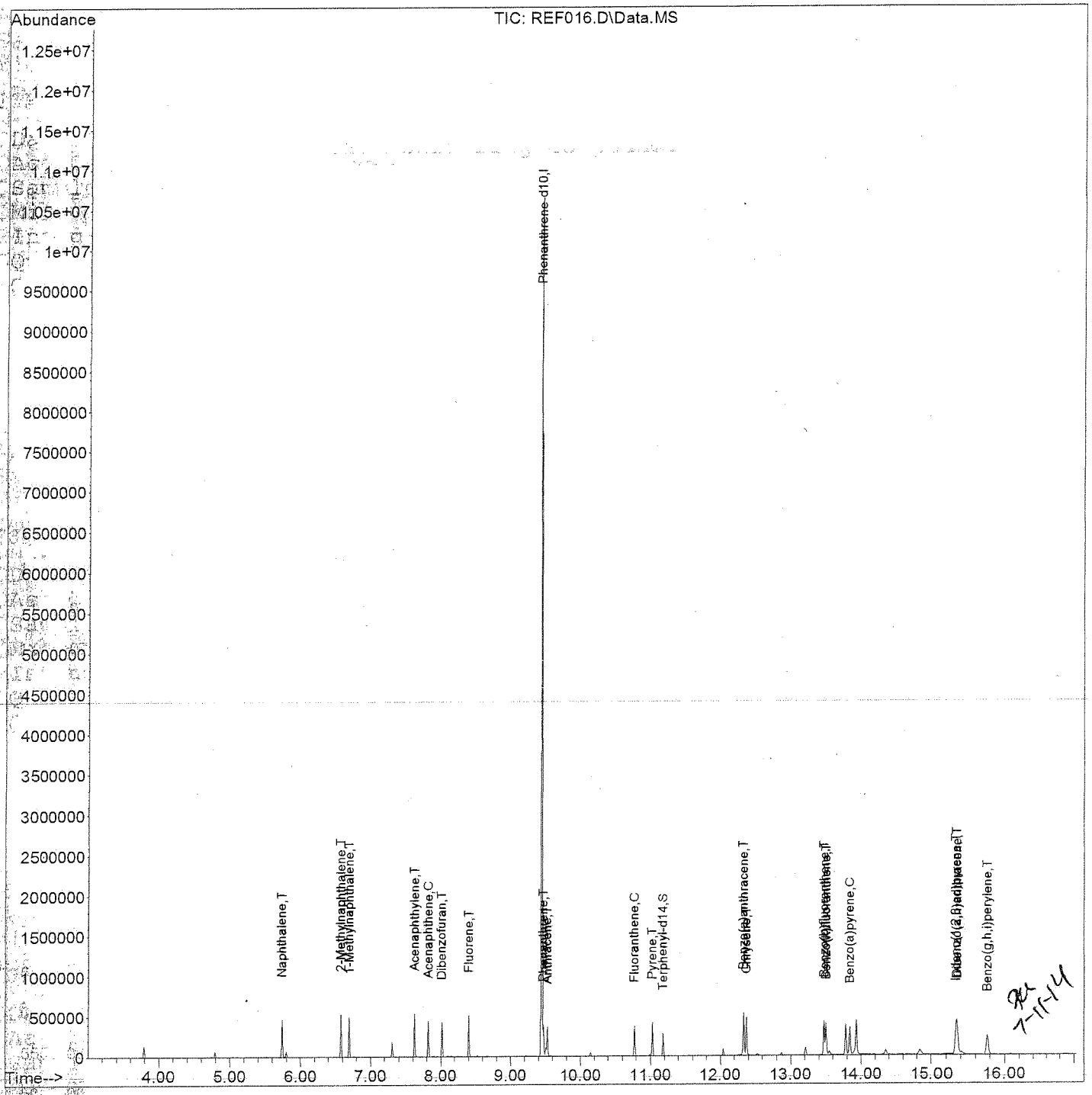
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF016.D
Acq On : 08 May 2014 13:17
Sample : SVF0E084 80PPB
Misc : F0
Integrator: RTE
Quant Time: May 08 14:39:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 6
Operator: KV
Inst : DSQ
Multiplr: 1.00




7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF015.D
Vial: 5
Acq On : 08 May 2014 12:54
Operator: KV
Sample : SVF0E083 100PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.444 | 188 | 5327101 | 2000.00 | ppb | 0.00 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.181 | 244 | 190088 | 96.48 | ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = | 19.30% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.742 | 128 | 357872 | 98.17 | ppb | 99 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 244851 | 100.15 | ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 222774 | 99.22 | ppb | 99 |
| 5) Acenaphthylene | 7.626 | 152 | 328041 | 101.01 | ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 213620 | 101.14 | ppb | 99 |
| 7) Dibenzofuran | 8.015 | 168 | 270411 | 100.14 | ppb | 99 |
| 8) Fluorene | 8.403 | 166 | 218467 | 101.34 | ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 278620 | 100.87 | ppb | 99 |
| 10) Anthracene | 9.527 | 178 | 278120 | 100.22 | ppb | 99 |
| 11) Fluoranthene | 10.777 | 202 | 253501 | 98.86 | ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 274024 | 98.80 | ppb | 96 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 396477 | 98.57 | ppb | 96 |
| 15) Chrysene | 12.370 | 228 | 353201 | 96.53 | ppb | 93 |
| 16) Benzo(b)fluoranthene | 13.472 | 252 | 349041 | 96.69 | ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.502 | 252 | 359178 | 99.63 | ppb | 98 |
| 18) Benzo(a)pyrene | 13.840 | 252 | 333230 | 97.18 | ppb | 100 |
| 19) Indeno(1,2,3-cd)pyrene | 15.333 | 276 | 402132 | 96.35 | ppb | 98 |
| 20) Dibenzo(a,h)anthracene | 15.350 | 278 | 332039 | 96.40 | ppb | 99 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 337001 | 97.45 | ppb | 100 |

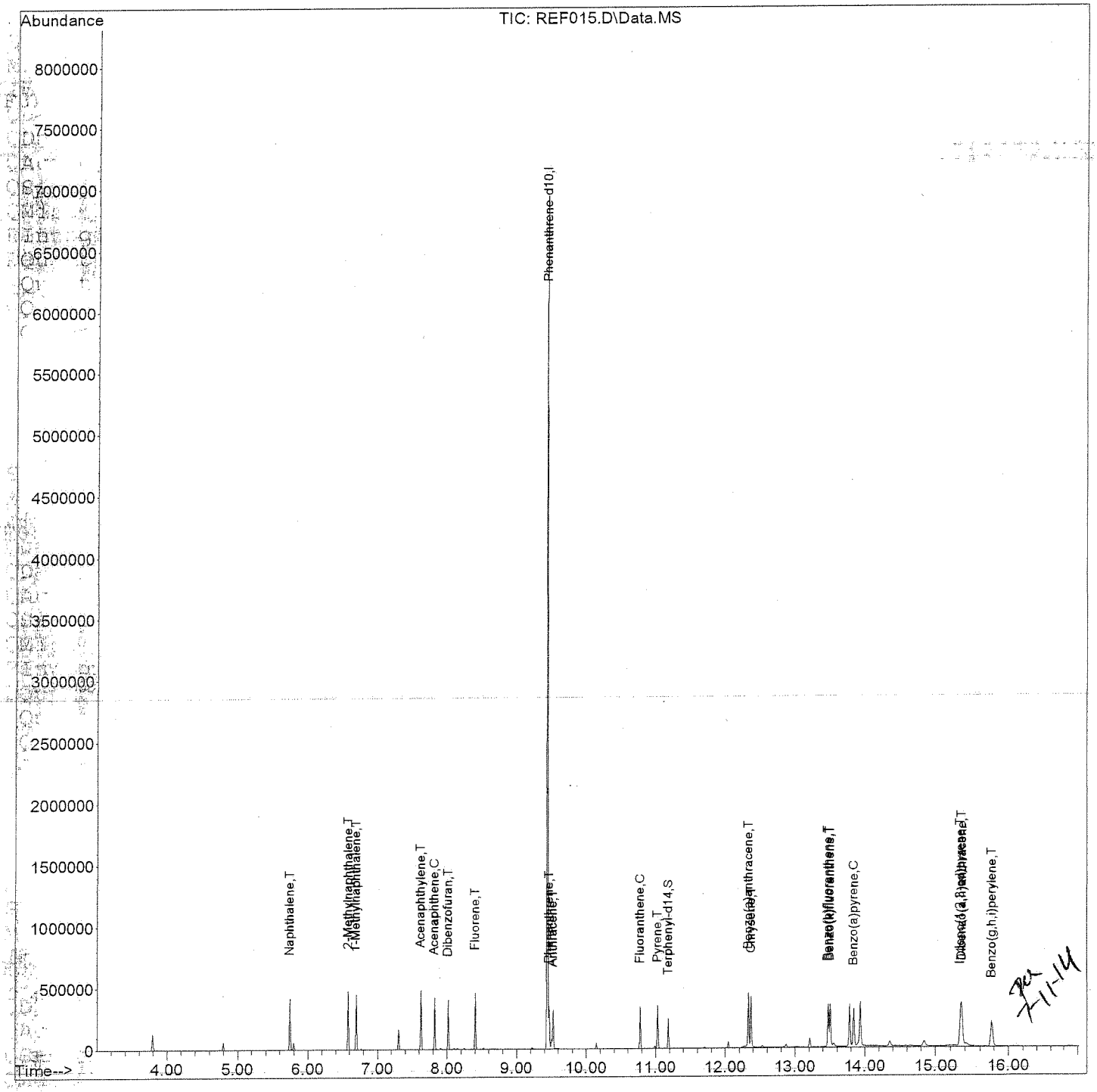
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF015.D
Acq On : 08 May 2014 12:54
Sample : SVF0E083 100PPB
Misc : F0
Integrator: RTE
Quant Time: May 08 14:39:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 5
Operator: KV
Inst : DSQ
Multiplr: 1.00




per 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF014.D
Vial: 4
Acq On : 08 May 2014 12:31
Operator: KV
Sample : SVF0E082 500PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:00 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

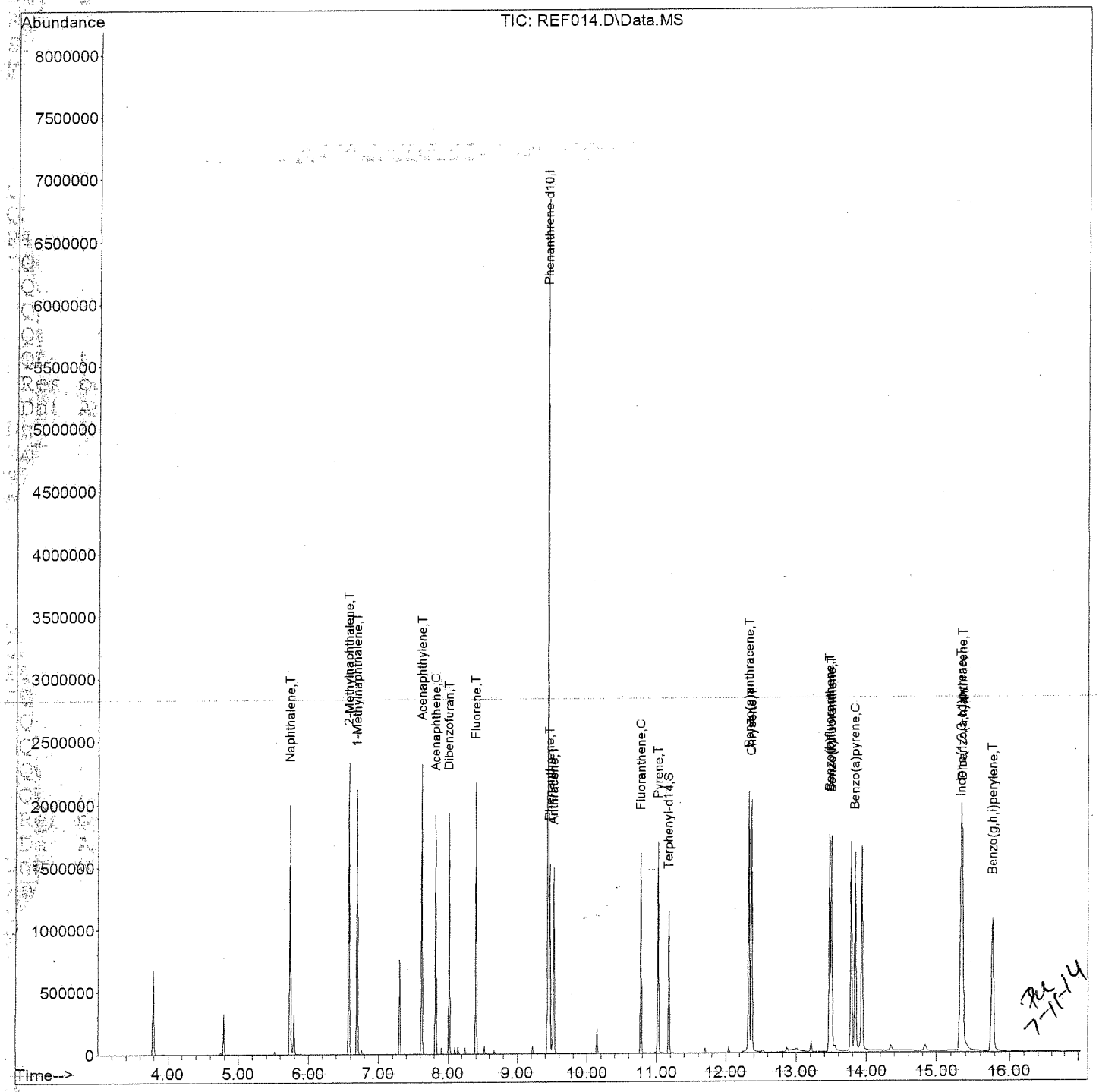
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.444 | 188 | 5005097 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.181 | 244 | 918914 | 496.42 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 99.28% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 1741943 | 508.59 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 1168286 | 508.61 ppb | 100 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 1062669 | 503.76 ppb | 100 |
| 5) Acenaphthylene | 7.626 | 152 | 1557242 | 510.37 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 984537 | 496.11 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 1273461 | 501.94 ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 1006867 | 497.08 ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 1283892 | 494.70 ppb | 100 |
| 10) Anthracene | 9.527 | 178 | 1310366 | 502.58 ppb | 100 |
| 11) Fluoranthene | 10.777 | 202 | 1197242 | 496.93 ppb | 100 |
| 12) Pyrene | 11.029 | 202 | 1289762 | 494.96 ppb | 100 |
| 14) Benzo(a)anthracene | 12.331 | 228 | 1904241 | 538.42 ppb | 100 |
| 15) Chrysene | 12.370 | 228 | 1736704 | 505.18 ppb | 100 |
| 16) Benzo(b)fluoranthene | 13.475 | 252 | 1763855 | 520.06 ppb | 100 |
| 17) Benzo(k)fluoranthene | 13.504 | 252 | 1812490 | 535.08 ppb | 100 |
| 18) Benzo(a)pyrene | 13.842 | 252 | 1724163 | 535.18 ppb | 100 |
| 19) Indeno(1,2,3-cd)pyrene | 15.336 | 276 | 2073112 | 528.68 ppb | 100 |
| 20) Dibenzo(a,h)anthracene | 15.353 | 278 | 1685316 | 520.75 ppb | 100 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 1737462 | 534.77 ppb | 100 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF014.D
Vial: 4
Acq On : 08 May 2014 12:31
Operator: KV
Sample : SVF0E082 500PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:00 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




RL 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF013.D
Vial: 3
Acq On : 08 May 2014 12:10
Operator: KV
Sample : SVF0E081 1000PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:38:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 5187965 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 1730433 | 901.87 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 180.37% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 3212458 | 904.87 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 2161799 | 907.96 ppb | 100 |
| 4) 1-Methylnaphthalene | 6.693 | 142 | 1968901 | 900.47 ppb | 100 |
| 5) Acenaphthylene | 7.623 | 152 | 2954163 | 934.07 ppb | 99 |
| 6) Acenaphthene | 7.821 | 153 | 1874579 | 911.31 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 2421617 | 920.85 ppb | 99 |
| 8) Fluorene | 8.403 | 166 | 1929445 | 918.98 ppb | 100 |
| 9) Phenanthrene | 9.469 | 178 | 2407864 | 895.09 ppb | 100 |
| 10) Anthracene | 9.525 | 178 | 2490401 | 921.51 ppb | 100 |
| 11) Fluoranthene | 10.775 | 202 | 2222593 | 889.99 ppb | 100 |
| 12) Pyrene | 11.027 | 202 | 2462047 | 911.53 ppb | 100 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 3522474 | 967.45 ppb | 94 |
| 15) Chrysene | 12.368 | 228 | 3242045 | 909.81 ppb | 99 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 3315418 | 943.07 ppb | 96 |
| 17) Benzo(k)fluoranthene | 13.503 | 252 | 3307129 | 941.91 ppb | 91 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 3256376 | 975.15 ppb | 96 |
| 19) Indeno(1,2,3-cd)pyrene | 15.336 | 276 | 3922801 | 965.12 ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.351 | 278 | 3186834 | 950.01 ppb | 100 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 3207572 | 952.45 ppb | 98 |

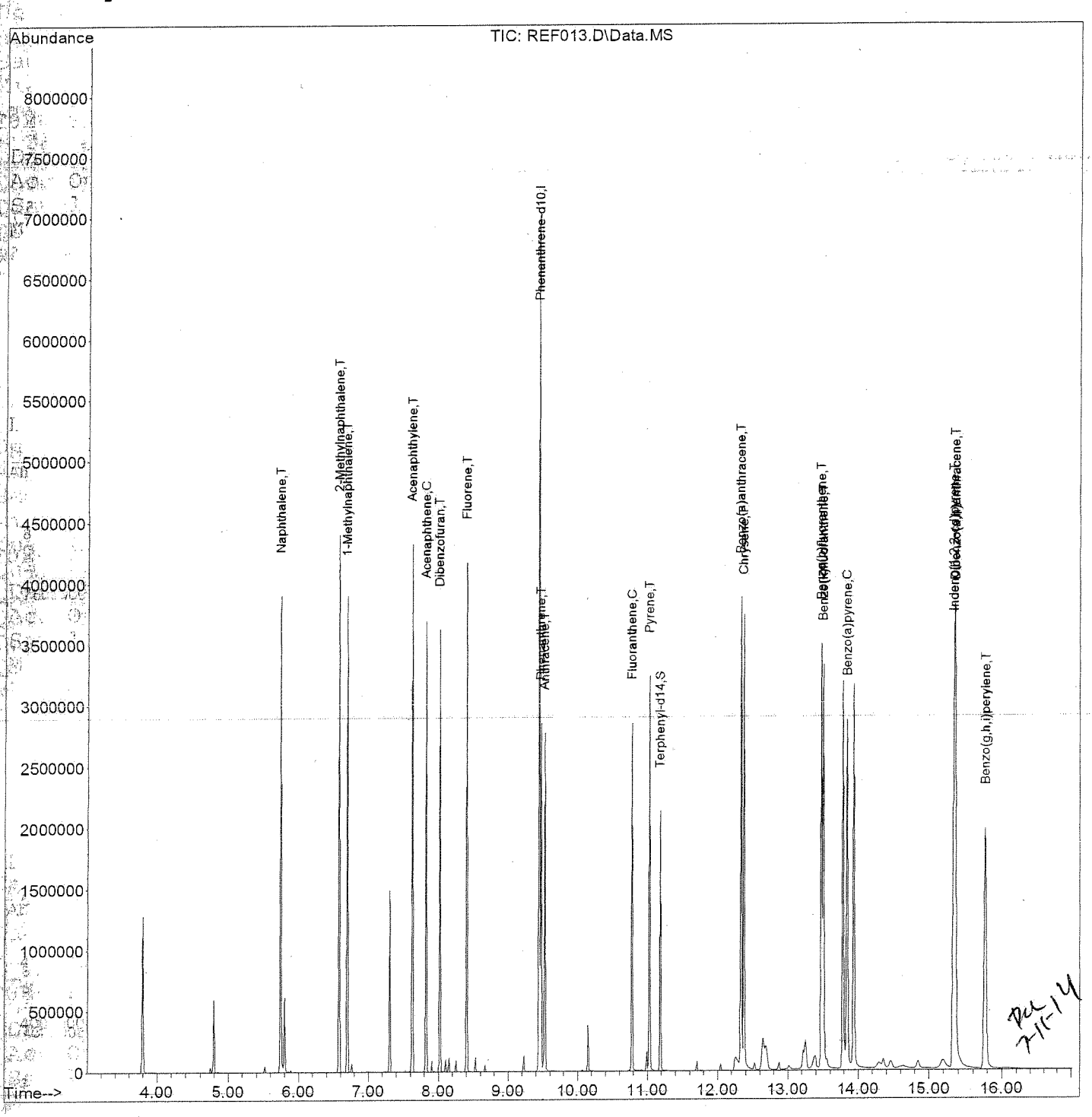
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF013.D
Acq On : 08 May 2014 12:10
Sample : SVF0E081 1000PPB
Misc : F0
Integrator: RTE
Quant Time: May 08 14:38:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 3
Operator: KV
Inst : DSQ
Multiplr: 1.00




PL 7-11-14



3049

# SECOND SOURCE VERIFICATION

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Acq On : 08 May 2014 14:26
Sample : ISVF0E081
Misc : F0
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 9
Operator: KV
Inst : DSQ
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | Amount | Calc. | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 2000.000 | 2000.000 | 0.0 | 126 | 0.00 |
| 2 | T | Naphthalene | 500.000 | 475.713 | 4.9 | 117 | 0.00 |
| 3 | T | 2-Methylnaphthalene | 500.000 | 460.899 | 7.8 | 114 | 0.00 |
| 4 | T | 1-Methylnaphthalene | 500.000 | 479.043 | 4.2 | 119 | 0.00 |
| 5 | T | Acenaphthylene | 500.000 | 469.742 | 6.1 | 116 | 0.00 |
| 6 | C | Acenaphthene | 500.000 | 479.360 | 4.1 | 121 | 0.00 |
| 7 | T | Dibenzofuran | 500.000 | 455.746 | 8.9 | 114 | 0.00 |
| 8 | T | Fluorene | 500.000 | 469.595 | 6.1 | 119 | 0.00 |
| 9 | T | Phenanthrene | 500.000 | 470.736 | 5.9 | 119 | 0.00 |
| 10 | T | Anthracene | 500.000 | 464.238 | 7.2 | 116 | 0.00 |
| 11 | C | Fluoranthene | 500.000 | 488.088 | 2.4 | 123 | 0.00 |
| 12 | T | Pyrene | 500.000 | 471.132 | 5.8 | 120 | 0.00 |
| 13 | S | Terphenyl-d14 | 500.000 | 0.000 | 100.0# | 0 | -11.18# |
| 14 | T | Benzo(a)anthracene | 500.000 | 513.537 | -2.7 | 120 | 0.00 |
| 15 | T | Chrysene | 500.000 | 482.748 | 3.5 | 120 | 0.00 |
| 16 | T | Benzo(b)fluoranthene | 500.000 | 496.628 | 0.7 | 120 | 0.00 |
| 17 | T | Benzo(k)fluoranthene | 500.000 | 494.243 | 1.2 | 116 | 0.00 |
| 18 | C | Benzo(a)pyrene | 500.000 | 494.774 | 1.0 | 116 | 0.00 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 500.000 | 490.776 | 1.8 | 117 | 0.00 |
| 20 | T | Dibenzo(a,h)anthracene | 500.000 | 488.185 | 2.4 | 118 | 0.00 |
| 21 | T | Benzo(g,h,i)perylene | 500.000 | 490.934 | 1.8 | 115 | 0.00 |

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

7-1-14

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Acq On : 08 May 2014 14:26
Sample : ISVF0E081
Misc : F0
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 9
Operator: KV
Inst : DSQ
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 126 | 0.00 |
| 2 | T | Naphthalene | 1.369 | 1.302 | 4.9 | 117 | 0.00 |
| 3 | T | 2-Methylnaphthalene | 0.918 | 0.846 | 7.8 | 114 | 0.00 |
| 4 | T | 1-Methylnaphthalene | 0.843 | 0.808 | 4.2 | 119 | 0.00 |
| 5 | T | Acenaphthylene | 1.219 | 1.145 | 6.1 | 116 | 0.00 |
| 6 | C | Acenaphthene | 0.793 | 0.760 | 4.2 | 121 | 0.00 |
| 7 | T | Dibenzofuran | 1.014 | 0.924 | 8.9 | 114 | 0.00 |
| 8 | T | Fluorene | 0.809 | 0.760 | 6.1 | 119 | 0.00 |
| 9 | T | Phenanthrene | 1.037 | 0.976 | 5.9 | 119 | 0.00 |
| 10 | T | Anthracene | 1.042 | 0.967 | 7.2 | 116 | 0.00 |
| 11 | C | Fluoranthene | 0.963 | 0.940 | 2.4 | 123 | 0.00 |
| 12 | T | Pyrene | 1.041 | 0.981 | 5.8 | 120 | 0.00 |
| 13 | S | Terphenyl-d14 | 0.740 | 0.000# | 100.0# | 0# | -11.18# |
| 14 | T | Benzo(a)anthracene | 1.587 | 1.453 | 8.4 | 120 | 0.00 |
| 15 | T | Chrysene | 1.374 | 1.326 | 3.5 | 120 | 0.00 |
| 16 | T | Benzo(b)fluoranthene | 1.355 | 1.346 | 0.7 | 120 | 0.00 |
| 17 | T | Benzo(k)fluoranthene | 1.354 | 1.338 | 1.2 | 116 | 0.00 |
| 18 | C | Benzo(a)pyrene | 1.287 | 1.274 | 1.0 | 116 | 0.00 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 1.567 | 1.538 | 1.9 | 117 | 0.00 |
| 20 | T | Dibenzo(a,h)anthracene | 1.293 | 1.263 | 2.3 | 118 | 0.00 |
| 21 | T | Benzo(g,h,i)perylene | 1.298 | 1.275 | 1.8 | 115 | 0.00 |

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

RC 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Vial: 9
Acq On : 08 May 2014 14:26
Operator: KV
Sample : ISVF0E081
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
Last Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

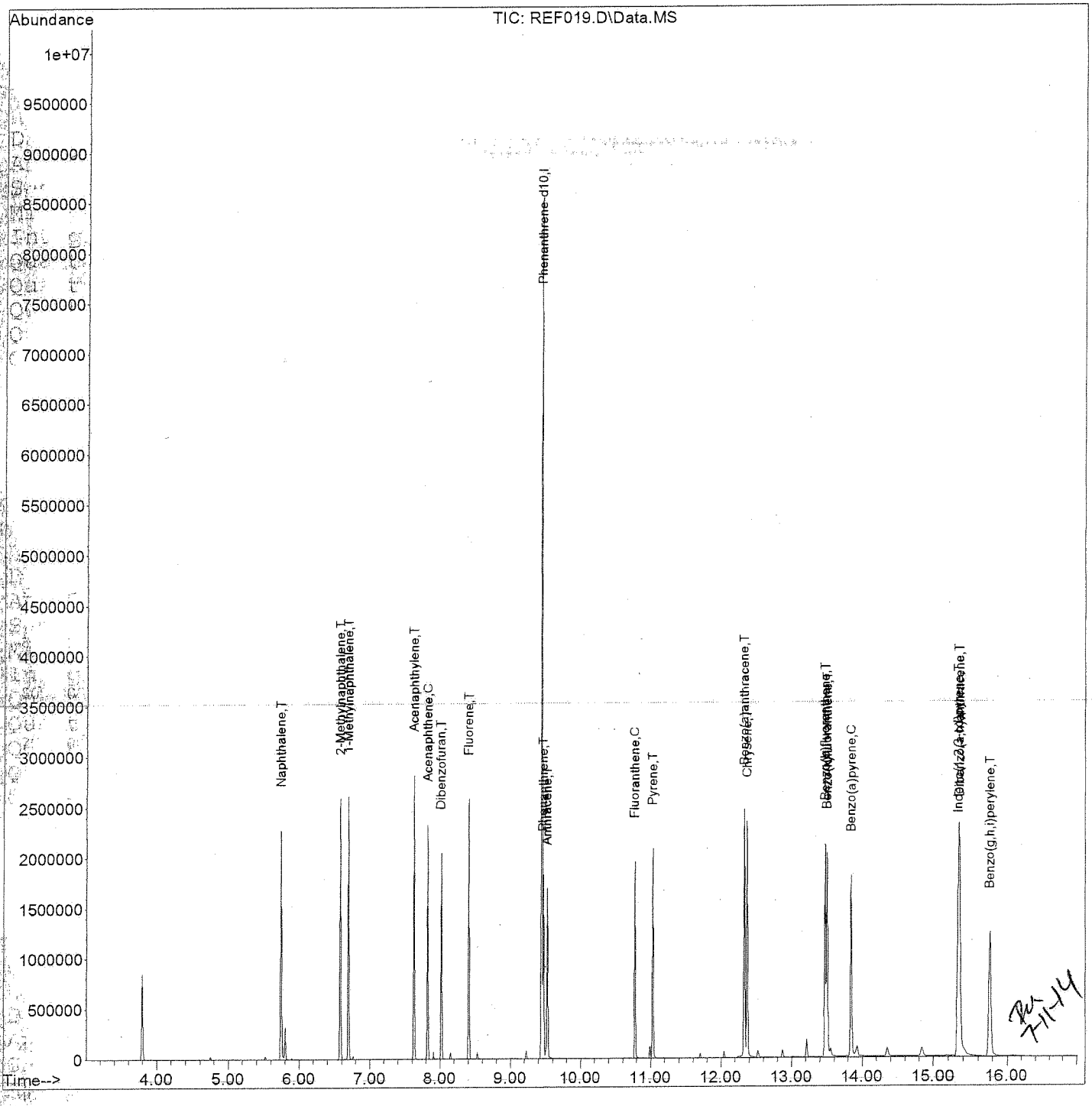
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 6284290 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 0.000 | 244 | 0d | 0.00 ppb | |
| Spiked Amount 500.000 | | | Recovery | = 0.00% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 2045775 | 475.71 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 1329272 | 460.90 ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 1268792 | 479.04 ppb | 100 |
| 5) Acenaphthylene | 7.626 | 152 | 1799597 | 469.74 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 1194428 | 479.36 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 1451767 | 455.75 ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 1194287 | 469.59 ppb | 100 |
| 9) Phenanthrene | 9.469 | 178 | 1533926 | 470.74 ppb | 100 |
| 10) Anthracene | 9.525 | 178 | 1519738 | 464.24 ppb | 100 |
| 11) Fluoranthene | 10.775 | 202 | 1476496 | 488.09 ppb | 100 |
| 12) Pyrene | 11.027 | 202 | 1541444 | 471.13 ppb | 97 |
| 14) Benzo(a)anthracene | 12.330 | 228 | 2282138 | 513.54 ppb | 94 |
| 15) Chrysene | 12.368 | 228 | 2083761 | 482.75 ppb | 98 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 2114870 | 496.63 ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.501 | 252 | 2102041 | 494.24 ppb | 100 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 2001383 | 494.77 ppb | 99 |
| 19) Indeno(1,2,3-cd)pyrene | 15.332 | 276 | 2416327 | 490.78 ppb | 97 |
| 20) Dibenzo(a,h)anthracene | 15.349 | 278 | 1983704 | 488.19 ppb | 97 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 2002714 | 490.93 ppb | 99 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Vial: 9
Acq On : 08 May 2014 14:26
Operator: KV
Sample : ISVF0E081
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RJF031
Instrument ID: TOF0

Project: RED HILL PHASE 1B
SDG No.: 14J130
DFTPP Injection Date: 10/28/14
DFTPP Injection Time: 09:33

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 40.81 |
| 68 | Less than 2% of mass 69 | 0.25( 1.1)1 |
| 69 | Relative abundance of mass 198 | 22.34 |
| 70 | Less than 2.0% of mass 69 | 0.06( 0.3)1 |
| 127 | 40.0 - 60.0% of mass 198 | 44.74 |
| 197 | Less than 1.0% of mass 198 | 0.36 |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 199 | 5.0 - 9.0% of mass 198 | 6.52 |
| 275 | 10.0 - 30.0% of mass 198 | 28.77 |
| 365 | Greater than 1.00% of mass 198 | 2.00 |
| 441 | Present, but less than mass 443 | 13.28( 84.6)3 |
| 442 | Greater than 40.0% of mass 198 | 86.46 |
| 443 | 17.0 - 23.0% of mass 442 | 15.69( 18.2)2 |

1-Value is % mass 69 2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 1 | SSTD025 | CSVF0E0807 | RJF032 | 10/28/14 | 09:48 |
| 2 | MBLK1W | SVJ034WB | RJF033 | 10/28/14 | 10:13 |
| 3 | LCS1W | SVJ034WL | RJF034 | 10/28/14 | 10:41 |
| 4 | LCD1W | SVJ034WC | RJF035 | 10/28/14 | 11:08 |
| 5 | RHMW07-GW-01 | J130-01 | RJF036 | 10/28/14 | 11:44 |
| 6 | RHMW07-GW-01FD | J130-02 | RJF037 | 10/28/14 | 12:03 |



FORM V SV OLM02.0

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF014
Instrument ID: TOF0

Project:RED HILL PHASE 1B
SDG No.: 14J130
Date Analyzed: 05/08/14
Time Analyzed: 12:31

| | | IS4(PHN) AREA # | RT # | IS5(CRY) AREA # | RT # | IS6(PRY) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 5005097 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| | UPPER LIMIT | 10010194 | 9.94 | 0 | 0.50 | 0 | 0.50 |
| | LOWER LIMIT | 2502549 | 8.94 | 0 | -0.50 | 0 | -0.50 |
| | SAMPLE ID | | | | | | |
| 1 | SSTD500 | 5332031 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 2 | MBLK1W | 4529029 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 3 | LCS1W | 4565409 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 4 | LCD1W | 4726800 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 5 | RHMW07-GW-01 | 4893440 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 6 | RHMW07-GW-01FD | 4832655 | 9.47 | 0 | 0.00 | 0 | 0.00 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :DSQ
IC_Beginning DateTime :05/08/14 12:10
Spike Amount :500 PPB
CC/CV File :RJF032
IC File :REF014

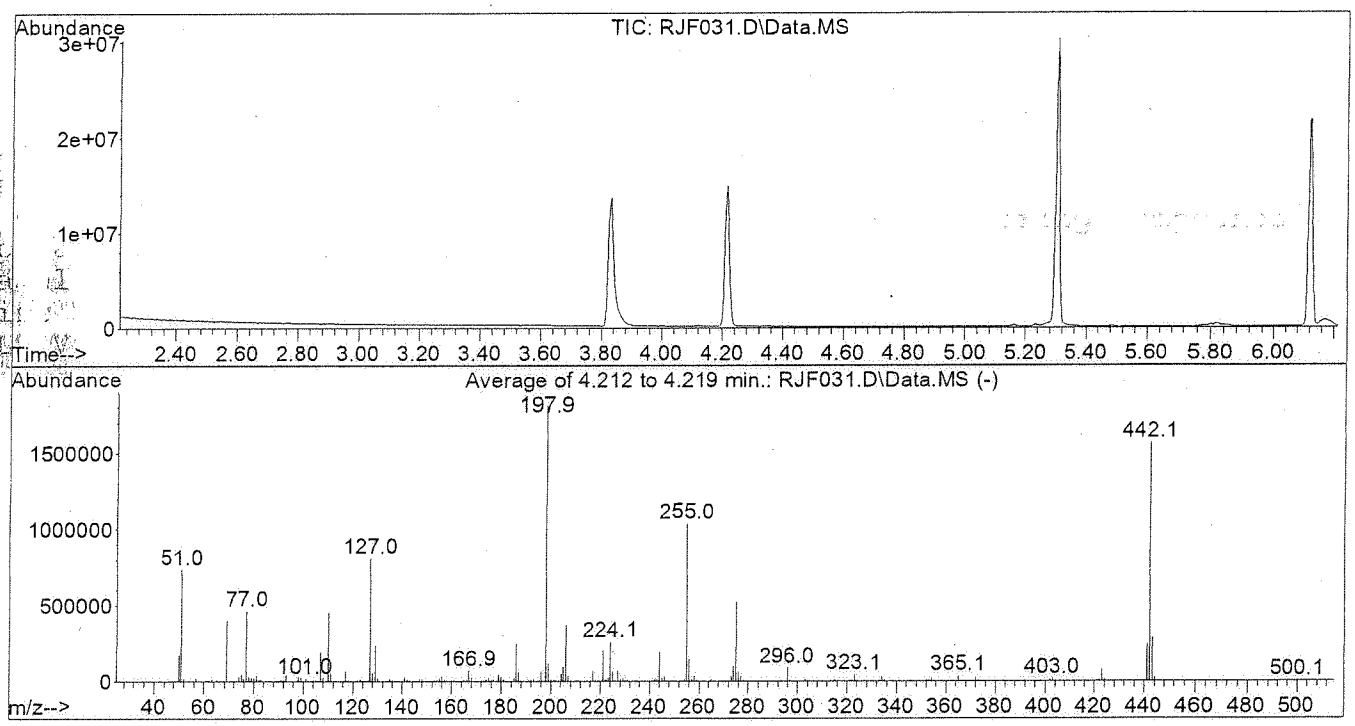
Column Spec :ZB-SEMIVOA ID:0.25MM
IC_Ending DateTime :05/08/14 14:03
HPChem Method :SVF0E08
Date_Time :10/28/14 09:48

| M IDX | Parameters | CC_Con | CC%_D | CC_Resp | CCRRF | AvRRF | CC_Rtm | AvRtm | %_RSD | Co_X0 | Co_X1 | Co_X2 | Co_Cor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 2000.00 | 0 | 5332031 | 1 | 1 | 9.466 | 9.443 | 0 | | | | |
| 2 | Naphthalene | 412.934 | -17.4 | 1506711 | 1.130 | 1.369 | 5.764 | 5.740 | 8.99 | | | | |
| 3 | 2-Methylnaphthalene | 511.352 | 2.3 | 1251309 | 0.939 | 0.918 | 6.604 | 6.577 | 8.25 | | | | |
| 4 | 1-Methylnaphthalene | 498.046 | -0.4 | 1119237 | 0.840 | 0.843 | 6.722 | 6.694 | 8.93 | | | | |
| 5 | Acenaphthylene | 478.943 | -4.2 | 1556810 | 1.168 | 1.219 | 7.655 | 7.625 | 6.61 | | | | |
| 6 | Acenaphthene | 482.818 | -3.4 | 1020745 | 0.766 | 0.793 | 7.851 | 7.821 | 8.22 | | | | |
| 7 | Dibenzofuran | 441.904 | -11.6 | 1194370 | 0.896 | 1.014 | 8.044 | 8.015 | 7.34 | | | | |
| 8 | Fluorene | 436.932 | -12.6 | 942836 | 0.707 | 0.809 | 8.428 | 8.403 | 7.05 | | | | |
| 9 | Phenanthrene | 427.129 | -14.6 | 1180924 | 0.886 | 1.037 | 9.493 | 9.470 | 7.86 | | | | |
| 10 | Anthracene | 440.114 | -12.0 | 1222445 | 0.917 | 1.042 | 9.549 | 9.526 | 6.78 | | | | |
| 11 | Fluoranthene | 434.145 | -13.2 | 1114309 | 0.836 | 0.963 | 10.800 | 10.776 | 8.86 | | | | |
| 12 | Pyrene | 425.750 | -14.9 | 1181887 | 0.887 | 1.041 | 11.051 | 11.027 | 8.26 | | | | |
| 13 | Terphenyl-d14 | 498.345 | -0.3 | 982735 | 0.737 | 0.740 | 11.201 | 11.179 | 9.81 | | | | |
| 14 | Benzo(a)anthracene | 519.124 | 3.8 | 1957052 | 1.468 | 1.587 | 12.354 | 12.330 | 15.30 | 0.0058 | 1.3915 | | 0.9984 |
| 15 | Chrysene | 480.578 | -3.9 | 1760060 | 1.320 | 1.374 | 12.395 | 12.369 | 8.55 | | | | |
| 16 | Benzo(b)fluoranthene | 479.119 | -4.2 | 1731142 | 1.299 | 1.355 | 13.502 | 13.473 | 6.94 | | | | |
| 17 | Benzo(k)fluoranthene | 500.066 | 0.0 | 1804529 | 1.354 | 1.354 | 13.529 | 13.502 | 7.55 | | | | |
| 18 | Benzo(a)pyrene | 484.697 | -3.1 | 1663528 | 1.248 | 1.287 | 13.875 | 13.841 | 7.12 | | | | |
| 19 | Indeno(1,2,3-cd)pyrene | 493.208 | -1.4 | 2060337 | 1.546 | 1.567 | 15.390 | 15.333 | 6.56 | | | | |
| 20 | Dibenzo(a,h)anthracene | 495.927 | -0.8 | 1709806 | 1.283 | 1.293 | 15.407 | 15.350 | 7.44 | | | | |
| 21 | Benzo(g,h,i)perylene | 506.285 | 1.3 | 1752374 | 1.315 | 1.298 | 15.824 | 15.762 | 5.54 | | | | |

Data Path : C:\msdchem\1\DATA\14J28\
Data File : RJF031.D
Acq On : 28 Oct 2014 09:33
Operator : KVu
Sample : DFTF0E0807
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Fri May 09 13:48:37 2014



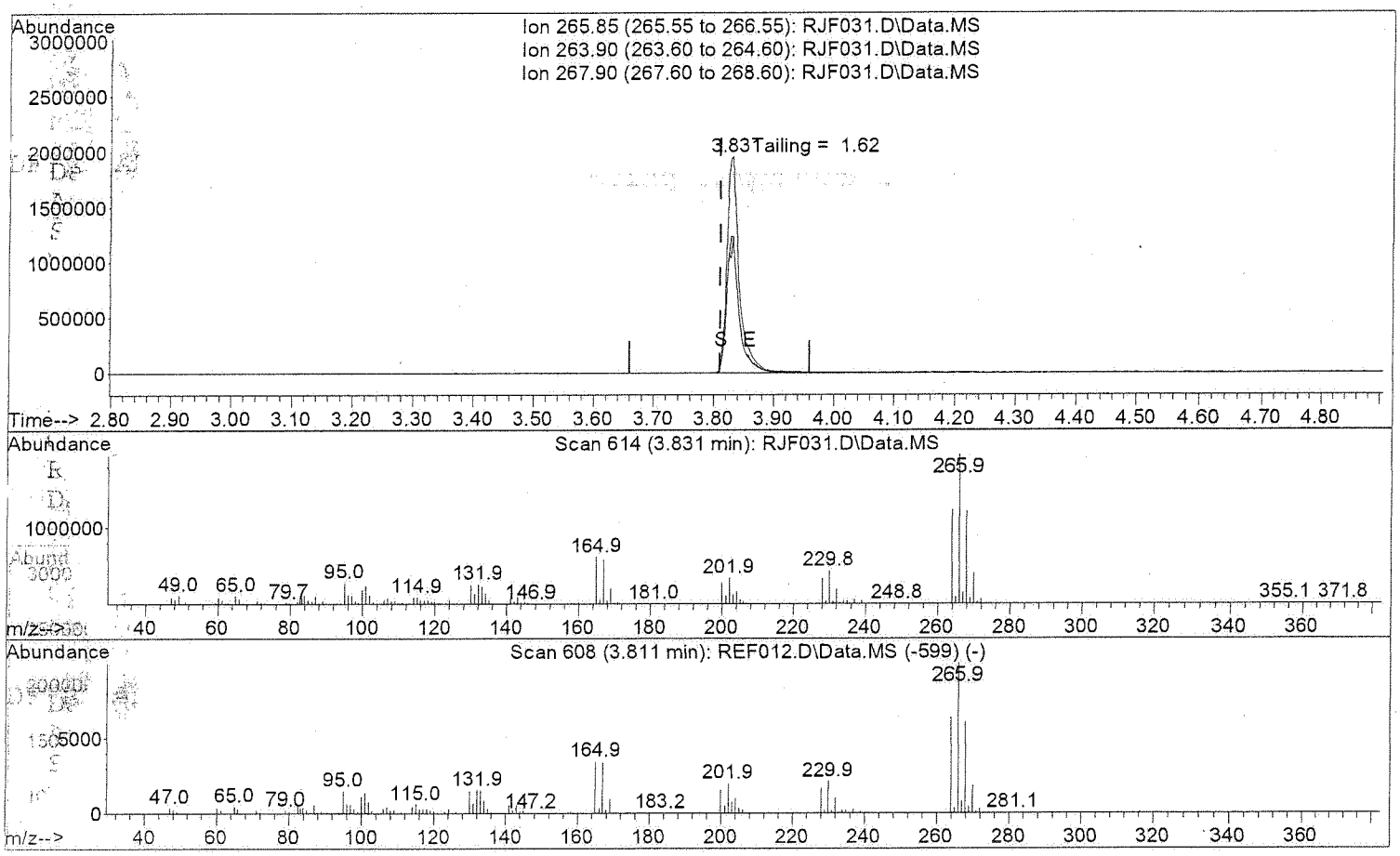

AutoFind: Scans 729, 730, 731; Background Corrected with Scan 720

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 30 | 60 | 40.8 | 739293 | PASS |
| 68 | 69 | 0.00 | 2 | 1.1 | 4595 | PASS |
| 69 | 198 | 0.00 | 100 | 22.3 | 404669 | PASS |
| 70 | 69 | 0.00 | 2 | 0.3 | 1081 | PASS |
| 127 | 198 | 40 | 60 | 44.7 | 810475 | PASS |
| 197 | 198 | 0.00 | 1 | 0.4 | 6471 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1811627 | PASS |
| 199 | 198 | 5 | 9 | 6.5 | 118181 | PASS |
| 275 | 198 | 10 | 30 | 28.8 | 521152 | PASS |
| 365 | 198 | 1 | 100 | 2.0 | 36144 | PASS |
| 441 | 443 | 0.01 | 100 | 84.6 | 240512 | PASS |
| 442 | 198 | 40 | 100 | 86.5 | 1566379 | PASS |
| 443 | 442 | 17 | 23 | 18.2 | 284331 | PASS |

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14J28\RJF031.D
Acq On : 28 Oct 2014 09:33
Sample : DFTF0E0807
Misc : F0
Integrator: RTE
Quant Time: Oct 28 09:47:23 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RJF031.D\Data.MS

(1) Pentachlorophenol (T)

3.831min (+0.020) 82.65 ppm

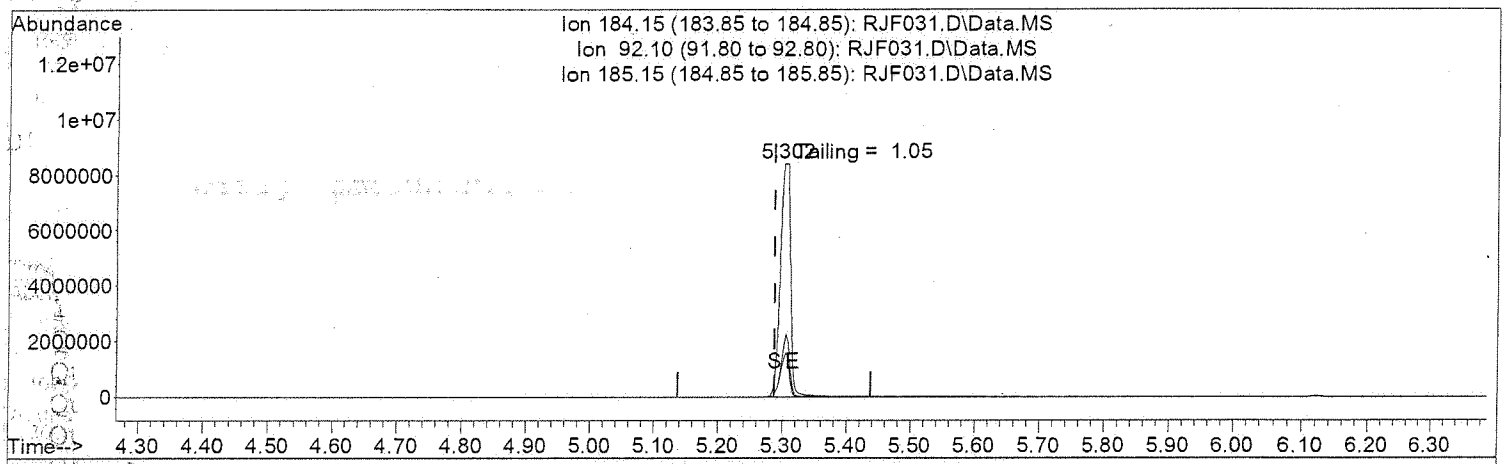
response 2794565

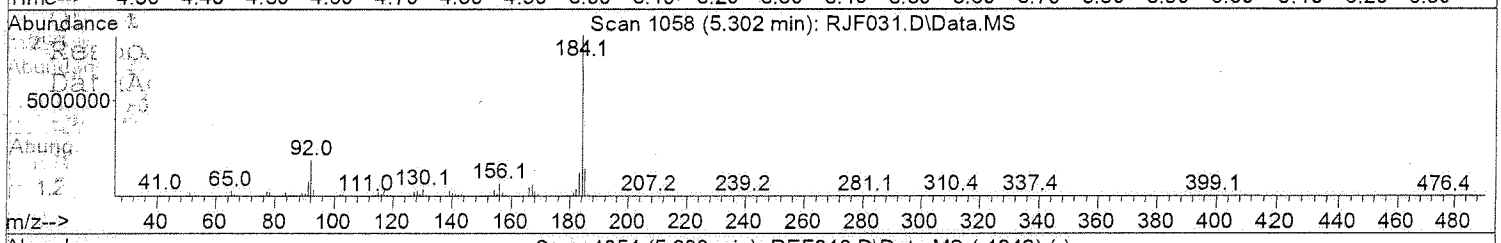
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 63.34 |
| 267.90 | 62.70 | 61.89 |
| 0.00 | 0.00 | 0.00 |

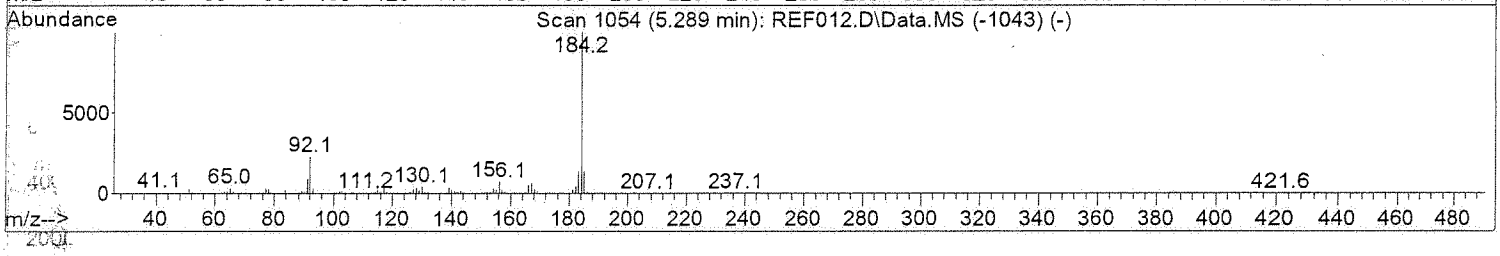
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14J28\RJF031.D
Acq On : 28 Oct 2014 09:33
Sample : DFTF0E0807
Misc : F0
Integrator: RTE
Quant Time: Oct 28 09:47:23 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RJF031.D\Data.MS

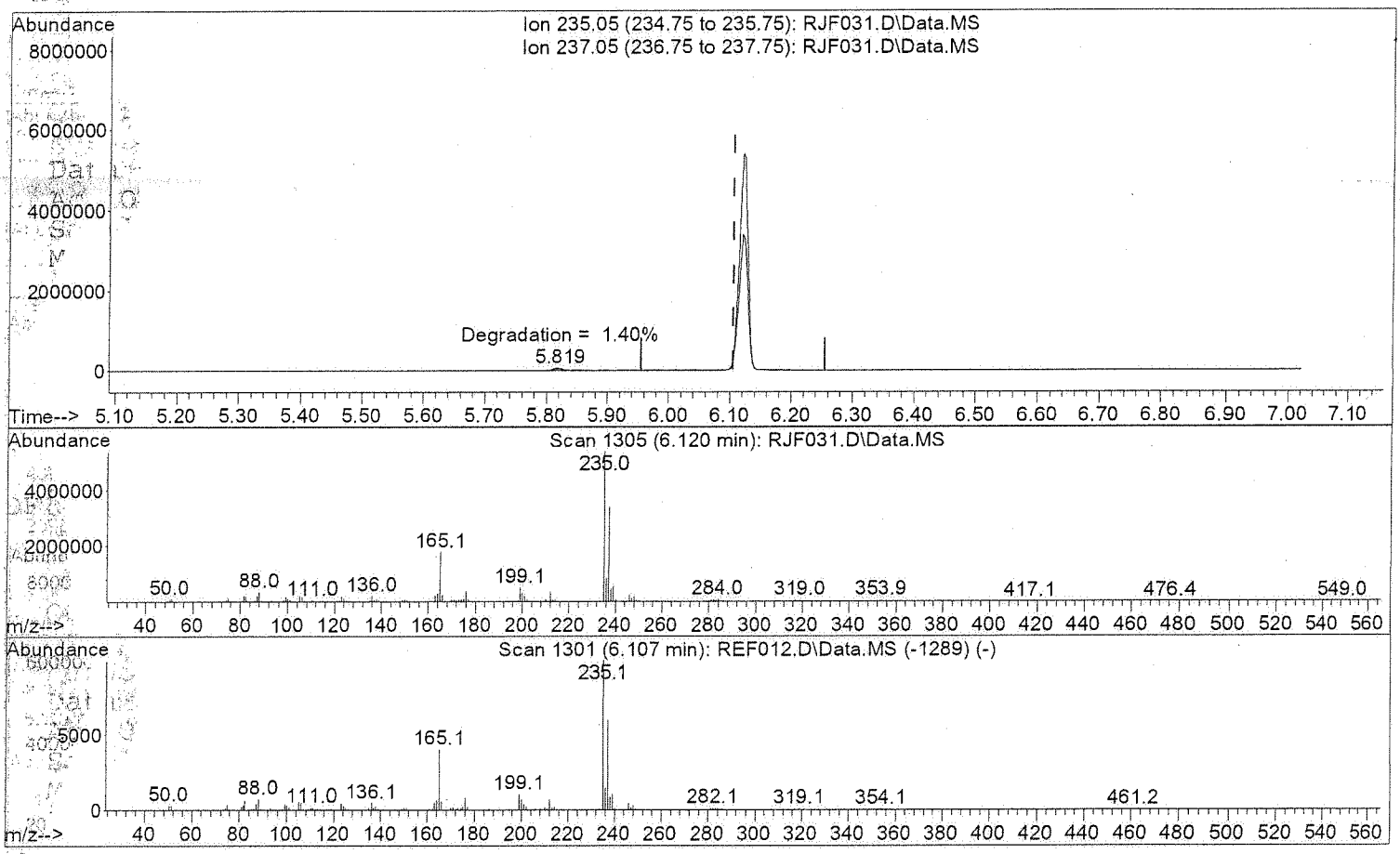
(3) Benzidine (T)
5.302min (+0.014) 54.51 ppm
response 9366019

| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.69 |
| 185.15 | 13.30 | 15.56 |
| 0.00 | 0.00 | 0.00 |

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14J28\RJF031.D
Acq On : 28 Oct 2014 09:33
Sample : DFTF0E0807
Misc : F0
Integrator: RTE
Quant Time: Oct 28 09:47:23 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RJF031.D\Data.MS

(6) DDT (T)

6.120min (+0.014) 64.15 ppm

response 5233404

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.58 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14J28\RJF032.D  Vial: 3
Acq On : 28 Oct 2014 09:48  Operator: KVu
Sample : CSVF0E0807  Inst : DSQ
Misc : F0  Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | Amount | Calc. | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 2000.000 | 2000.000 | 0.0 | 107 | 0.02 |
| 2 | T | Naphthalene | 500.000 | 412.934 | 17.4 | 86 | 0.02 |
| 3 | T | 2-Methylnaphthalene | 500.000 | 511.352 | -2.3 | 107 | 0.03 |
| 4 | T | 1-Methylnaphthalene | 500.000 | 498.046 | 0.4 | 105 | 0.03 |
| 5 | T | Acenaphthylene | 500.000 | 478.943 | 4.2 | 100 | 0.03 |
| 6 | C | Acenaphthene | 500.000 | 482.817 | 3.4 | 104 | 0.03 |
| 7 | T | Dibenzofuran | 500.000 | 441.904 | 11.6 | 94 | 0.03 |
| 8 | T | Fluorene | 500.000 | 436.932 | 12.6 | 94 | 0.02 |
| 9 | T | Phenanthrene | 500.000 | 427.129 | 14.6 | 92 | 0.02 |
| 10 | T | Anthracene | 500.000 | 440.114 | 12.0 | 93 | 0.02 |
| 11 | C | Fluoranthene | 500.000 | 434.145 | 13.2 | 93 | 0.02 |
| 12 | T | Pyrene | 500.000 | 425.749 | 14.9 | 92 | 0.02 |
| 13 | S | Terphenyl-d14 | 500.000 | 498.345 | 0.3 | 107 | 0.02 |
| 14 | T | Benzo(a)anthracene | 500.000 | 519.124 | -3.8 | 103 | 0.02 |
| 15 | T | Chrysene | 500.000 | 480.578 | 3.9 | 101 | 0.02 |
| 16 | T | Benzo(b)fluoranthene | 500.000 | 479.119 | 4.2 | 98 | 0.03 |
| 17 | T | Benzo(k)fluoranthene | 500.000 | 500.066 | -0.0 | 100 | 0.03 |
| 18 | C | Benzo(a)pyrene | 500.000 | 484.697 | 3.1 | 96 | 0.03 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 500.000 | 493.208 | 1.4 | 99 | 0.05 |
| 20 | T | Dibenzo(a,h)anthracene | 500.000 | 495.927 | 0.8 | 101 | 0.05 |
| 21 | T | Benzo(g,h,i)perylene | 500.000 | 506.285 | -1.3 | 101 | 0.06 |

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

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14J28\RJF032.D  Vial: 3
Acq On : 28 Oct 2014 09:48  Operator: KVu
Sample : CSVF0E0807  Inst : DSQ
Misc : F0  Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
Last Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 107 | 0.02 |
| 2 | T | Naphthalene | 1.369 | 1.130 | 17.5 | 86 | 0.02 |
| 3 | T | 2-Methylnaphthalene | 0.918 | 0.939 | -2.3 | 107 | 0.03 |
| 4 | T | 1-Methylnaphthalene | 0.843 | 0.840 | 0.4 | 105 | 0.03 |
| 5 | T | Acenaphthylene | 1.219 | 1.168 | 4.2 | 100 | 0.03 |
| 6 | C | Acenaphthene | 0.793 | 0.766 | 3.4 | 104 | 0.03 |
| 7 | T | Dibenzofuran | 1.014 | 0.896 | 11.6 | 94 | 0.03 |
| 8 | T | Fluorene | 0.809 | 0.707 | 12.6 | 94 | 0.02 |
| 9 | T | Phenanthrene | 1.037 | 0.886 | 14.6 | 92 | 0.02 |
| 10 | T | Anthracene | 1.042 | 0.917 | 12.0 | 93 | 0.02 |
| 11 | C | Fluoranthene | 0.963 | 0.836 | 13.2 | 93 | 0.02 |
| 12 | T | Pyrene | 1.041 | 0.887 | 14.8 | 92 | 0.02 |
| 13 | S | Terphenyl-d14 | 0.740 | 0.737 | 0.4 | 107 | 0.02 |
| 14 | T | Benzo(a)anthracene | 1.587 | 1.468 | 7.5 | 103 | 0.02 |
| 15 | T | Chrysene | 1.374 | 1.320 | 3.9 | 101 | 0.02 |
| 16 | T | Benzo(b)fluoranthene | 1.355 | 1.299 | 4.1 | 98 | 0.03 |
| 17 | T | Benzo(k)fluoranthene | 1.354 | 1.354 | 0.0 | 100 | 0.03 |
| 18 | C | Benzo(a)pyrene | 1.287 | 1.248 | 3.0 | 96 | 0.03 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 1.567 | 1.546 | 1.3 | 99 | 0.05 |
| 20 | T | Dibenzo(a,h)anthracene | 1.293 | 1.283 | 0.8 | 101 | 0.05 |
| 21 | T | Benzo(g,h,i)perylene | 1.298 | 1.315 | -1.3 | 101 | 0.06 |

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

Quantitation Report (QT Reviewed)

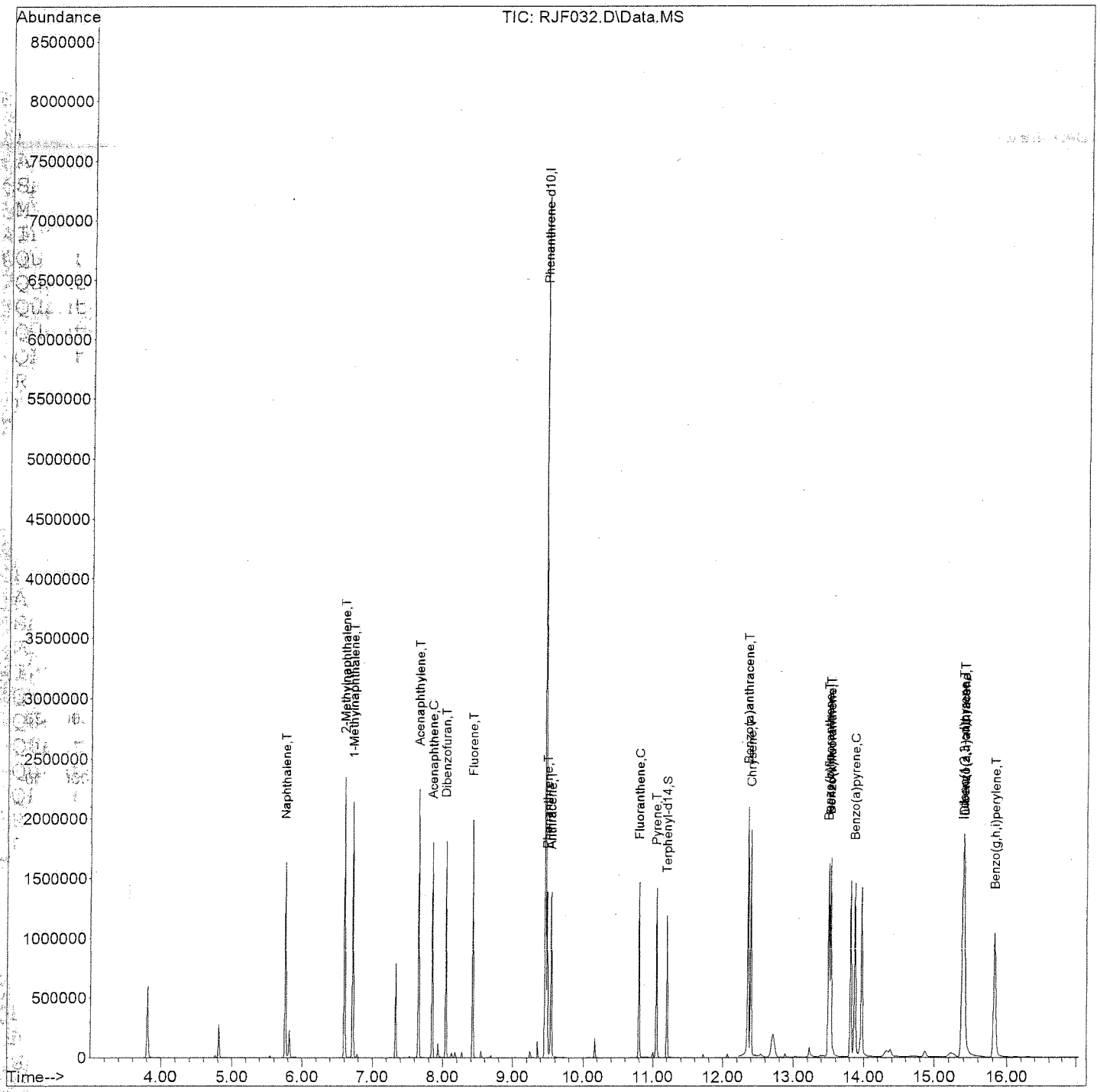
Data File : C:\msdchem\1\DATA\14J28\RJF032.D
Vial: 3
Acq On : 28 Oct 2014 09:48
Operator: KVu
Sample : CSVF0E0807
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 5332031 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.201 | 244 | 982735 | 498.35 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 99.67% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1506711 | 412.93 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.604 | 142 | 1251309 | 511.35 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.722 | 142 | 1119237 | 498.05 ppb | 99 |
| 5) Acenaphthylene | 7.655 | 152 | 1556810 | 478.94 ppb | 100 |
| 6) Acenaphthene | 7.851 | 153 | 1020745 | 482.82 ppb | 100 |
| 7) Dibenzofuran | 8.044 | 168 | 1194370 | 441.90 ppb | 98 |
| 8) Fluorene | 8.428 | 166 | 942836 | 436.93 ppb | 99 |
| 9) Phenanthrene | 9.493 | 178 | 1180924 | 427.13 ppb | 100 |
| 10) Anthracene | 9.549 | 178 | 1222445 | 440.11 ppb | 100 |
| 11) Fluoranthene | 10.799 | 202 | 1114309 | 434.14 ppb | 84 |
| 12) Pyrene | 11.051 | 202 | 1181887 | 425.75 ppb | 83 |
| 14) Benzo(a)anthracene | 12.354 | 228 | 1957052 | 519.12 ppb | 85 |
| 15) Chrysene | 12.395 | 228 | 1760060 | 480.58 ppb | 81 |
| 16) Benzo(b)fluoranthene | 13.502 | 252 | 1731142 | 479.12 ppb | 95 |
| 17) Benzo(k)fluoranthene | 13.529 | 252 | 1804529 | 500.07 ppb | 90 |
| 18) Benzo(a)pyrene | 13.874 | 252 | 1663528 | 484.70 ppb | 84 |
| 19) Indeno(1,2,3-cd)pyrene | 15.390 | 276 | 2060337 | 493.21 ppb | 81 |
| 20) Dibenzo(a,h)anthracene | 15.407 | 278 | 1709806 | 495.93 ppb | 86 |
| 21) Benzo(g,h,i)perylene | 15.824 | 276 | 1752374 | 506.28 ppb | 84 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF032.D
Vial: 3
Acq On : 28 Oct 2014 09:48
Operator: KVu
Sample : CSVF0E0807
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 5 ☑ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #AF0-002

Method File: SVF0E08 Tune File: LOWSIM Start Date/Time: 5/8/14 11:44 End Date/Time: 5/8/14 15:36

ANALYTICAL BATCH: SVF0E082

| Preparative Batch | Data File Name | Run ID | DF | Matrix S | Matrix W | Notes |
|---|---|---|---|---|---|---|
| NA | REF 011 | IBF0E0801 | 1 | | | |
| | 12 | DFTF0E0801 | | | | |
| | 13 | SVF0E08 1 | | | | 1000ppb |
| | 14 | 2 | | | | 500 |
| | 15 | 3 | | | | 100 |
| | 16 | 4 | | | | 80 |
| | 17 | 5 | | | | 40 |
| | 18 | 6 | | | | 20 |
| | 19 | ISVF0E081 | | | | ICV |
| SVD013LW | 20 | LOQ -11 | 1 | | X | |
| | 21 | LOD -11 | | | | |
| | 22 | SVD013WB | | | | |
| | 23 | D146-01 | 2 | | | Cyfirmation 8310 |
| | 24 | 02 | 2 | | | |
| | 25 | 03 | 2 | | | |
| | | KV 5/8/14 | | | | |

| Instrument No: | F0 |
|---|---|
| INITIAL CALIBRATION REFERENCE | |
| Date | 5/8/14 |
| ICAL ID | SVF0E08 |

| Standards | | |
|---|---|---|
| Name | ID | Conc. (mg/L) |
| DFTPP | SS2C-11-15-01 | 50 |
| INT. STD. | SS2B-10-37-03 | 2000 |
| ICV | SS2C-11-18-02 | 0.5 |
| DCC | SS2C-11-18-01 | 0.25-1 |
| BENZIDINE | 01 | |
| APP 9 | KV 5/8/14 | |
| APP 9 ADD | | |
| | | |
| | | |

| Solvent | ID |
|---|---|
| $CH_2Cl_2$ | |

| DATA FILE | 14E08 |
|---|---|

| Electronic Data Archival | |
|---|---|
| Location | Date |
| HPCHEM_SVOA/TOF0 | |

Comments:

Analyzed By: KV
Date Disposed: 5/9/14
Disposed By: KV

This page is checked during data review.

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EMAX LABORATORIES, INC.

# ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 5 ☐ EMAX-8270D Rev. No. 1 ☑ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AF0-003

Method File: SVF0 E08 Tune File: Low Sim Start Date/Time: 10/28/14 9:33 End Date/Time: 10/28/14 14:22

ANALYTICAL BATCH: SVF0E0807

| Preparative Batch | Data File Name | Run ID | DF | Matrix S | Matrix W | Notes |
|---|---|---|---|---|---|---|
| | RJF030 | IBF0E0807 | | | | |
| | 031 | DFTF0E0807 | | | | |
| | 032 | CSVF0E0807 | | | | |
| SVJ034W | 033 | SVJ034WB | 1 | | X | |
| | 034 | WL | | | | |
| | 035 | WC | | | | |
| | 036 | 14J130-01 | | | | |
| | 037 | 02 | | | | |
| | 038 | 14J144-01 | | | | |
| | 039 | 01M | | | | |
| | 040 | 01S | | | | |
| | | | | | | DJ 10/28/14 |

| Instrument No: | F0 |
|---|---|
| INITIAL CALIBRATION REFERENCE | |
| Date | 5/8/14 |
| ICAL ID | SVF0 E08 |
| Standards | |
| Name | ID | Conc. (mg/L) |
| DFTPP | SS2C-11-25-03 | 50 |
| INT. STD. | SS2B-10-47-02 | 2000 |
| ICV | | |
| DCC | SS2C-11-28-01 | 0.5 |
| BENZIDINE | | |
| APP 9 | | |
| APP 9 ADD | | |
| | | |
| | | |
| Solvent | ID | |
| $CH_2Cl_2$ | 54184 | |
| DATA FILE | 14J28 | |
| Electronic Data Archival | | |
| Location | Date | |
| HPCHEM_SVOA/TOF0 | | |

Micropipette ID: ☑ PO97A-~~02~~ 01 VV 10/28/14
☐ PO97A-03
☐ PO00-01

Comments: Naphthalene 15 ppb

Syringe ID: 4997666-1
Analyzed By: VV
Date Disposed: 10/29/14
Disposed By: DJ

This page is checked during data review.

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# EXTRACTION LOGS

EMAX LABORATORIES, INC.

# EXTRACTION LOG
*for*
# SEMIVOLATILES

| SOP | Rev. # |
|---|---|
| ☑ EMAX-3520 | 5 |
| ☐ EMAX-3540 | 2 |
| ☐ EMAX-3546 | 0 |
| ☐ EMAX-3550 | 4 |
| ☐ EMAX-3580 | 2 |
| ☐ EMAX-625 | 1 |

**Note:** For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

**Comments:**

**Book #:** ESV-082
**Preparation Batch:** SWJ034W
**Matrix:** WATER
**Micropipette ID:** 1000µl: PE00-04
**Micropipette ID:** 100µl: PE97C-03

| Standards | ID | Amount Added (ml) |
|---|---|---|
| Surrogate | SS2A-06-348 | 0.010 |
| LCS (2ppm SIM ultralow) | SS2A-06-347 | 0.25 |
| LCS/MS | | |
| LCS/MS | | |
| LCS/MS | | |

| Reagent | Lot# / ID |
|---|---|
| $CH_2Cl_2$ | 54184 |
| $Na_2SO_4$ | SWIB-002-02-14 |
| $H_2SO_4$ | — |
| NaOH | SPIB-06-77-04 |
| Silica Sand | |
| Silica Gel | |
| Reagent Water | SWIA-005-08-22 |
| Residual Chlorine Strip | 40719 |
| pH Strip | HC421273 |
| Filter Paper | 5873228 |

| Lab Sample ID | Sonicator # | Cell # | Concentrator # |
|---|---|---|---|
| SWJ034WB | | | 1 |
| WL | | | 1 |
| WC | | | 1 |
| J130-01 | 10/27/14 | | 1 |
| -02 | | | 1 |
| J144-01 | | | 1 |
| ~~-01D~~ | | | 1 |
| -01M | | | 1 |
| -01S | | | 1 |

| TUNING | |
|---|---|
| Sonicator # | Reading |
| | |
| | |
| | |
| | |

| Concentrator | Water Bath Temperature Setting (°C) | Thermometer Reading (°C) |
|---|---|---|
| 1 | 35 | 35 |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |

Thermometer ID = SVOC-T1

Prepared By: JM  Witnessed By: MJ
Standard Added By: JM  Checked By: ML
Extract Received By: DJ 10/24/14  Location: VED3-01
Disposed By:  Disposed On:

FileID: SVJ034W

EMAX LABORATORIES, INC.

# EXTRACTION LOG FOR SEMIVOLATILES

| PrepBatchID | LabSampleID | Aliquot | Unit | DateTime | Ve(ml) | ExpAmt | ExpVe(ml) | PrepFctr | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 14SVJ034W01 | SVJ034WB | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | |
| 14SVJ034W02 | SVJ034WL | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | SIM ULTRA LOW |
| 14SVJ034W03 | SVJ034WC | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | SIM ULTRA LOW |
| 14SVJ034W04 | J130-01 | 1040 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 0.96 | |
| 14SVJ034W05 | J130-02 | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | |
| 14SVJ034W06 | J144-01 | 940 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1.06 | |
| 14SVJ034W07 | J144-01M | 900 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1.11 | SIM ULTRA LOW |
| 14SVJ034W08 | J144-01S | 1020 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 0.98 | SIM ULTRA LOW |

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 10/23/14 10:00

☐ pHAdj(≤2) @

Prepared By: JMuert

☑ Extraction Ended @ 10/24/14 5:00

☑ pHAdj(≥11) @ 10/23/14 15:00

Checked By: ML

Date 10/24/14

Comments:

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 14J130

CASE NARRATIVE

Client : BATTELLE

Project : RED HILL PHASE 1B

SDG : 14J130

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of two (2) water samples were received on 10/21/14 for TPH analysis, Method SW3520C/8015B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 and project SAP August 2014.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for DSJ030WL/Y were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

The chromatograms of Samples J130-01 and J130-02 contain dominant peaks that do not resemble the petroleum hydrocarbon pattern. These peaks were removed per Client's instructions after reviewing the TIC search of the TPH extract (see Appendix).

**Revised Report**

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : BATTELLE
Project : RED HILL PHASE 1B

SDG NO. : 14J130
Instrument ID : GCT105

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | DSJ030WB | 1 | NA | 10/23/1402:26 | 10/22/1416:45 | LJ22039A | LJ22037A | DSJ030W | Method Blank |
| LCS1W | DSJ030WL | 1 | NA | 10/23/1402:43 | 10/22/1416:45 | LJ22040A | LJ22037A | DSJ030W | Lab Control Sample (LCS) |
| LCD1W | DSJ030WY | 1 | NA | 10/23/1416:15 | 10/22/1416:45 | LJ22078A | LJ22073A | DSJ030W | LCS Duplicate |
| RHMW07-GW-01 | J130-01 | 1.04 | NA | 10/23/1404:08 | 10/22/1416:45 | LJ22045A | LJ22037A | DSJ030W | Field Sample |
| RHMW07-GW-01FD | J130-02 | 1.03 | NA | 10/23/1404:26 | 10/22/1416:45 | LJ22046A | LJ22037A | DSJ030W | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/20/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/21/14 |
| Batch No. | : 14J130 | Date Extracted: | 10/22/14 16:45 |
| Sample ID: | RHMW07-GW-01 | Date Analyzed: | 10/23/14 04:08 |
| Lab Samp ID: | J130-01 | Dilution Factor: | 1.04 |
| Lab File ID: | LJ22045A | Matrix : | WATER |
| Ext Btch ID: | DSJ030W | % Moisture : | NA |
| Calib. Ref.: | LJ22037A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | 0.057J | 0.10 | 0.052 | 0.078 |
| ORO | ND | 0.10 | 0.052 | 0.078 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.750 | 1.040 | 72.1 | 60-130 |
| HEXACOSANE | 0.229 | 0.2600 | 88.2 | 60-130 |

| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

*: Discrete peak(s) excluded

Revised Report

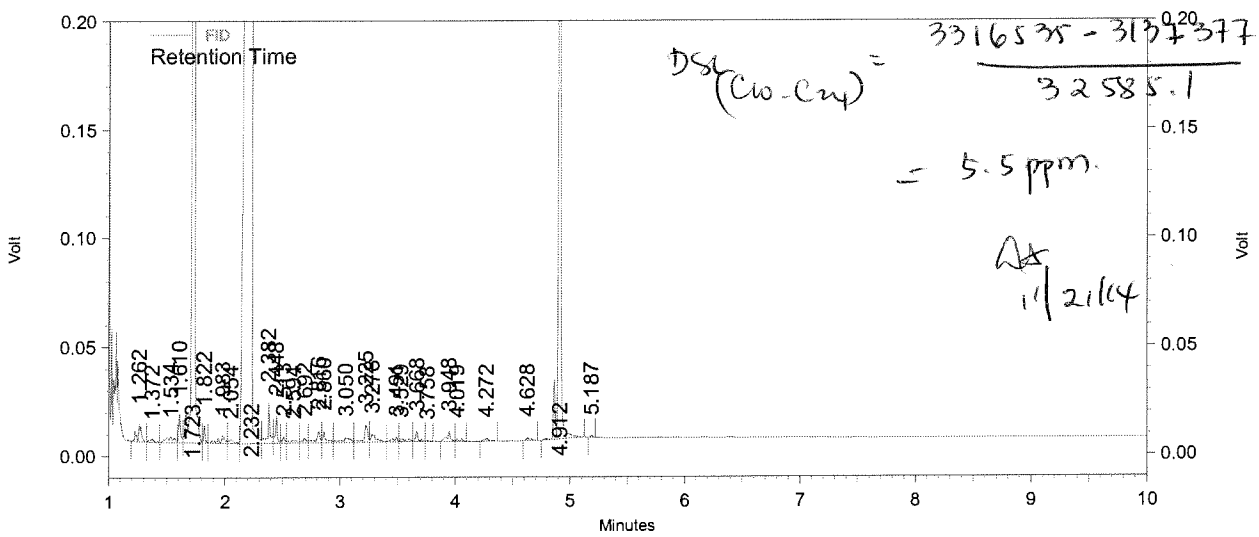
**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\EZCHROM_GC6890N\14CHROM\LJ22\LJ22045.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\EZCHROM_GC6890N\14SEQUENCE\LJ22.seq** |
| **Sample ID** | **: 14J130-01** |
| **Acquired** | **: 10/23/14 04:08:50** |
| **Printed** | **: 11/21/14 12:18:34** |
| **User** | **: LArzad** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.723 | 1289512 | 17891.93900 | 72.072 |
| HEXACOSANE | 4.912 | 552675 | 25061.64131 | 22.053 |
| DIESEL(TOTAL) | | 3373892 | 33399.78271 | 101.015 |
| DIESEL(C10-C24) | | 3316535 ✓ | 32585.09943 | 101.781 |
| M.OIL(C24-C36) | | 0 | 20980.20150 | 0.000 |
| Totals | | 8532614 | | 296.921 |

| | | | | |
|---|---|---|---|---|
| DIS. PK.(2.232) | | 3137377 ✓ | 0.00000 | 0.000 |
| Totals | | 3137377 | | 0.000 |




$DSL_{(C10-C24)} = \frac{3316535 - 3137377}{32585.1}$

$= 5.5$ ppm.

AA 11/21/14

**Revised Report**

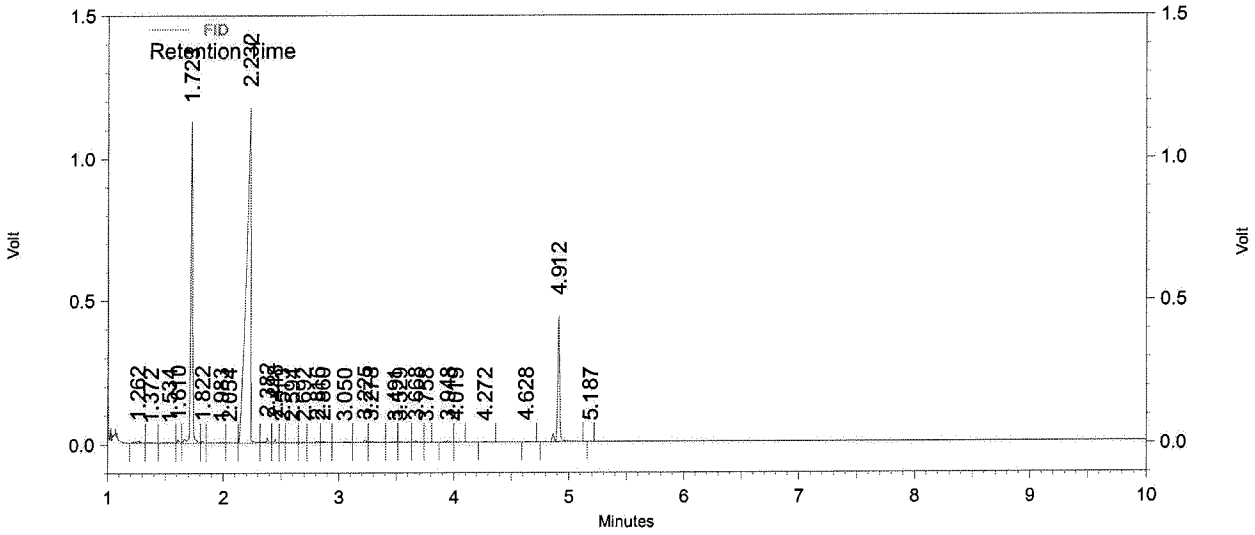
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22045.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: 14J130-01** |
| **Acquired** | **: 10/23/14 04:08:50** |
| **Printed** | **: 10/23/14 15:08:06** |
| **User** | **: KLinn** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.723 | 1289512 | 17891.93900 | 72.072 |
| HEXACOSANE | 4.912 | 552675 | 25061.64131 | 22.053 |
| DIESEL(TOTAL) | | 3373892 | 33399.78271 | 101.015 |
| DIESEL(C10-C24) | | 3316535 | 32585.09943 | 101.781 |
| M.OIL(C24-C36) | | 0 | 20980.20150 | 0.000 |
| Totals | | 8532614 | | 296.921 |




**Software Version: Version 3.3.1**

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/20/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/21/14 |
| Batch No. | : 14J130 | Date Extracted: | 10/22/14 16:45 |
| Sample ID: | RHMW07-GW-01FD | Date Analyzed: | 10/23/14 04:26 |
| Lab Samp ID: | J130-02 | Dilution Factor: | 1.03 |
| Lab File ID: | LJ22046A | Matrix : | WATER |
| Ext Btch ID: | DSJ030W | % Moisture : | NA |
| Calib. Ref.: | LJ22037A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | 0.066J | 0.10 | 0.052 | 0.077 |
| ORO | ND | 0.10 | 0.052 | 0.077 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.703 | 1.030 | 68.2 | 60-130 |
| HEXACOSANE | 0.206 | 0.2575 | 79.9 | 60-130 |

| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

*: Discrete peak(s) excluded

Revised Report

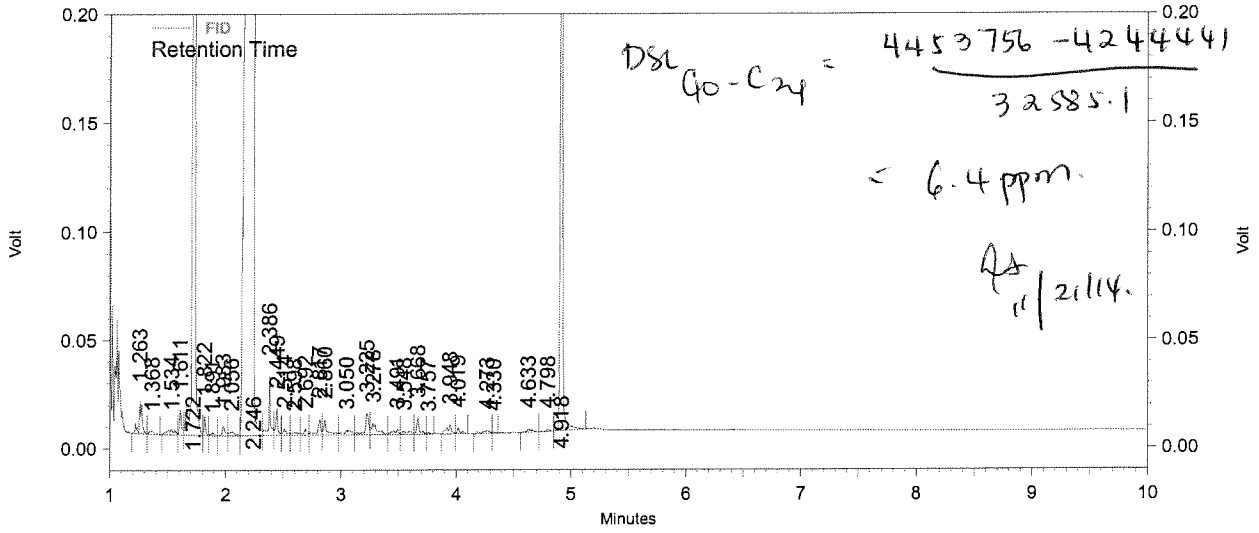
**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\EZCHROM_GC6890N\14CHROM\LJ22\LJ22046.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\EZCHROM_GC6890N\14SEQUENCE\LJ22.seq** |
| **Sample ID** | **: 14J130-02** |
| **Acquired** | **: 10/23/14 04:26:02** |
| **Printed** | **: 11/21/14 12:21:50** |
| **User** | **: LArzad** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.722 | 1220308 | 17891.93900 | 68.204 |
| HEXACOSANE | 4.918 | 500427 | 25061.64131 | 19.968 |
| DIESEL(TOTAL) | | 4526200 | 33399.78271 | 135.516 |
| DIESEL(C10-C24) | | 4453756 | 32585.09943 | 136.681 |
| M.OIL(C24-C36) | | 2472 | 20980.20150 | 0.118 |
| Totals | | 10703163 | | 360.487 |

| | | | | |
|---|---|---|---|---|
| DIS. PK.(2.246) | | 4244441 | 0.00000 | 0.000 |
| Totals | | 4244441 | | 0.000 |




$DSL_{C10-C24} = \frac{4453756 - 4244441}{32585.1}$

$= 6.4$ ppm.

11/21/14.

**Revised Report**

**Software Version: Version 3.3.1**

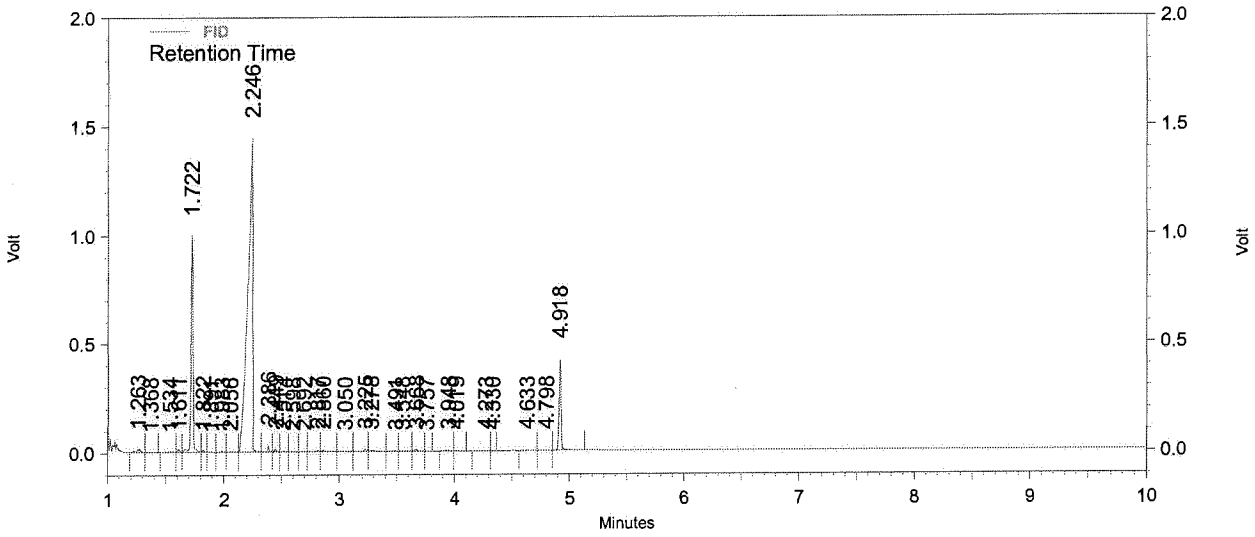
5008

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22046.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: 14J130-02** |
| **Acquired** | **: 10/23/14 04:26:02** |
| **Printed** | **: 10/23/14 15:08:24** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.722 | 1220308 | 17891.93900 | 68.204 |
| HEXACOSANE | 4.918 | 500427 | 25061.64131 | 19.968 |
| DIESEL(TOTAL) | | 4526200 | 33399.78271 | 135.516 |
| DIESEL(C10-C24) | | 4453756 | 32585.09943 | 136.681 |
| M.OIL(C24-C36) | | 2472 | 20980.20150 | 0.118 |
| Totals | | 10703163 | | 360.487 |




**Software Version: Version 3.3.1**

# QC SUMMARIES

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 10/22/14 |
| Batch No. | : 14J130 | Date Extracted: | 10/22/14 16:45 |
| Sample ID: | MBLK1W | Date Analyzed: | 10/23/14 02:26 |
| Lab Samp ID: | DSJ030WB | Dilution Factor: | 1 |
| Lab File ID: | LJ22039A | Matrix : | WATER |
| Ext Btch ID: | DSJ030W | % Moisture : | NA |
| Calib. Ref.: | LJ22037A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | ND | 0.10 | 0.050 | 0.075 |
| ORO | ND | 0.10 | 0.050 | 0.075 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.746 | 1.000 | 74.6 | 60-130 |
| HEXACOSANE | 0.197 | 0.2500 | 78.9 | 60-130 |

| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J130
METHOD: SW3520C/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | DSJ030WB | DSJ030WL | DSJ030WY | | |
| LAB FILE ID: | LJ22039A | LJ22040A | LJ22078A | | |
| DATE EXTRACTED: | 10/22/1416:45 | 10/22/1416:45 | 10/22/1416:45 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 10/23/1402:26 | 10/23/1402:43 | 10/23/1416:15 | DATE RECEIVED: | 10/22/14 |
| PREP. BATCH: | DSJ030W | DSJ030W | DSJ030W | | |
| CALIB. REF: | LJ22037A | LJ22037A | LJ22073A | | |

ACCESSION:

| PARAMETER | BLNK RSLT (mg/L) | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO | ND | 5.00 | 3.21 | 64 | 5.00 | 4.00 | 80 | 22 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 1.00 | 0.713 | 71 | 1.00 | 0.893 | 89 | 60-130 |
| Hexacosane | 0.250 | 0.190 | 76 | 0.250 | 0.238 | 95 | 60-130 |

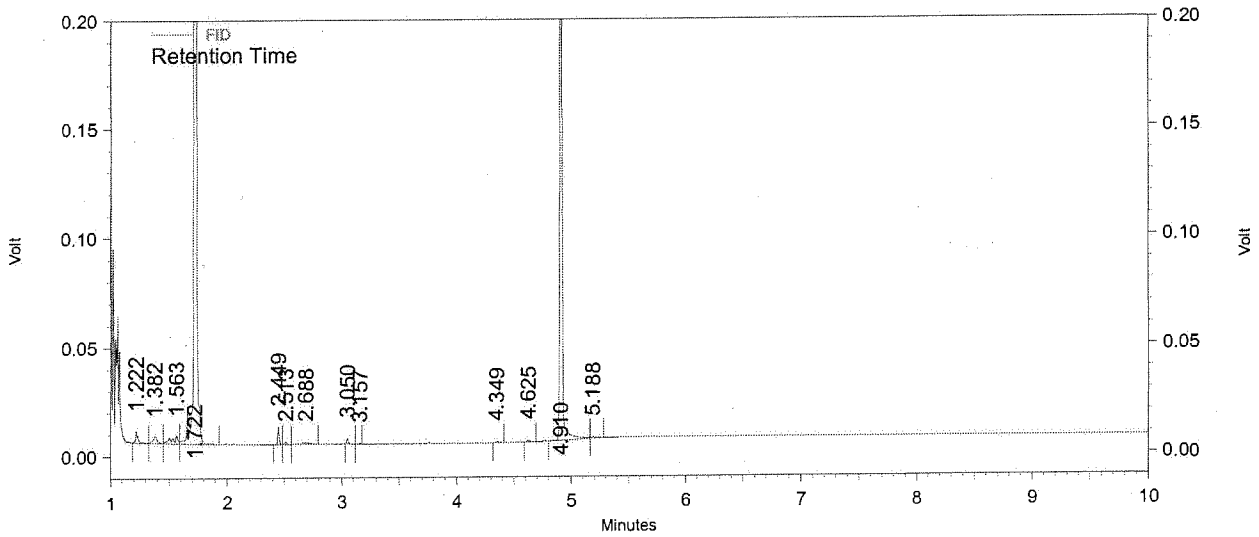
# QC DATA

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22039.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: DSJ030WB** |
| **Acquired** | **: 10/23/14 02:26:04** |
| **Printed** | **: 10/23/14 15:15:23** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.722 | 1335056 | 17891.93900 | 74.618 |
| HEXACOSANE | 4.910 | 494417 | 25061.64131 | 19.728 |
| DIESEL(TOTAL) | | 48302 | 33399.78271 | 1.446 |
| DIESEL(C10-C24) | | 18882 | 32585.09943 | 0.579 |
| M.OIL(C24-C36) | | 0 | 20980.20150 | 0.000 |
| Totals | | 1896657 | | 96.371 |



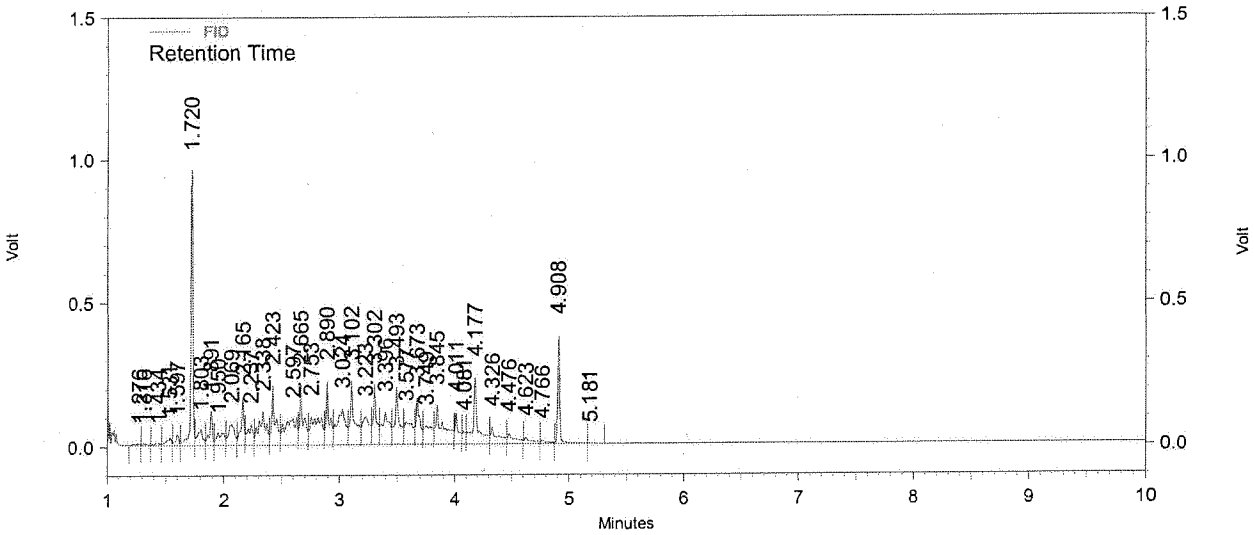

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

**Inst. Name:** : GCT-105 (Offline)
**File** : D:\Projects\EZC331\Data\LJ22\LJ22040.dat
**Method** : D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met
**Sequence:** : D:\Projects\EZC331\Sequence\LJ22.seq
**Sample ID** : DSJ030WL
**Acquired** : 10/23/14 02:43:05
**Printed** : 10/23/14 15:15:39
**User** : KLinn

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.720 | 1275501 | 17891.93900 | 71.289 |
| HEXACOSANE | 4.908 | 475562 | 25061.64131 | 18.976 |
| DIESEL(TOTAL) | | 11108345 | 33399.78271 | 332.587 |
| DIESEL(C10-C24) | | 10455801 | 32585.09943 | 320.877 |
| M.OIL(C24-C36) | | 44248 | 20980.20150 | 2.109 |
| Totals | | 23359457 | | 745.838 |



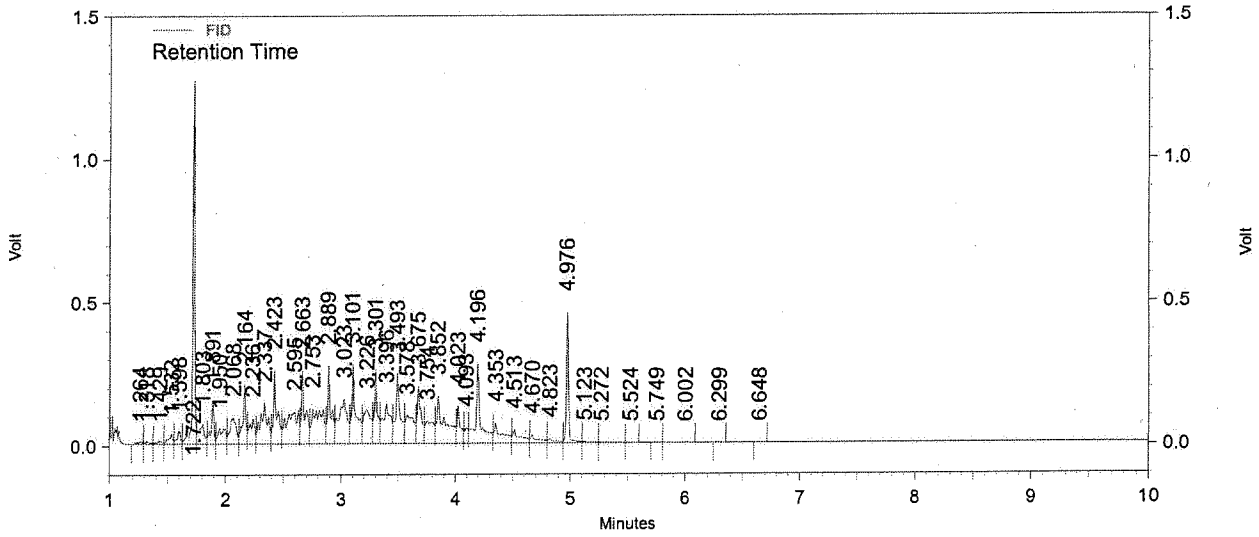

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22078.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: DSJ030WY** |
| **Acquired** | **: 10/23/14 16:15:06** |
| **Printed** | **: 10/27/14 11:36:33** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.722 | 1597599 | 17891.93900 | 89.292 |
| HEXACOSANE | 4.976 | 595518 | 25061.64131 | 23.762 |
| DIESEL(TOTAL) | | 13877311 | 33399.78271 | 415.491 |
| DIESEL(C10-C24) | | 13035837 | 32585.09943 | 400.055 |
| M.OIL(C24-C36) | | 83639 | 20980.20150 | 3.987 |
| Totals | | 29189904 | | 932.586 |




**Software Version: Version 3.3.1**

# INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16029A 09/17/14 09:01
LFID & Datetime: LI16030A 09/17/14 09:19
LFID & Datetime: LI16031A 09/17/14 09:36
LFID & Datetime: LI16032A 09/17/14 09:53
LFID & Datetime: LI16033A 09/17/14 10:10
LFID & Datetime: LI16034A 09/17/14 10:27
LFID & Datetime: LI16035A 09/17/14 10:45
CONC UNIT: ppm

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 1.00X | 2.00X | 10.00X | 20.00X | 100.00X | 300.00X | 600.00X | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | 5.00 | 34501 | 36051 | 34544 | 34578 | 33031 | 30015 | 31078 | 33399.8 | 6.5 |
| DIESEL(C10-C24) | 5.00 | 34041 | 35236 | 33714 | 33778 | 32148 | 29089 | 30089 | 32585.1 | 6.9 |
| DIESEL(C10-C28) | 5.00 | 34041 | 35323 | 33752 | 33816 | 32216 | 29153 | 30172 | 32639.0 | 6.9 |
| DIESEL(C10-C25) | 5.00 | 34041 | 35262 | 33739 | 33805 | 32203 | 29127 | 30132 | 32615.5 | 6.9 |
| DIESEL(C9-C24) | 5.00 | 34501 | 35965 | 34209 | 34251 | 32643 | 29607 | 30625 | 33114.4 | 6.9 |
| DIESEL(C9-C25) | 5.00 | 34501 | 35990 | 34234 | 34278 | 32698 | 29645 | 30668 | 33144.9 | 6.9 |
| DIESEL(C10-C36) | 5.00 | 34041 | 35323 | 33781 | 33835 | 32223 | 29157 | 30182 | 32648.9 | 6.9 |
| DIESEL(C10-C40) | 5.00 | 34041 | 35323 | 33781 | 33835 | 32223 | 29157 | 30182 | 32648.9 | 6.9 |
| **SURROGATE** | **X** | **0.00X** | **1.00X** | **2.00X** | **3.00X** | **4.00X** | **5.00X** | **11.00X** | **MEAN** | **%RSD** |
| BROMOBENZENE | 20.00 | 0 | 17409 | 16798 | 16686 | 18433 | 19091 | 18934 | 17891.9 | 6.0 |
| HEXACOSANE | 5.00 | 0 | 25128 | 24649 | 24470 | 25467 | 24871 | 25786 | 25061.6 | 2.0 |

DSD5I16.MET

09/19/14

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16029A 09/17/14 09:01
LFID & Datetime: LI16030A 09/17/14 09:19
LFID & Datetime: LI16031A 09/17/14 09:36
LFID & Datetime: LI16032A 09/17/14 09:53
LFID & Datetime: LI16033A 09/17/14 10:10
LFID & Datetime: LI16034A 09/17/14 10:27
LFID & Datetime: LI16035A 09/17/14 10:45

| COMPOUND | RT OF STANDARDS (MIN) 1.0X | 2.0X | 10.0X | 20.0X | 100.0X | 300.0X | 600.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C24) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C28) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C25) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C9-C24) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C9-C25) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C40) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SURROGATE | 0.0X | 1.0X | 2.0X | 3.0X | 4.0X | 5.0X | 11.0X | RT | FROM | TO | WIDTH |
| BROMOBENZENE | 0.000 | 1.730 | 1.732 | 1.733 | 1.732 | 1.734 | 1.737 | 1.733 | 1.730 | 1.736 | 0.003 |
| HEXACOSANE | 0.000 | 5.018 | 5.037 | 5.056 | 5.076 | 5.088 | 5.102 | 5.063 | 5.015 | 5.111 | 0.048 |

DSD5I16.MET

AJ
09/19/14

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16037A 09/17/14 11:19
LFID & Datetime: LI16038A 09/17/14 11:37
LFID & Datetime: LI16039A 09/17/14 11:54
LFID & Datetime: LI16040A 09/17/14 12:11
LFID & Datetime: LI16041A 09/17/14 12:28
LFID & Datetime: LI16042A 09/17/14 12:45
CONC UNIT: ppm

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 2.00X | 10.00X | 20.00X | 100.00X | 300.00X | 600.00X | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | 5.00 | 36105 | 33167 | 33441 | 32566 | 30501 | 28904 | 32447.4 | 7.7 |
| M.OIL(C18-C36) | 5.00 | 25340 | 25940 | 25892 | 24946 | 23441 | 21203 | 24460.1 | 7.5 |
| M.OIL(C24-C36) | 5.00 | 22686 | 22554 | 22251 | 21092 | 19659 | 17638 | 20980.2 | 9.5 |
| M.OIL(C24-C40) | 5.00 | 22686 | 22554 | 22251 | 21280 | 19659 | 17980 | 21068.4 | 9.0 |

DSD5I16.MET

AS
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INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16037A 09/17/14 11:19
LFID & Datetime: LI16038A 09/17/14 11:37
LFID & Datetime: LI16039A 09/17/14 11:54
LFID & Datetime: LI16040A 09/17/14 12:11
LFID & Datetime: LI16041A 09/17/14 12:28
LFID & Datetime: LI16042A 09/17/14 12:45

| COMPOUND | RT OF STANDARDS (MIN) 2.0X | 10.0X | 20.0X | 100.0X | 300.0X | 600.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C18-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C24-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C24-C40) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

DSD5I16.MET

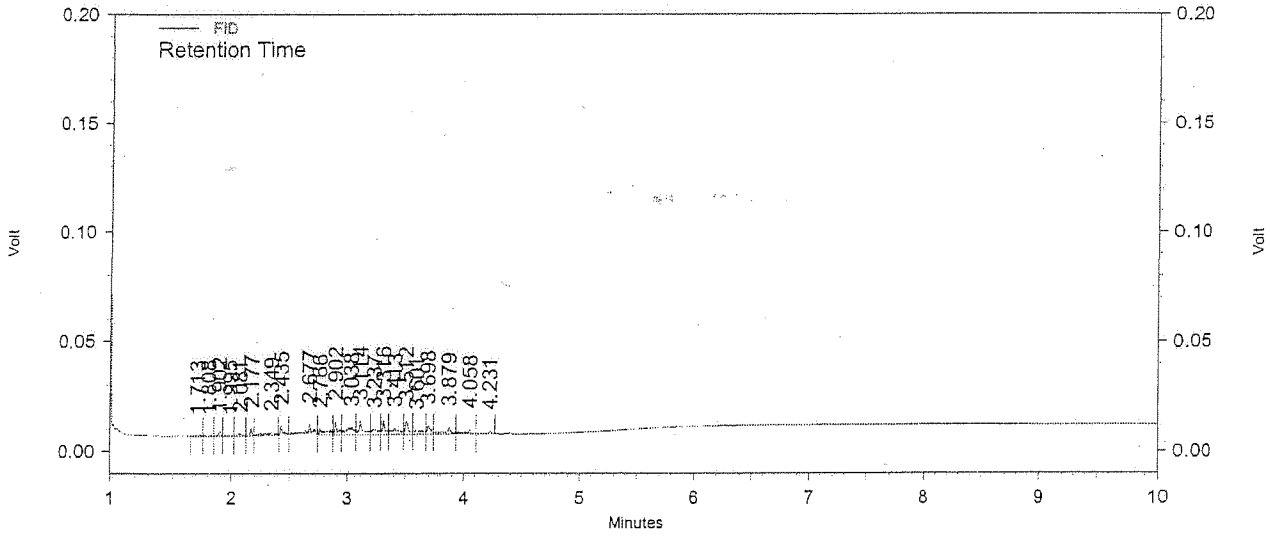
RA
09/19/14

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16029.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1601 DSL 5PPM |
| Acquired | : 09/17/14 09:01:57 |
| Printed | : 09/17/14 16:55:46 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| DIESEL(TOTAL) | | 172506 | 33399.78271 | 5.000 CAL |
| DIESEL(C10-C24) | | 170205 | 32585.09943 | 5.000 CAL |
| DIESEL(C10-C28) | | 170205 | 32639.02829 | 5.000 CAL |
| DIESEL(C10-C25) | | 170205 | 32615.51857 | 5.000 CAL |
| DIESEL(C9-C24) | | 172506 | 33114.42838 | 5.000 CAL |
| DIESEL(C9-C25) | | 172506 | 33144.84752 | 5.000 CAL |
| DIESEL(C10-C36) | | 170205 | 32648.86105 | 5.000 CAL |
| DIESEL(C10-C40) | | 170205 | 32648.86105 | 5.000 CAL |
| Totals | | 1368543 | | 40.000 CAL |




DS 09/19/14

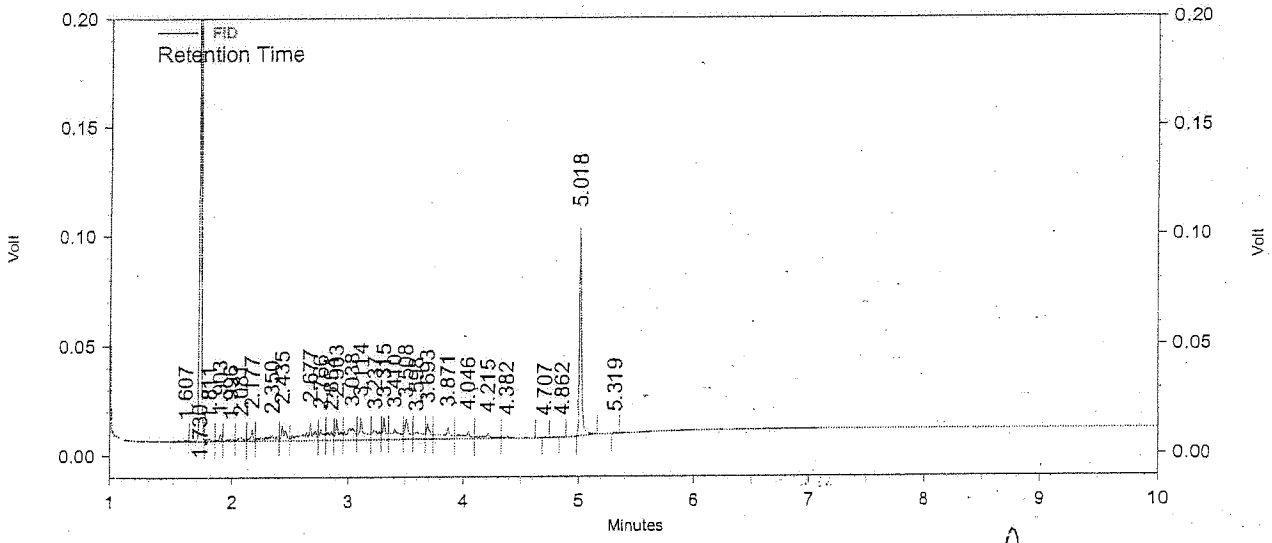
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16030.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1602 DSL 10/20/5PPM |
| Acquired | : 09/17/14 09:19:04 |
| Printed | : 09/17/14 16:56:22 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.730 | 348178 | 17891.93900 | 20.000 CAL |
| HEXACOSANE | 5.018 | 125638 | 25061.64131 | 5.000 CAL |
| DIESEL(TOTAL) | | 360512 | 33399.78271 | 10.000 CAL |
| DIESEL(C10-C24) | | 352364 | 32585.09943 | 10.000 CAL |
| DIESEL(C10-C28) | | 353230 | 32639.02829 | 10.000 CAL |
| DIESEL(C10-C25) | | 352618 | 32615.51857 | 10.000 CAL |
| DIESEL(C9-C24) | | 359646 | 33114.42838 | 10.000 CAL |
| DIESEL(C9-C25) | | 359900 | 33144.84752 | 10.000 CAL |
| DIESEL(C10-C36) | | 353230 | 32648.86105 | 10.000 CAL |
| DIESEL(C10-C40) | | 353230 | 32648.86105 | 10.000 CAL |
| Totals | | 3318546 | | 105.000 CAL |

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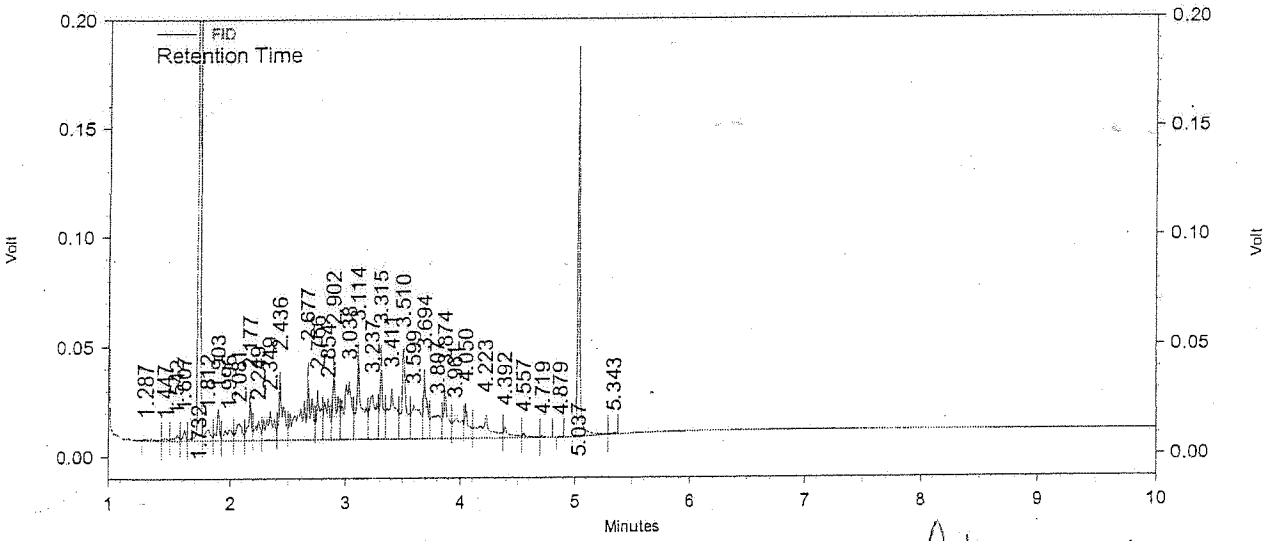
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16031.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1603 DSL 50/40/10PPM |
| Acquired | : 09/17/14 09:36:14 |
| Printed | : 09/17/14 16:58:34 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.732 | 671920 | 17891.93900 | 40.000 CAL |
| HEXACOSANE | 5.037 | 246485 | 25061.64131 | 10.000 CAL |
| DIESEL(TOTAL) | | 1727179 | 33399.78271 | 50.000 CAL |
| DIESEL(C10-C24) | | 1685709 | 32585.09943 | 50.000 CAL |
| DIESEL(C10-C28) | | 1687596 | 32639.02829 | 50.000 CAL |
| DIESEL(C10-C25) | | 1686967 | 32615.51857 | 50.000 CAL |
| DIESEL(C9-C24) | | 1710453 | 33114.42838 | 50.000 CAL |
| DIESEL(C9-C25) | | 1711711 | 33144.84752 | 50.000 CAL |
| DIESEL(C10-C36) | | 1689059 | 32648.86105 | 50.000 CAL |
| DIESEL(C10-C40) | | 1689059 | 32648.86105 | 50.000 CAL |
| Totals | | 14506138 | | 450.000 CAL |

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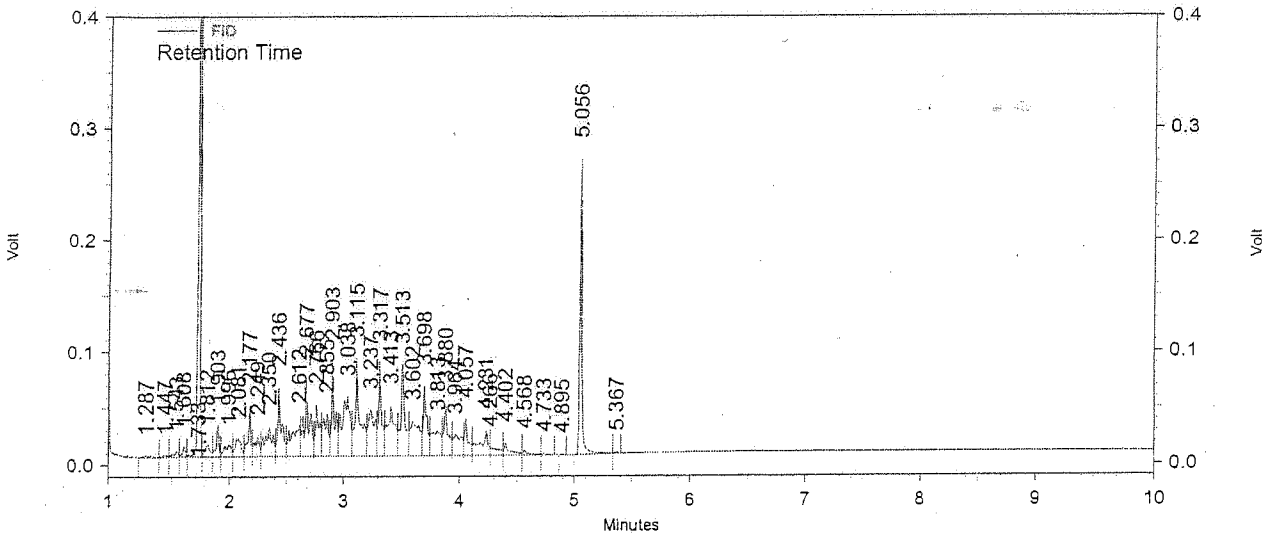
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16032.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1604 DSL 100/60/15PPM |
| Acquired | : 09/17/14 09:53:33 |
| Printed | : 09/17/14 16:58:44 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.733 | 1001186 | 17891.93900 | 60.000 CAL |
| HEXACOSANE | 5.056 | 367043 | 25061.64131 | 15.000 CAL |
| DIESEL(TOTAL) | | 3457812 | 33399.78271 | 100.000 CAL |
| DIESEL(C10-C24) | | 3377793 | 32585.09943 | 100.000 CAL |
| DIESEL(C10-C28) | | 3381578 | 32639.02829 | 100.000 CAL |
| DIESEL(C10-C25) | | 3380463 | 32615.51857 | 100.000 CAL |
| DIESEL(C9-C24) | | 3425081 | 33114.42838 | 100.000 CAL |
| DIESEL(C9-C25) | | 3427751 | 33144.84752 | 100.000 CAL |
| DIESEL(C10-C36) | | 3383510 | 32648.86105 | 100.000 CAL |
| DIESEL(C10-C40) | | 3383510 | 32648.86105 | 100.000 CAL |
| Totals | | 28585727 | | 875.000 CAL |

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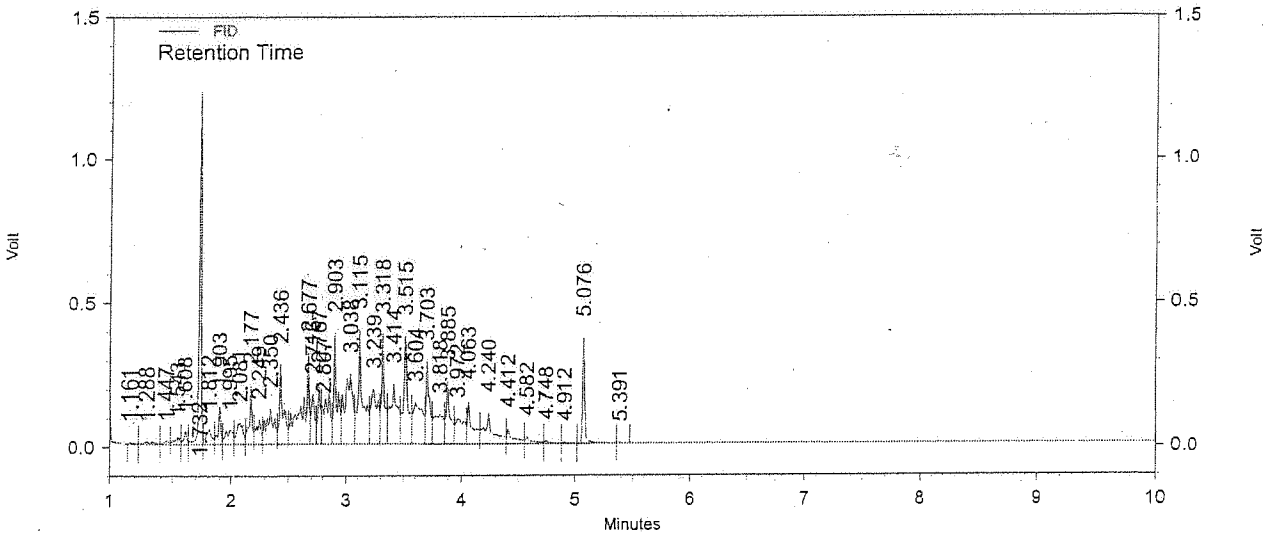
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16033.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1605 DSL 500/80/20PPM |
| Acquired | : 09/17/14 10:10:43 |
| Printed | : 09/17/14 16:58:54 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.732 | 1474677 | 17891.93900 | 80.000 CAL |
| HEXACOSANE | 5.076 | 509336 | 25061.64131 | 20.000 CAL |
| DIESEL(TOTAL) | | 16515495 | 33399.78271 | 500.000 CAL |
| DIESEL(C10-C24) | | 16073956 | 32585.09943 | 500.000 CAL |
| DIESEL(C10-C28) | | 16108086 | 32639.02829 | 500.000 CAL |
| DIESEL(C10-C25) | | 16101262 | 32615.51857 | 500.000 CAL |
| DIESEL(C9-C24) | | 16321629 | 33114.42838 | 500.000 CAL |
| DIESEL(C9-C25) | | 16348935 | 33144.84752 | 500.000 CAL |
| DIESEL(C10-C36) | | 16111304 | 32648.86105 | 500.000 CAL |
| DIESEL(C10-C40) | | 16111304 | 32648.86105 | 500.000 CAL |
| Totals | | 131675984 | | 4100.000 CAL |

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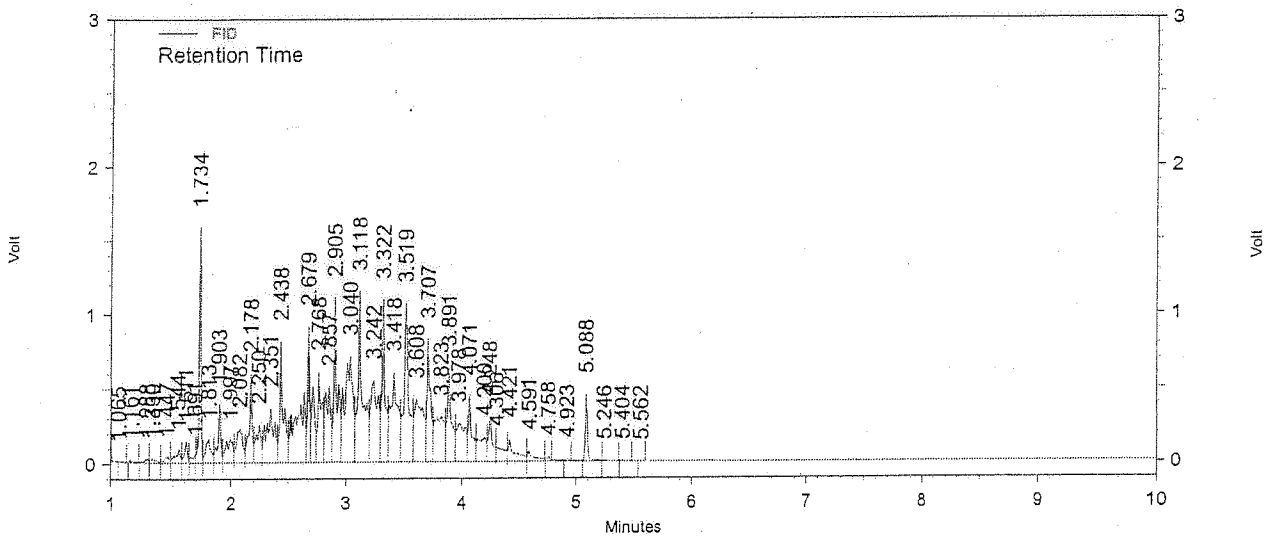
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16034.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1606 DSL 1500/100/25PPM |
| Acquired | : 09/17/14 10:27:59 |
| Printed | : 09/17/14 16:59:06 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.734 | 1909057 | 17891.93900 | 100.000 CAL |
| HEXACOSANE | 5.088 | 621784 | 25061.64131 | 25.000 CAL |
| DIESEL(TOTAL) | | 45022638 | 33399.78271 | 1500.000 CAL |
| DIESEL(C10-C24) | | 43633851 | 32585.09943 | 1500.000 CAL |
| DIESEL(C10-C28) | | 43729901 | 32639.02829 | 1500.000 CAL |
| DIESEL(C10-C25) | | 43690883 | 32615.51857 | 1500.000 CAL |
| DIESEL(C9-C24) | | 44410692 | 33114.42838 | 1500.000 CAL |
| DIESEL(C9-C25) | | 44467724 | 33144.84752 | 1500.000 CAL |
| DIESEL(C10-C36) | | 43735512 | 32648.86105 | 1500.000 CAL |
| DIESEL(C10-C40) | | 43735512 | 32648.86105 | 1500.000 CAL |
| Totals | | 354957554 | | 12125.000 CAL |

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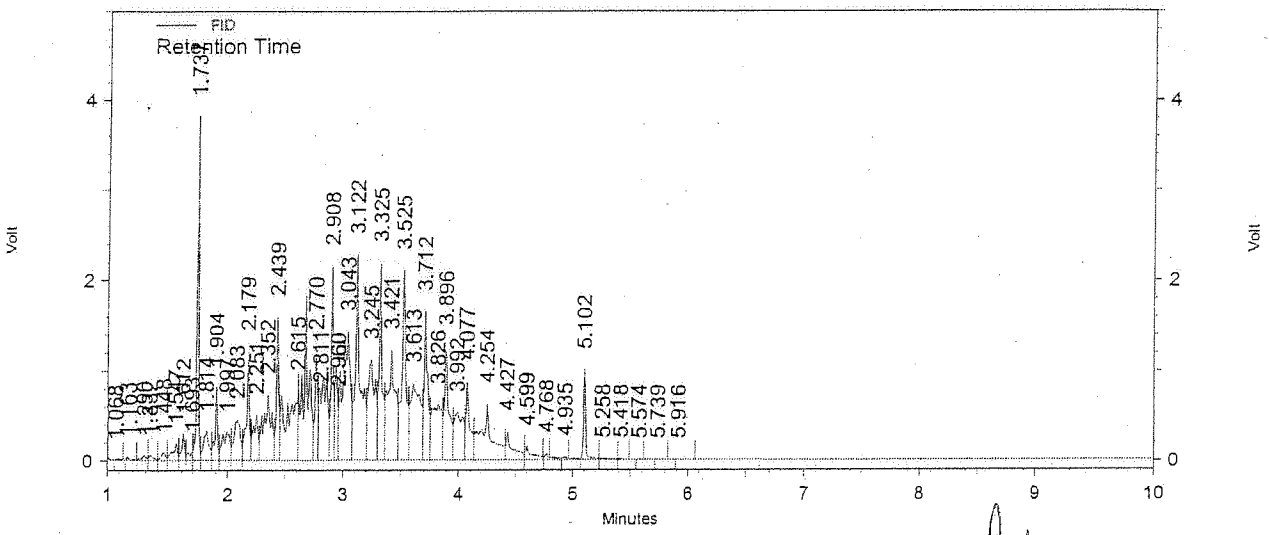
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16035.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1607 DSL 3000/220/55PPM |
| Acquired | : 09/17/14 10:45:13 |
| Printed | : 09/17/14 16:59:16 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.737 | 4165539 | 17891.93900 | 220.000 CAL |
| HEXACOSANE | 5.102 | 1418233 | 25061.64131 | 55.000 CAL |
| DIESEL(TOTAL) | | 93234891 | 33399.78271 | 3000.000 CAL |
| DIESEL(C10-C24) | | 90267120 | 32585.09943 | 3000.000 CAL |
| DIESEL(C10-C28) | | 90516176 | 32639.02829 | 3000.000 CAL |
| DIESEL(C10-C25) | | 90396242 | 32615.51857 | 3000.000 CAL |
| DIESEL(C9-C24) | | 91874828 | 33114.42838 | 3000.000 CAL |
| DIESEL(C9-C25) | | 92003950 | 33144.84752 | 3000.000 CAL |
| DIESEL(C10-C36) | | 90546394 | 32648.86105 | 3000.000 CAL |
| DIESEL(C10-C40) | | 90546394 | 32648.86105 | 3000.000 CAL |
| Totals | | 734969767 | | 24275.000 CAL |

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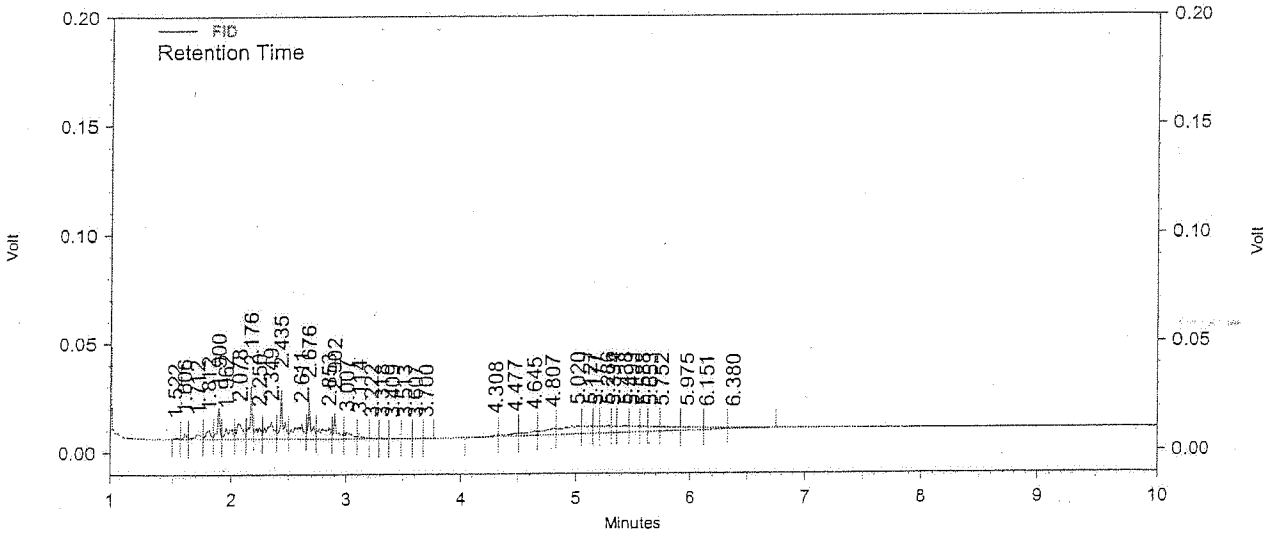
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16037.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1608 JP5/5W30 10/10PPM |
| Acquired | : 09/17/14 11:19:48 |
| Printed | : 09/17/14 16:46:23 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 361054 | 32447.41478 | 10.000 CAL |
| M.OIL(C18-C36) | | 253397 | 24460.06839 | 10.000 CAL |
| M.OIL(C24-C36) | | 226861 | 20980.20150 | 10.000 CAL |
| M.OIL(C24-C40) | | 226861 | 21068.39522 | 10.000 CAL |
| Totals | | 1068173 | | 40.000 CAL |

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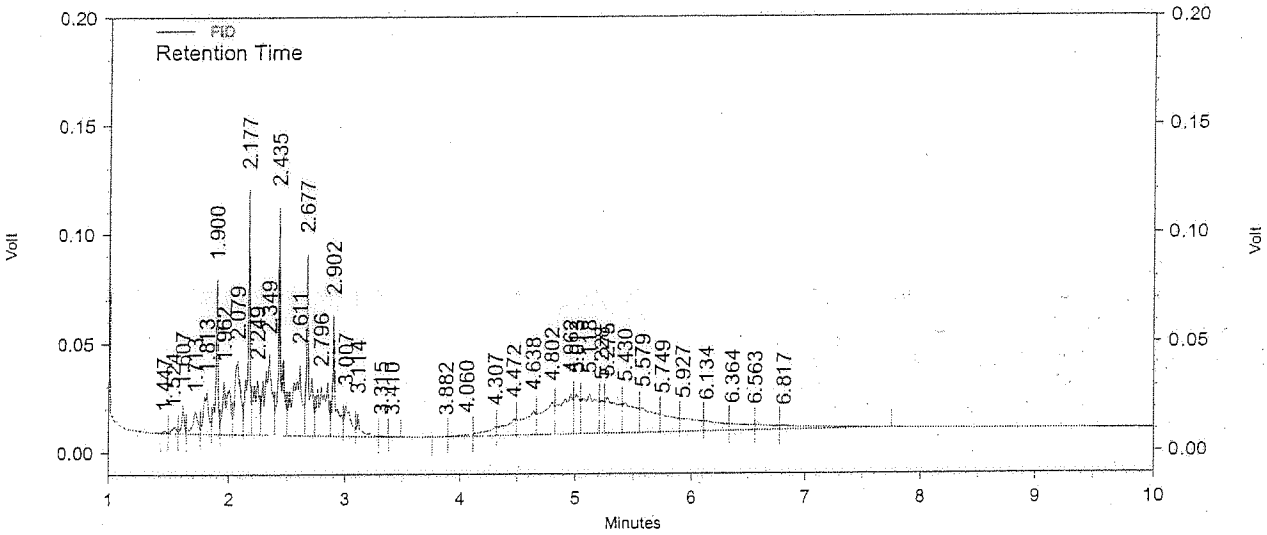
Software Version: Version 3.3.1

# METHOD 8015 by GC/FID
## EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16038.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1609 JP5/5W30 50/50PPM |
| Acquired | : 09/17/14 11:37:00 |
| Printed | : 09/17/14 16:46:31 |
| User | : KLinn |

### FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 1658372 | 32447.41478 | 50.000 CAL |
| M.OIL(C18-C36) | | 1296976 | 24460.06839 | 50.000 CAL |
| M.OIL(C24-C36) | | 1127709 | 20980.20150 | 50.000 CAL |
| M.OIL(C24-C40) | | 1127709 | 21068.39522 | 50.000 CAL |
| Totals | | 5210766 | | 200.000 CAL |

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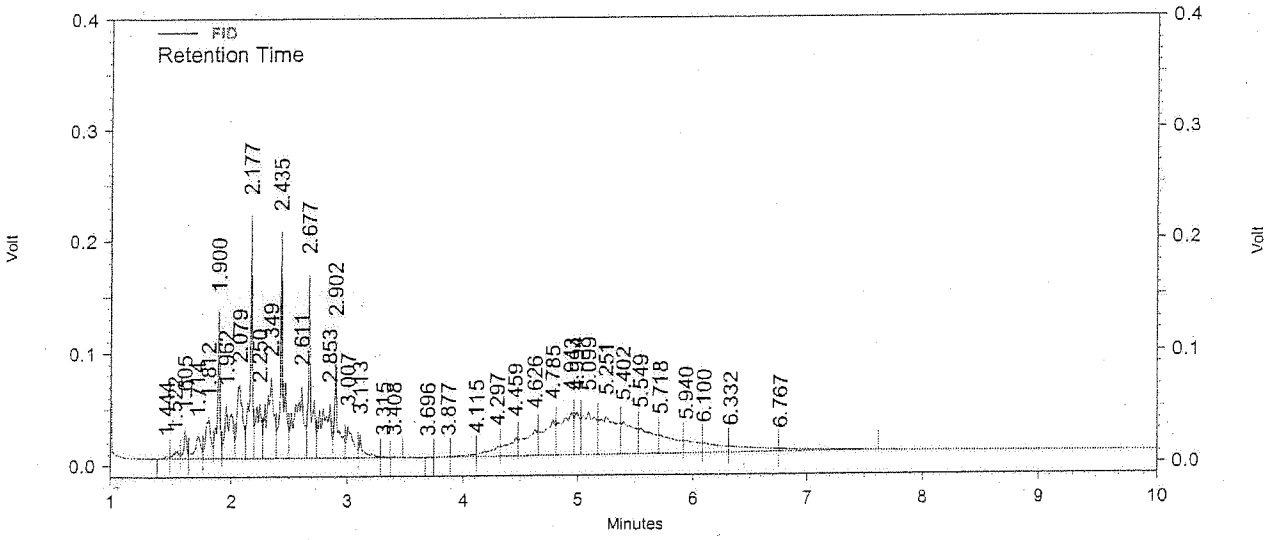
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16039.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1610 JP5/5W30 100/100PPM |
| Acquired | : 09/17/14 11:54:09 |
| Printed | : 09/17/14 16:46:42 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 3344126 | 32447.41478 | 100.000 CAL |
| M.OIL(C18-C36) | | 2589166 | 24460.06839 | 100.000 CAL |
| M.OIL(C24-C36) | | 2225133 | 20980.20150 | 100.000 CAL |
| M.OIL(C24-C40) | | 2225133 | 21068.39522 | 100.000 CAL |
| Totals | | 10383558 | | 400.000 CAL |

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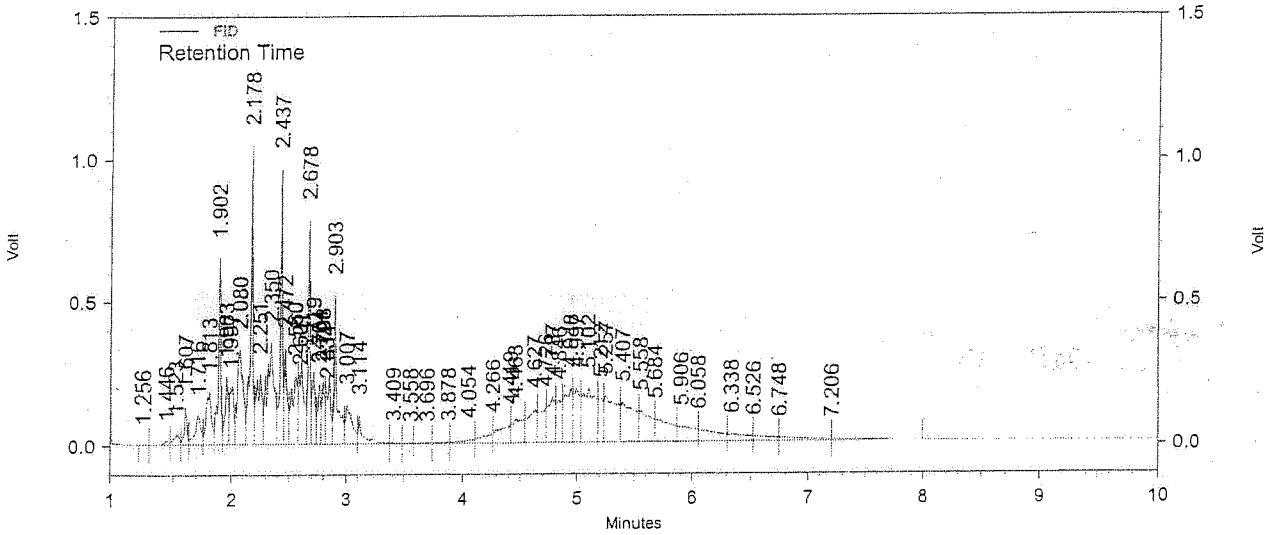
Software Version: Version 3.3.1

# METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16040.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1611 JP5/5W30 500/500PPM |
| Acquired | : 09/17/14 12:11:26 |
| Printed | : 09/17/14 16:46:53 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 16282801 | 32447.41478 | 500.000 CAL |
| M.OIL(C18-C36) | | 12472992 | 24460.06839 | 500.000 CAL |
| M.OIL(C24-C36) | | 10546163 | 20980.20150 | 500.000 CAL |
| M.OIL(C24-C40) | | 10640078 | 21068.39522 | 500.000 CAL |
| Totals | | 49942034 | | 2000.000 CAL |




09/19/14

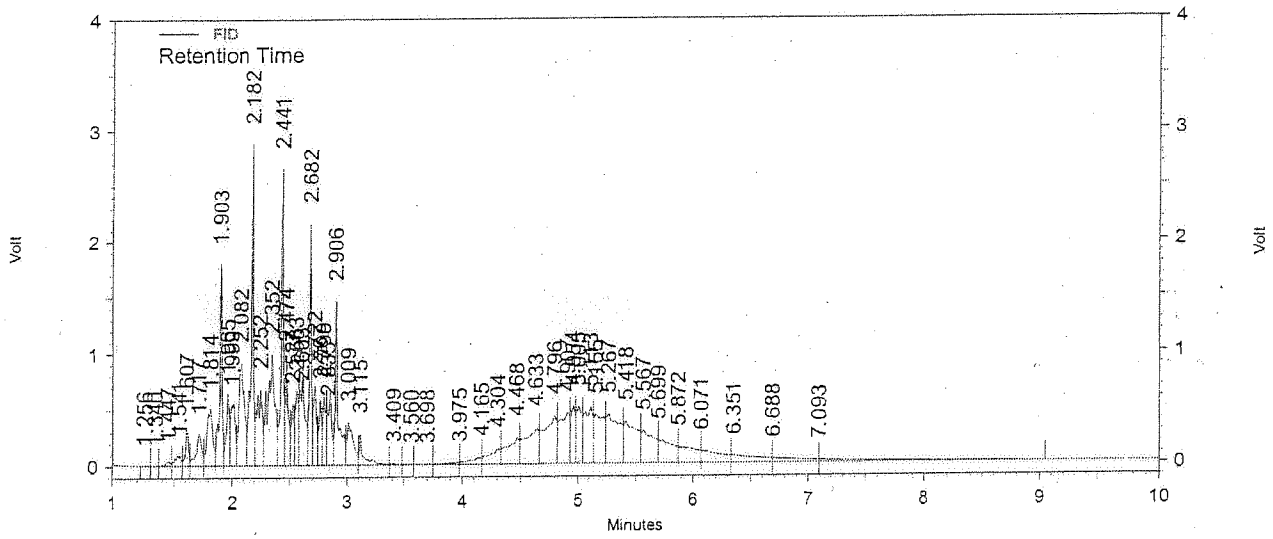
Software Version: Version 3.3.1

# METHOD 8015 by GC/FID
## EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16041.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1612 JP5/5W30 1500/1500PPM |
| Acquired | : 09/17/14 12:28:38 |
| Printed | : 09/17/14 16:47:15 |
| User | : KLinn |

### FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 45751227 | 32447.41478 | 1500.000 CAL |
| M.OIL(C18-C36) | | 35161093 | 24460.06839 | 1500.000 CAL |
| M.OIL(C24-C36) | | 29488420 | 20980.20150 | 1500.000 CAL |
| M.OIL(C24-C40) | | 29488420 | 21068.39522 | 1500.000 CAL |
| Totals | | 139889160 | | 6000.000 CAL |

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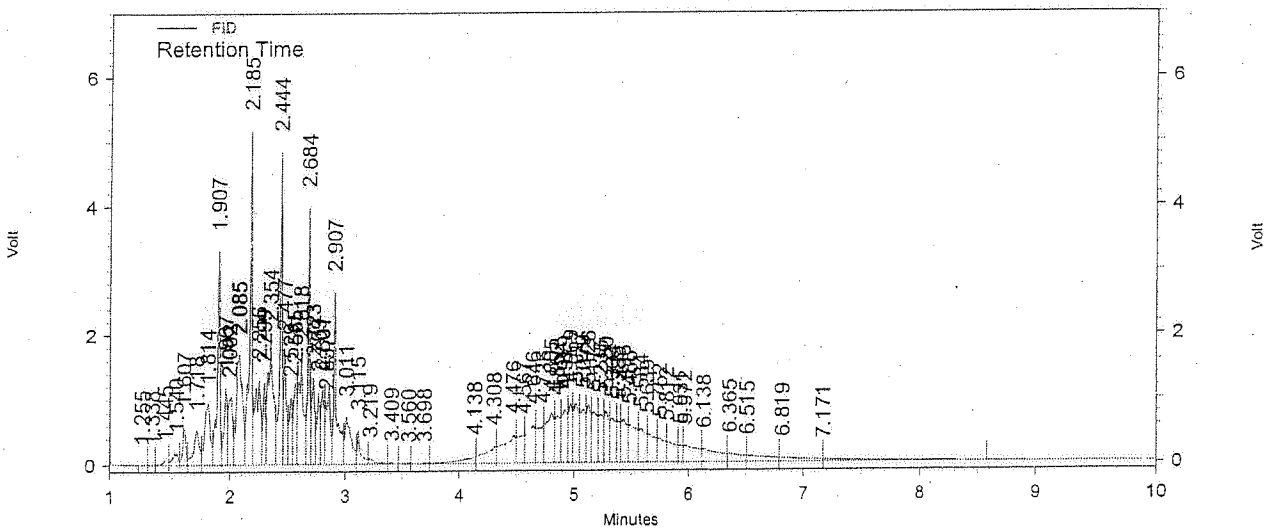
Software Version: Version 3.3.1

# METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16042.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1613 JP5/5W30 3000/3000PPM |
| Acquired | : 09/17/14 12:45:43 |
| Printed | : 09/17/14 16:47:25 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 86711906 | 32447.41478 | 3000.000 CAL |
| M.OIL(C18-C36) | | 63608453 | 24460.06839 | 3000.000 CAL |
| M.OIL(C24-C36) | | 52914979 | 20980.20150 | 3000.000 CAL |
| M.OIL(C24-C40) | | 53938976 | 21068.39522 | 3000.000 CAL |
| Totals | | 257174314 | | 12000.000 CAL |

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Software Version: Version 3.3.1

# SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LI16036A 09/17/2014 11:02
CONC UNIT : ppm

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 14834662 | 444.15 | -11 | | 15 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 14111899 | 433.08 | -13 | | 15 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 14286046 | 437.70 | -12 | | 15 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 14228185 | 436.24 | -13 | | 15 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 14426067 | 435.64 | -13 | | 15 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 14542353 | 438.75 | -12 | | 15 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 14292159 | 437.75 | -12 | | 15 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 14292159 | 437.75 | -12 | | 15 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.732 | 1.729 | 1.735 | 80.0 | 17891.9 | 1491534 | 83.36 | 4 | | 15 |
| HEXACOSANE | 5.061 | 5.013 | 5.109 | 20.0 | 25061.6 | 541583 | 21.61 | 8 | | 15 |

DSD5I16.MET

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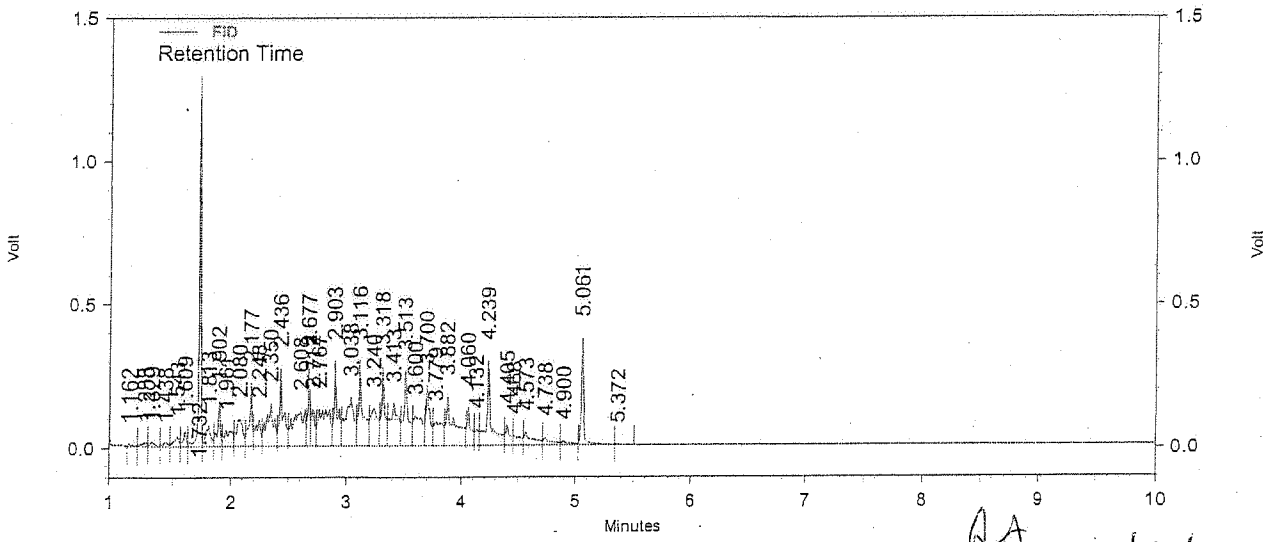
# METHOD 8015 by GC/FID
## EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16036.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : IDSD5I1601 DSL 500/80/20PPM |
| Acquired | : 09/17/14 11:02:35 |
| Printed | : 09/17/14 16:49:55 |
| User | : KLinn |

### FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.732 | 1491534 | 17891.93900 | 83.363 |
| HEXACOSANE | 5.061 | 541583 | 25061.64131 | 21.610 |
| DIESEL(TOTAL) | | 14834662 | 33399.78271 | 444.154 |
| DIESEL(C10-C24) | | 14111899 | 32585.09943 | 433.078 |
| DIESEL(C10-C28) | | 14286046 | 32639.02829 | 437.698 |
| DIESEL(C10-C25) | | 14228185 | 32615.51857 | 436.240 |
| DIESEL(C9-C24) | | 14426067 | 33114.42838 | 435.643 |
| DIESEL(C9-C25) | | 14542353 | 33144.84752 | 438.752 |
| DIESEL(C10-C36) | | 14292159 | 32648.86105 | 437.754 |
| DIESEL(C10-C40) | | 14292159 | 32648.86105 | 437.754 |
| Totals | | 117046647 | | 3606.046 |

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Software Version: Version 3.3.1

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LI16043A 09/17/2014 13:02
CONC UNIT : ppm

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 14412814 | 444.19 | -11 | | 15 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 10598661 | 433.30 | -13 | | 15 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 9003494 | 429.14 | -14 | | 15 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 9003494 | 427.35 | -15 | | 15 |

DSD5I16.MET

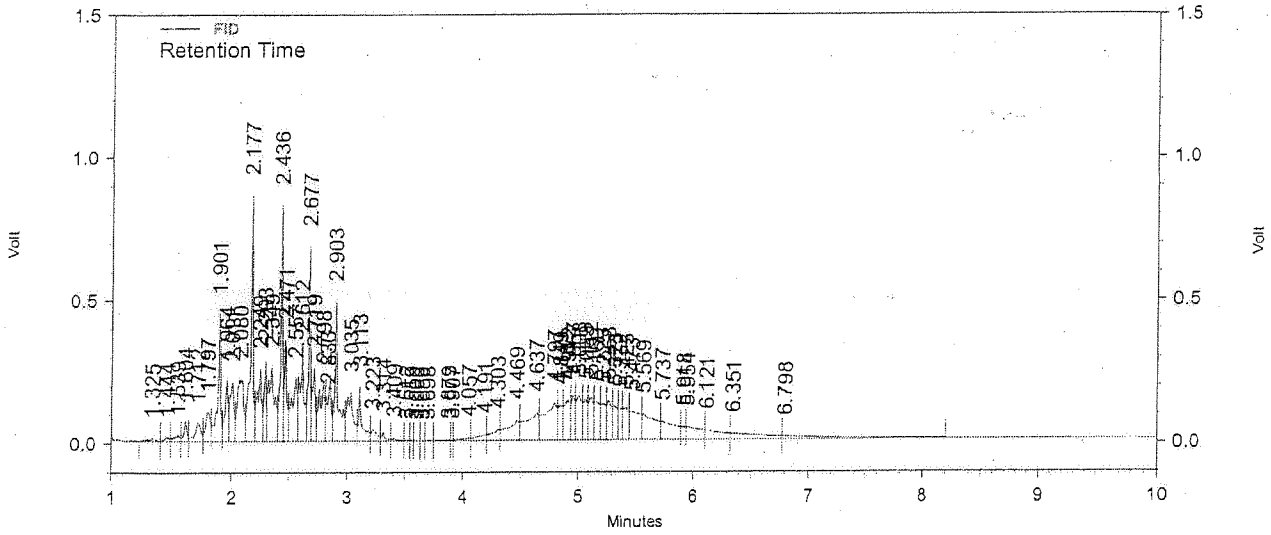
09/19/14

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16043.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : IDSD5I1602 JP5/5W30 500/500PPM |
| Acquired | : 09/17/14 13:02:52 |
| Printed | : 09/17/14 16:43:12 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 14412814 | 32447.41478 | 444.190 |
| M.OIL(C18-C36) | | 10598661 | 24460.06839 | 433.305 |
| M.OIL(C24-C36) | | 9003494 | 20980.20150 | 429.142 |
| M.OIL(C24-C40) | | 9003494 | 21068.39522 | 427.346 |
| Totals | | 43018463 | | 1733.983 |

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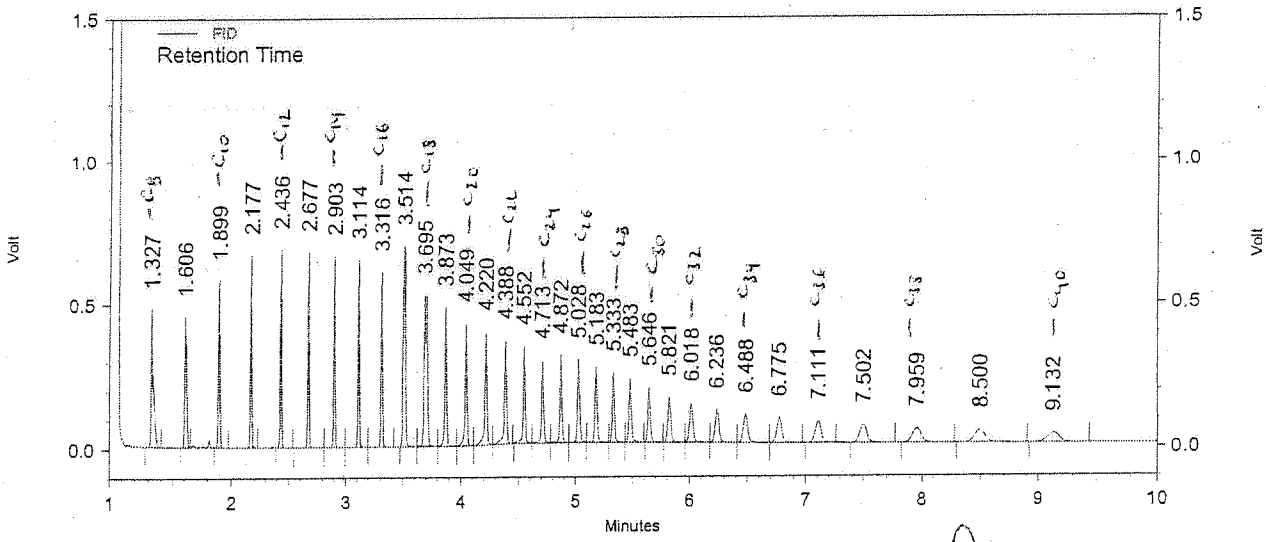
Software Version: Version 3.3.1

# METHOD 8015 by GC/FID
## EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16045.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DRO(C8-C40 + C9-C39) |
| Acquired | : 09/17/14 13:37:11 |
| Printed | : 09/17/14 16:51:25 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | | | | 0.000 BDL |
| HEXACOSANE | 5.028 | 379323 | 25061.64131 | 15.136 |
| DIESEL(TOTAL) | | 14182377 | 33399.78271 | 424.625 |
| DIESEL(C10-C24) | | 8587176 | 32585.09943 | 263.531 |
| DIESEL(C10-C28) | | 9335081 | 32639.02829 | 286.010 |
| DIESEL(C10-C25) | | 9335081 | 32615.51857 | 286.216 |
| DIESEL(C9-C24) | | 8587176 | 33114.42838 | 259.318 |
| DIESEL(C9-C25) | | 9335081 | 33144.84752 | 281.645 |
| DIESEL(C10-C36) | | 11961304 | 32648.86105 | 366.362 |
| DIESEL(C10-C40) | | 12986226 | 32648.86105 | 397.754 |
| Totals | | 84688825 | | 2580.597 |

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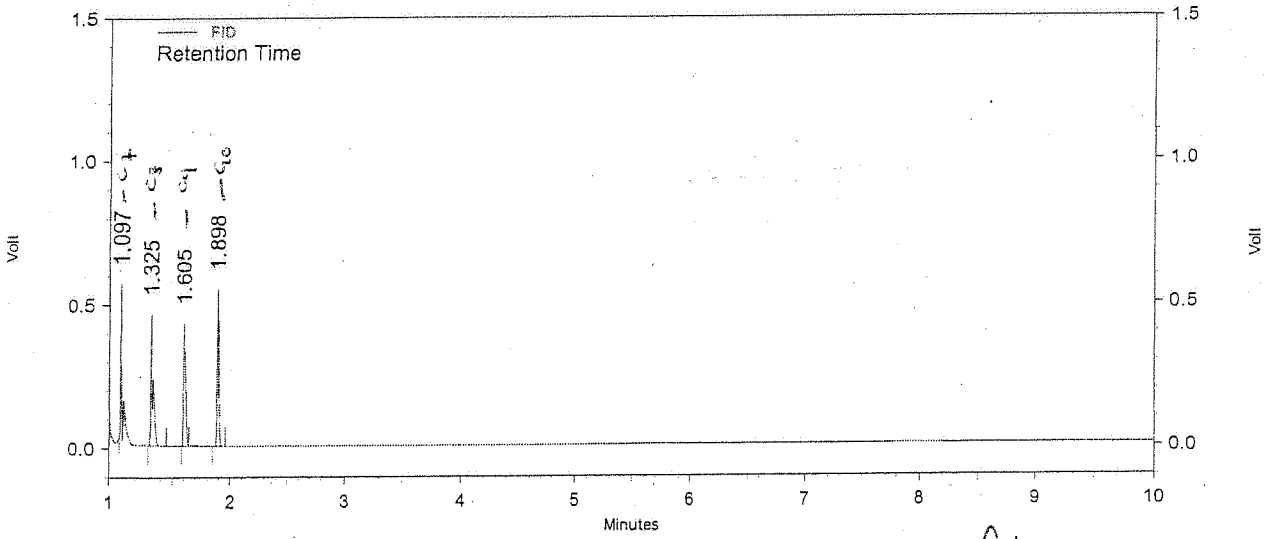
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16046.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : GRO(C6-C10) |
| Acquired | : 09/17/14 13:54:19 |
| Printed | : 09/17/14 16:51:45 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | | | | 0.000 BDL |
| HEXACOSANE | | | | 0.000 BDL |
| DIESEL(TOTAL) | | 1757412 | 33399.78271 | 52.617 |
| DIESEL(C10-C24) | | 0 | 32585.09943 | 0.000 |
| DIESEL(C10-C28) | | 0 | 32639.02829 | 0.000 |
| DIESEL(C10-C25) | | 0 | 32615.51857 | 0.000 |
| DIESEL(C9-C24) | | 591908 | 33114.42838 | 17.875 |
| DIESEL(C9-C25) | | 591908 | 33144.84752 | 17.858 |
| DIESEL(C10-C36) | | 0 | 32648.86105 | 0.000 |
| DIESEL(C10-C40) | | 0 | 32648.86105 | 0.000 |
| Totals | | 2941228 | | 88.350 |

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Software Version: Version 3.3.1

# DAILY CALIBRATIONS

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LJ22037A 10/23/2014 01:51
CONC UNIT : ppm

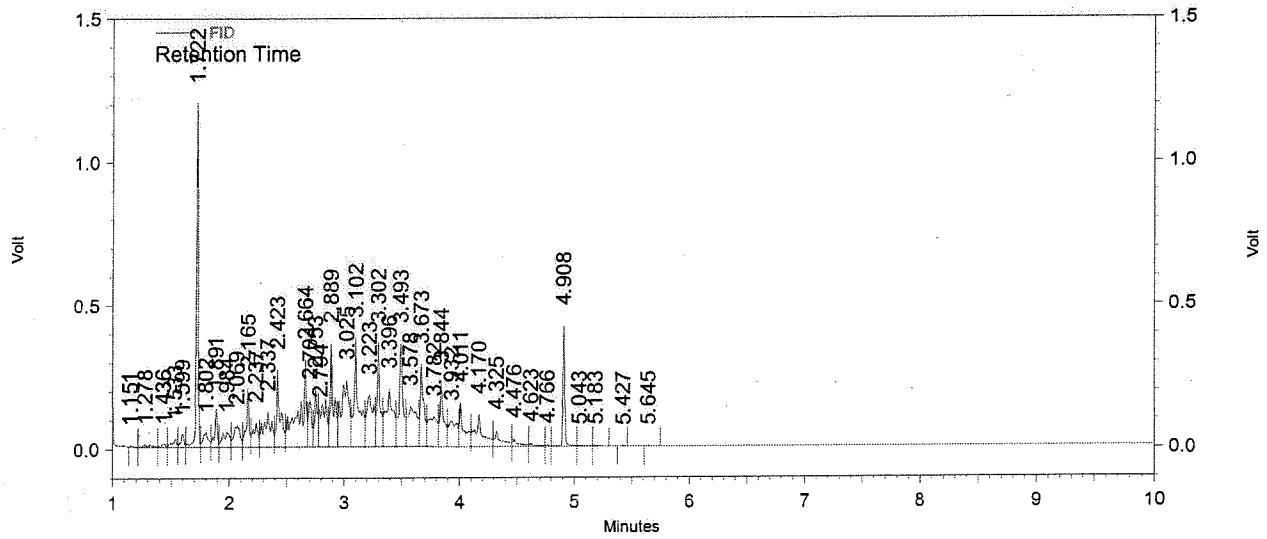
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 15631961 | 468.03 | -6 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 15002747 | 460.42 | -8 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 15009579 | 459.87 | -8 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 15009579 | 460.20 | -8 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 15383294 | 464.55 | -7 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 15390126 | 464.33 | -7 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 15012193 | 459.81 | -8 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 15012193 | 459.81 | -8 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.722 | 1.719 | 1.725 | 80.0 | 17891.9 | 1379691 | 77.11 | -4 | | 20 |
| HEXACOSANE | 4.908 | 4.860 | 4.956 | 20.0 | 25061.6 | 502282 | 20.04 | 0 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22037.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16340 DSL 500/80/20PPM** |
| **Acquired** | **: 10/23/14 01:51:39** |
| **Printed** | **: 10/23/14 12:17:46** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.722 | 1379691 | 17891.93900 | 77.112 |
| HEXACOSANE | 4.908 | 502282 | 25061.64131 | 20.042 |
| DIESEL(TOTAL) | | 15631961 | 33399.78271 | 468.026 |
| DIESEL(C10-C24) | | 15002747 | 32585.09943 | 460.417 |
| DIESEL(C10-C28) | | 15009579 | 32639.02829 | 459.866 |
| DIESEL(C10-C25) | | 15009579 | 32615.51857 | 460.197 |
| DIESEL(C9-C24) | | 15383294 | 33114.42838 | 464.550 |
| DIESEL(C9-C25) | | 15390126 | 33144.84752 | 464.329 |
| DIESEL(C10-C36) | | 15012193 | 32648.86105 | 459.808 |
| DIESEL(C10-C40) | | 15012193 | 32648.86105 | 459.808 |
| Totals | | 123333645 | | 3794.155 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LJ22038A 10/23/2014 02:08
CONC UNIT : ppm

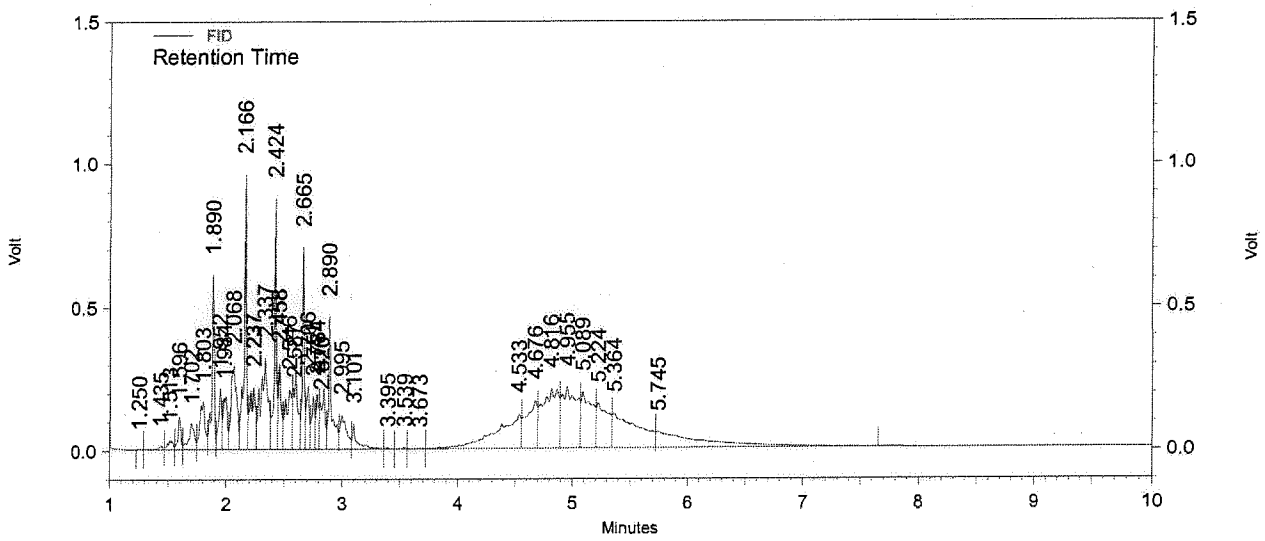
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 14492572 | 446.65 | -11 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 12443025 | 508.71 | 2 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 9626783 | 458.85 | -8 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 9626783 | 456.93 | -9 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22038.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16341 JP5/5W30 500/500PPM** |
| **Acquired** | **: 10/23/14 02:08:40** |
| **Printed** | **: 10/23/14 12:18:10** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 14492572 | 32447.41478 | 446.648 |
| M.OIL(C18-C36) | | 12443025 | 24460.06839 | 508.708 |
| M.OIL(C24-C36) | | 9626783 | 20980.20150 | 458.851 |
| M.OIL(C24-C40) | | 9626783 | 21068.39522 | 456.930 |
| Totals | | 46189163 | | 1871.137 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LJ22047A 10/23/2014 04:43
CONC UNIT : ppm

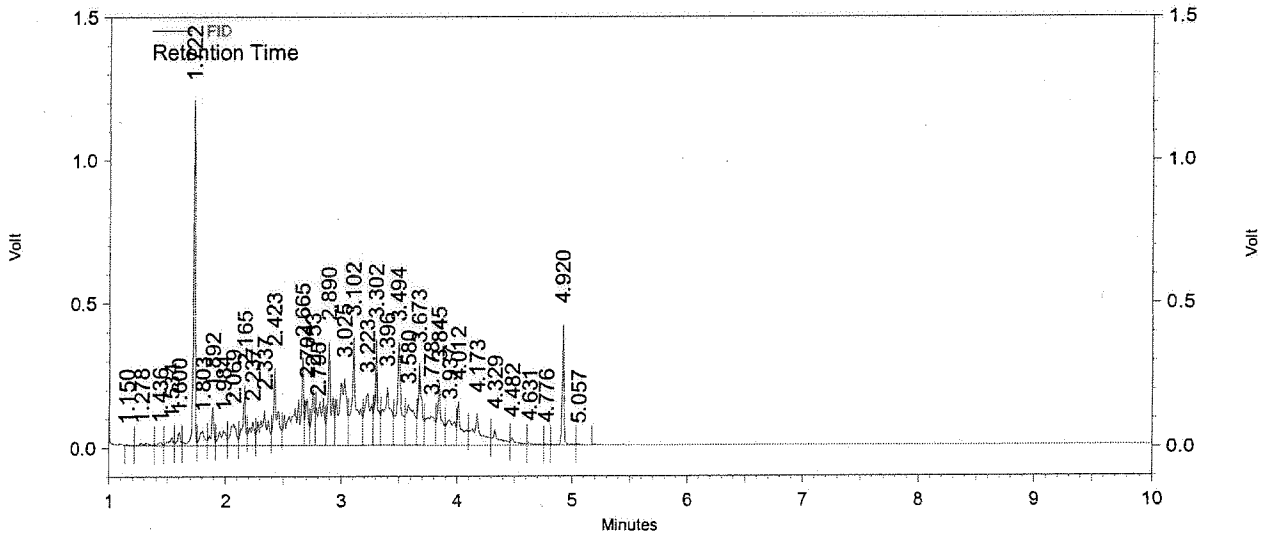
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 15695989 | 469.94 | -6 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 15068390 | 462.43 | -8 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 15074796 | 461.86 | -8 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 15074796 | 462.20 | -8 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 15451293 | 466.60 | -7 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 15457699 | 466.37 | -7 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 15074796 | 461.73 | -8 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 15074796 | 461.73 | -8 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.722 | 1.719 | 1.725 | 80.0 | 17891.9 | 1386085 | 77.47 | -3 | | 20 |
| HEXACOSANE | 4.920 | 4.872 | 4.968 | 20.0 | 25061.6 | 497505 | 19.85 | -1 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22047.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16342 DSL 500/80/20PPM** |
| **Acquired** | **: 10/23/14 04:43:04** |
| **Printed** | **: 10/23/14 09:20:59** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.722 | 1386085 | 17891.93900 | 77.470 |
| HEXACOSANE | 4.920 | 497505 | 25061.64131 | 19.851 |
| DIESEL(TOTAL) | | 15695989 | 33399.78271 | 469.943 |
| DIESEL(C10-C24) | | 15068390 | 32585.09943 | 462.432 |
| DIESEL(C10-C28) | | 15074796 | 32639.02829 | 461.864 |
| DIESEL(C10-C25) | | 15074796 | 32615.51857 | 462.197 |
| DIESEL(C9-C24) | | 15451293 | 33114.42838 | 466.603 |
| DIESEL(C9-C25) | | 15457699 | 33144.84752 | 466.368 |
| DIESEL(C10-C36) | | 15074796 | 32648.86105 | 461.725 |
| DIESEL(C10-C40) | | 15074796 | 32648.86105 | 461.725 |
| Totals | | 123856145 | | 3810.178 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LJ22048A 10/23/2014 05:00
CONC UNIT : ppm

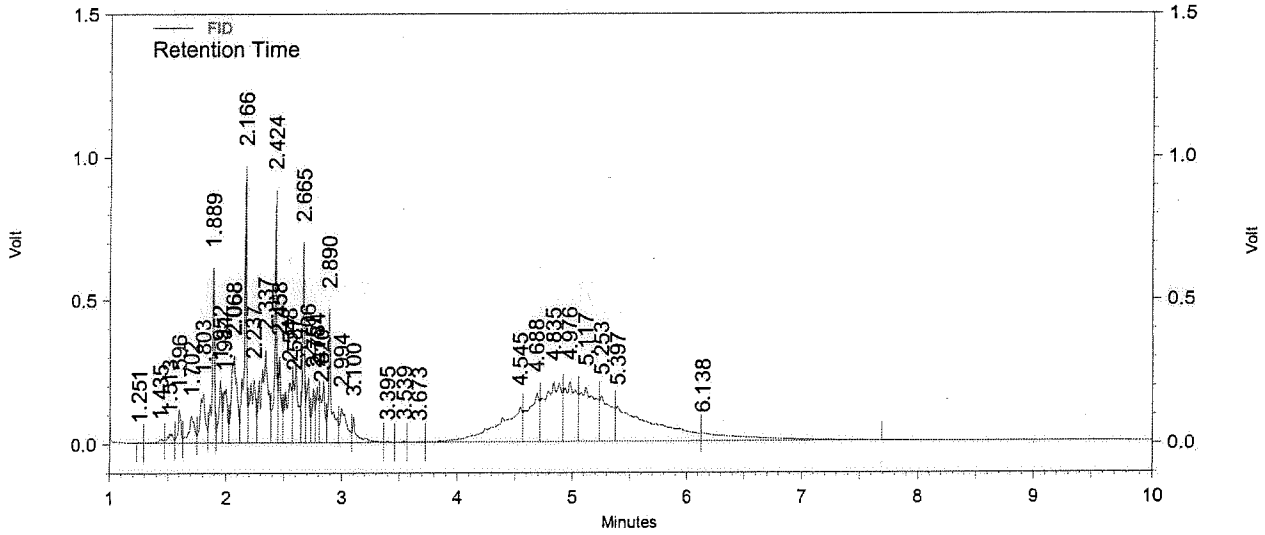
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 14577221 | 449.26 | -10 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 12567707 | 513.80 | 3 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 9714335 | 463.02 | -7 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 9714335 | 461.09 | -8 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22048.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16343 JP5/5W30 500/500PPM** |
| **Acquired** | **: 10/23/14 05:00:08** |
| **Printed** | **: 10/23/14 09:22:00** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 14577221 | 32447.41478 | 449.257 |
| M.OIL(C18-C36) | | 12567707 | 24460.06839 | 513.805 |
| M.OIL(C24-C36) | | 9714335 | 20980.20150 | 463.024 |
| M.OIL(C24-C40) | | 9714335 | 21068.39522 | 461.086 |
| Totals | | 46573598 | | 1887.171 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LJ22073A 10/23/2014 12:07
CONC UNIT : ppm

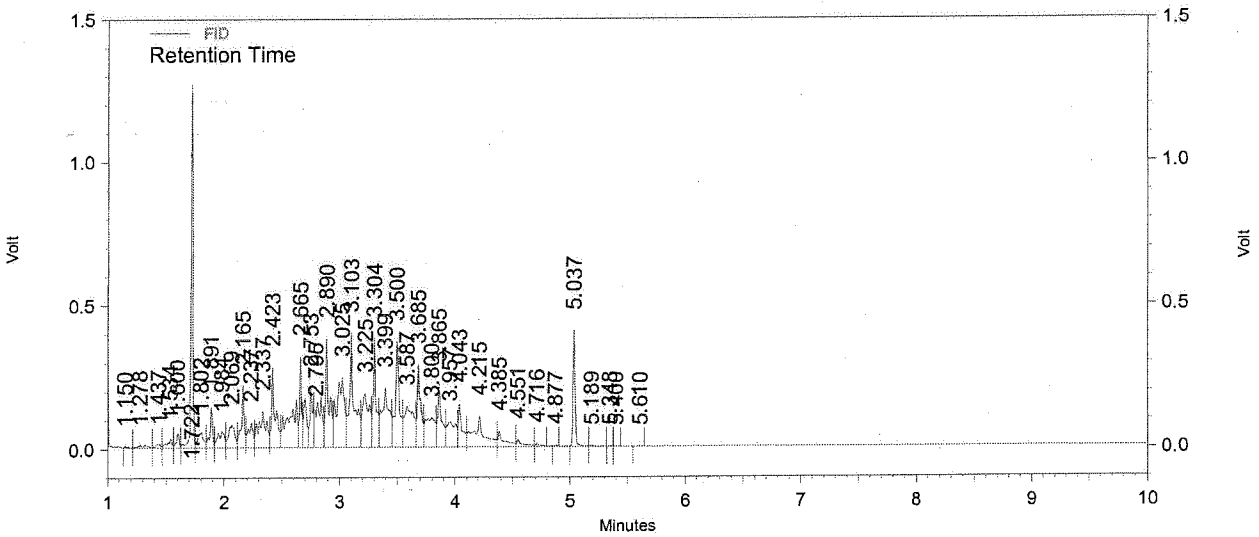
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 15266521 | 457.08 | -9 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 14555091 | 446.68 | -11 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 14591613 | 447.06 | -11 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 14583762 | 447.14 | -11 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 14962484 | 451.84 | -10 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 14991155 | 452.29 | -10 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 14597989 | 447.12 | -11 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 14597989 | 447.12 | -11 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.722 | 1.719 | 1.725 | 80.0 | 17891.9 | 1445326 | 80.78 | 1 | | 20 |
| HEXACOSANE | 5.037 | 4.989 | 5.085 | 20.0 | 25061.6 | 520763 | 20.78 | 4 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22073.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16348 DSL 500/80/20PPM** |
| **Acquired** | **: 10/23/14 12:07:14** |
| **Printed** | **: 10/23/14 14:47:22** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.722 | 1445326 | 17891.93900 | 80.781 |
| HEXACOSANE | 5.037 | 520763 | 25061.64131 | 20.779 |
| DIESEL(TOTAL) | | 15266521 | 33399.78271 | 457.084 |
| DIESEL(C10-C24) | | 14555091 | 32585.09943 | 446.679 |
| DIESEL(C10-C28) | | 14591613 | 32639.02829 | 447.060 |
| DIESEL(C10-C25) | | 14583762 | 32615.51857 | 447.142 |
| DIESEL(C9-C24) | | 14962484 | 33114.42838 | 451.842 |
| DIESEL(C9-C25) | | 14991155 | 33144.84752 | 452.292 |
| DIESEL(C10-C36) | | 14597989 | 32648.86105 | 447.121 |
| DIESEL(C10-C40) | | 14597989 | 32648.86105 | 447.121 |
| Totals | | 120112693 | | 3697.902 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LJ22074A 10/23/2014 12:24
CONC UNIT : ppm

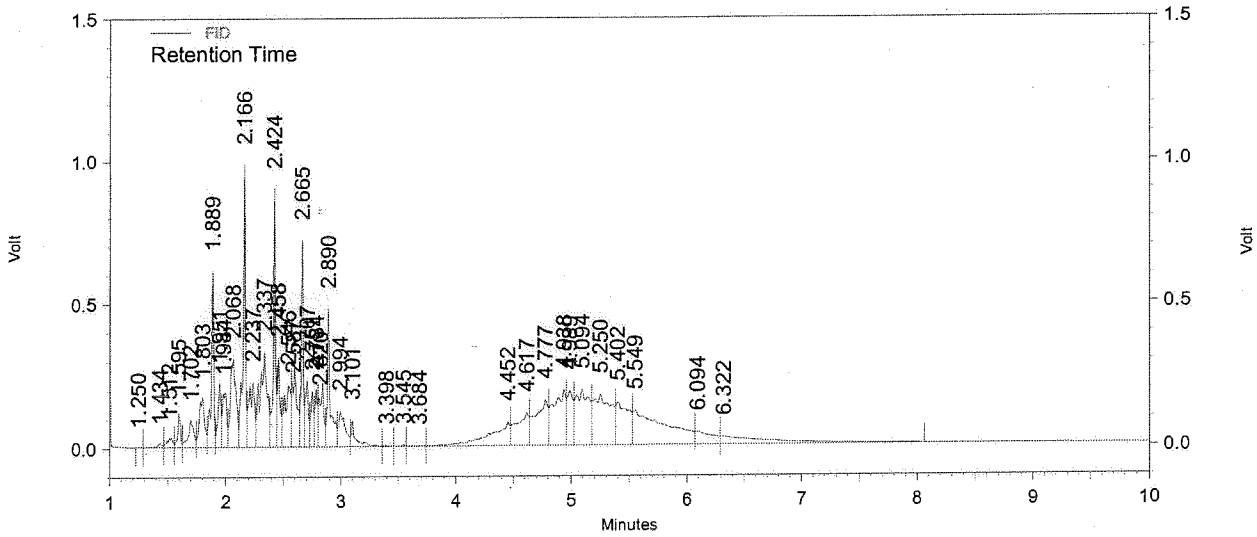
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 15013537 | 462.70 | -7 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 12994307 | 531.25 | 6 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 11176310 | 532.71 | 7 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 11176310 | 530.48 | 6 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22074.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16349 JP5/5W30 500/500PPM** |
| **Acquired** | **: 10/23/14 12:24:19** |
| **Printed** | **: 10/23/14 14:46:30** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 15013537 | 32447.41478 | 462.704 |
| M.OIL(C18-C36) | | 12994307 | 24460.06839 | 531.246 |
| M.OIL(C24-C36) | | 11176310 | 20980.20150 | 532.707 |
| M.OIL(C24-C40) | | 11176310 | 21068.39522 | 530.478 |
| Totals | | 50360464 | | 2057.134 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LJ22086A 10/23/2014 18:31
CONC UNIT : ppm

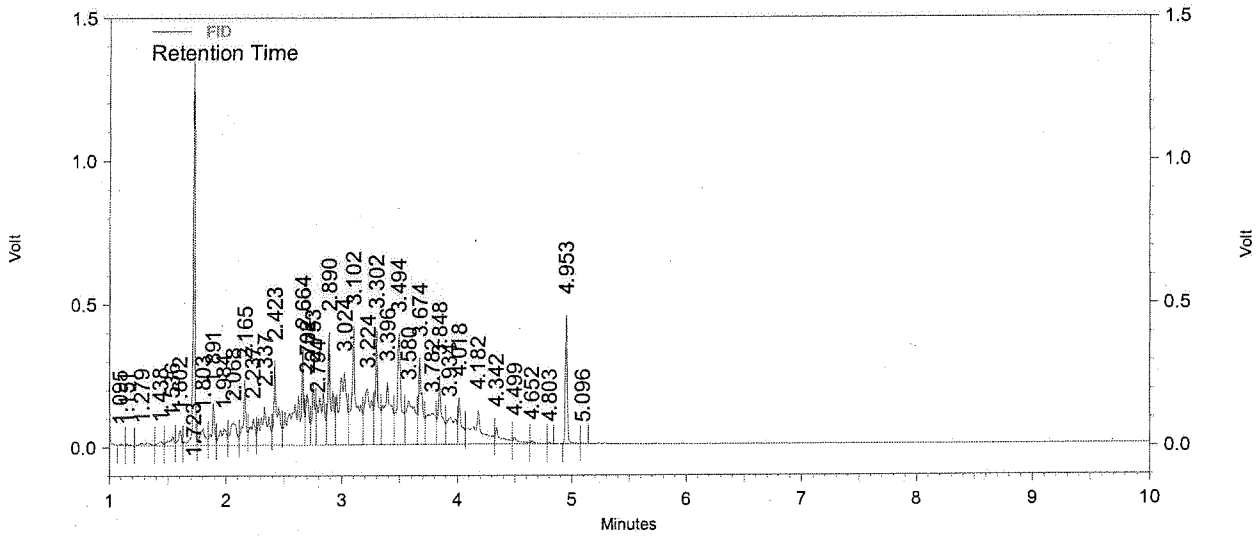
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 17243436 | 516.27 | 3 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 16527237 | 507.20 | 1 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 16532853 | 506.54 | 1 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 16532853 | 506.90 | 1 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 16958090 | 512.11 | 2 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 16963706 | 511.80 | 2 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 16532853 | 506.38 | 1 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 16532853 | 506.38 | 1 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.723 | 1.720 | 1.726 | 80.0 | 17891.9 | 1530190 | 85.52 | 7 | | 20 |
| HEXACOSANE | 4.953 | 4.905 | 5.001 | 20.0 | 25061.6 | 551721 | 22.01 | 10 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22086.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16351 DSL 500/80/20PPM** |
| **Acquired** | **: 10/23/14 18:31:50** |
| **Printed** | **: 10/27/14 11:43:29** |
| **User** | **: KLinn** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.723 | 1530190 | 17891.93900 | 85.524 |
| HEXACOSANE | 4.953 | 551721 | 25061.64131 | 22.015 |
| DIESEL(TOTAL) | | 17243435 | 33399.78271 | 516.274 |
| DIESEL(C10-C24) | | 16527237 | 32585.09943 | 507.202 |
| DIESEL(C10-C28) | | 16532853 | 32639.02829 | 506.536 |
| DIESEL(C10-C25) | | 16532853 | 32615.51857 | 506.901 |
| DIESEL(C9-C24) | | 16958090 | 33114.42838 | 512.106 |
| DIESEL(C9-C25) | | 16963706 | 33144.84752 | 511.805 |
| DIESEL(C10-C36) | | 16532853 | 32648.86105 | 506.384 |
| DIESEL(C10-C40) | | 16532853 | 32648.86105 | 506.384 |
| Totals | | 135905791 | | 4181.131 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LJ22087A 10/23/2014 18:48
CONC UNIT : ppm

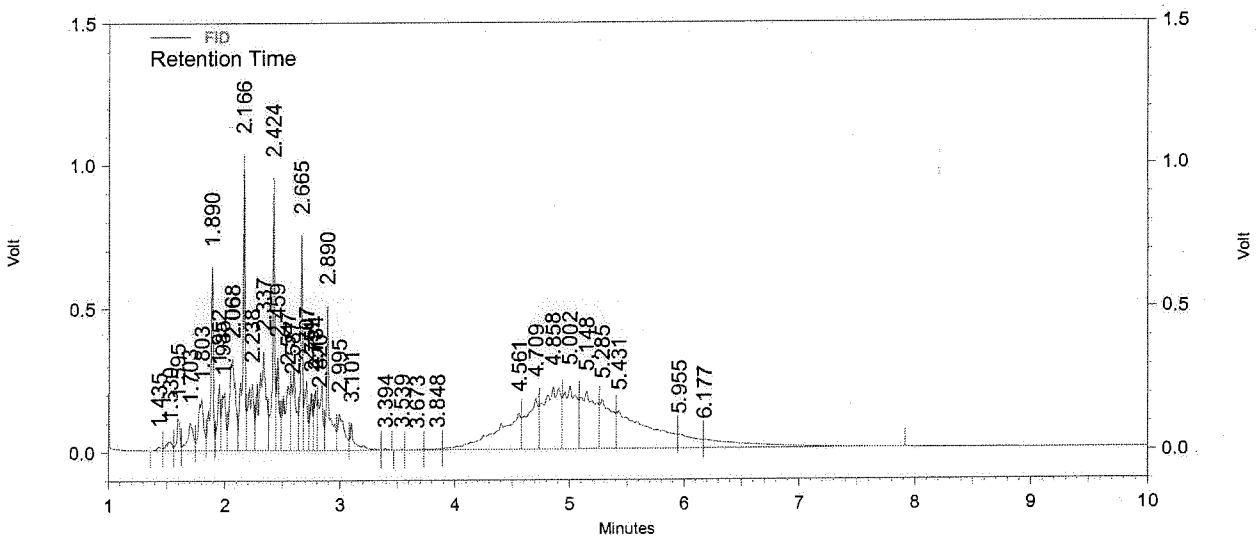
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 15668566 | 482.89 | -3 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 13888095 | 567.79 | 14 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 10730354 | 511.45 | 2 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 10730354 | 509.31 | 2 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ22\LJ22087.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ22.seq** |
| **Sample ID** | **: CDSD5I16352 JP5/5W30 500/500PPM** |
| **Acquired** | **: 10/23/14 18:48:53** |
| **Printed** | **: 10/27/14 11:44:44** |
| **User** | **: KLinn** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 15668566 | 32447.41478 | 482.891 |
| M.OIL(C18-C36) | | 13888095 | 24460.06839 | 567.786 |
| M.OIL(C24-C36) | | 10730354 | 20980.20150 | 511.451 |
| M.OIL(C24-C40) | | 10730354 | 21068.39522 | 509.310 |
| Totals | | 51017369 | | 2071.439 |




**Software Version: Version 3.3.1**

# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

| | |
|---|---|
| Book #: | AD5-029 |
| Instrument No.: | D5 |
| Analytical Sequence: | LI16 |
| Method File: | DSD5I16 |
| Analytical Batch: | N.A. |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-8015D | 6 |
| ☐ EMAX-AK102/AK103 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | Conc (mg/L) |
|---|---|
| ICAL | |
| ☑ Diesel SSB-17.98-01 | 5 → 3,000 |
| ☑ Motor Oil ☑ JP5 SSB-17-98-03 | 10 → 3,000 |
| $CH_2Cl_2$ 54141 | Pure |
| DSL ~~DEC~~ ICV SSB-17-98-02 | 500/80/20 |
| JP5/5W30 ~~DEC~~ ICV1 SSB-17-99-01 | 500/500 |
| ~~Alaska DCC~~ JP5/5W30 ICV2 SSB-17-99-02 | 500/500 |
| Arizona DCC | |
| DRO ($C_8$-$C_{40}$ + $C_9$-$C_{39}$) SSB-17-82-03 | — |
| GRO ($C_6$-$C_{10}$) SSB-17-82-02 | — |
| | |

KML 9/16/14
KML 9/16/14
KML 9/16/14

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZCHROM_GC6890N | |
| ☐ External Hard Drive | |

Analyzed By: KML

Date: 9/16/14

GCT-105 (Offline) Method: CCD5I17.met Data: LI17062.dat Project: EZC331 - [Sequence: LI16.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run# | Type | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|
| 28 | Unknown | 0 | 100 | 2 | IBD5I1602 | DSD5I16.met | LI16028.dat | | |
| 29 | Unknown | 0 | 9 | 2 | DSD5I1601 DSL 5PPM | DSD5I16.met | LI16029.dat | | DSL + Surr. ICAL |
| 30 | Unknown | 0 | 10 | 2 | DSD5I1602 DSL 10/20/5PPM | DSD5I16.met | LI16030.dat | | |
| 31 | Unknown | 0 | 11 | 2 | DSD5I1603 DSL 50/40/10PPM | DSD5I16.met | LI16031.dat | | |
| 32 | Unknown | 0 | 12 | 2 | DSD5I1604 DSL 100/60/15PPM | DSD5I16.met | LI16032.dat | | |
| 33 | Unknown | 0 | 13 | 2 | DSD5I1605 DSL 500/80/20PPM | DSD5I16.met | LI16033.dat | | |
| 34 | Unknown | 0 | 14 | 2 | DSD5I1606 DSL 1500/100/25PPM | DSD5I16.met | LI16034.dat | | |
| 35 | Unknown | 0 | 15 | 2 | DSD5I1607 DSL 3000/220/55PPM | DSD5I16.met | LI16035.dat | | |
| 36 | Unknown | 0 | 16 | 2 | IDSD5I1601 DSL 500/80/20PPM | DSD5I16.met | LI16036.dat | | DSL + Surr. ICV |
| 37 | Unknown | 0 | 17 | 2 | DSD5I1608 JP5/5W30 10/10PPM | DSD5I16.met | LI16037.dat | | JP5 + SW30 ICAL |
| 38 | Unknown | 0 | 18 | 2 | DSD5I1609 JP5/5W30 50/50PPM | DSD5I16.met | LI16038.dat | | |
| 39 | Unknown | 0 | 19 | 2 | DSD5I1610 JP5/5W30 100/100PPM | DSD5I16.met | LI16039.dat | | |
| 40 | Unknown | 0 | 20 | 2 | DSD5I1611 JP5/5W30 500/500PPM | DSD5I16.met | LI16040.dat | | |
| 41 | Unknown | 0 | 21 | 2 | DSD5I1612 JP5/5W30 1500/1500PPM | DSD5I16.met | LI16041.dat | | |
| 42 | Unknown | 0 | 22 | 2 | DSD5I1613 JP5/5W30 3000/3000PPM | DSD5I16.met | LI16042.dat | | |
| 43 | Unknown | 0 | 23 | 2 | IDSD5I1602 JP5/5W30 500/500PPM | DSD5I16.met | LI16043.dat | | JP5 + SW30 (Restek) ICV |
| 44 | Unknown | 0 | 24 | 2 | IDSD5I1603 JP5/5W30 500/500PPM | DSD5I16.met | LI16044.dat | | JP5 + SW30 (Accustandard) ICV |
| 45 | Unknown | 0 | 25 | 2 | DRO(C8-C40 + C9-C39) | DSD5I16.met | LI16045.dat | | |
| 46 | Unknown | 0 | 26 | 2 | GRO(C6-C10) | DSD5I16.met | LI16046.dat | | |
| 47 | Unknown | 0 | | 2 | | CCD5I16.met | LI16047.dat | | |
| 48 | Unknown | 0 | | 2 | | CCD5I16.met | LI16048.dat | | |
| 49 | Unknown | 0 | | 2 | | CCD5I16.met | LI16049.dat | | |
| 50 | Unknown | 0 | | 2 | | CCD5I16.met | LI16050.dat | | |
| 51 | Unknown | 0 | | 2 | | CCD5I16.met | LI16051.dat | | |
| 52 | Unknown | 0 | | 2 | | CCD5I16.met | LI16052.dat | | |
| 53 | Unknown | 0 | | 2 | | CCD5I16.met | LI16053.dat | | |
| 54 | Unknown | 0 | | 2 | | CCD5I16.met | LI16054.dat | | |
| 55 | Unknown | 0 | | 2 | | CCD5I16.met | LI16055.dat | | |
| 56 | Unknown | 0 | | 2 | | J8D5I16.met | LI16056.dat | | |
| 57 | Unknown | 0 | | 2 | KML 9/16/14 | J8D5I16.met | LI16057.dat | | |
| 58 | Unknown | 0 | | 2 | | J8D5I16.met | LI16058.dat | | FINAL |
| 59 | Unknown | 0 | | 2 | | J8D5I16.met | LI16059.dat | | |
| 60 | Unknown | 0 | | 2 | | J8D5I16.met | LI16060.dat | | |
| 61 | Unknown | 0 | | 2 | | J8D5I16.met | LI16061.dat | | |
| 62 | Unknown | 0 | | 2 | | J8D5I16.met | LI16062.dat | | |
| 63 | Unknown | 0 | | 2 | | J8D5I16.met | LI16063.dat | | |
| 64 | Unknown | 0 | | 2 | | J8D5I16.met | LI16064.dat | | |
| 65 | Unknown | 0 | | 2 | | J8D5I16.met | LI16065.dat | | |
| 66 | Unknown | 0 | | 2 | | J8D5I16.met | LI16066.dat | | |
| 67 | Unknown | 0 | | 2 | | J8D5I16.met | LI16067.dat | | |
| 68 | Unknown | 0 | | 2 | | J8D5I16.met | LI16068.dat | | |
| 69 | Unknown | 0 | | 2 | | J8D5I16.met | LI16069.dat | | |
| 70 | Unknown | 0 | | 2 | | J8D5I16.met | LI16070.dat | | |
| 71 | Unknown | 0 | | 2 | | J8D5I16.met | LI16071.dat | | |

KML 9/16/14

For Help, press F1

Start | EZdraft Lite | GCT-105 | Method D5... | GCT-105 (Offline) | Untitled - Paint | D:\Projects\ezcad\Meth... | 11:46

5061

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# EXTRACTABLE TPH

**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

DSJ0 31W: LOQ-2, LOD-2 8015AZ3
J107 ↓

DSJ029S: J107 8015AZ3

DSJ030W: J128
J133
J134
J130

DSJ028W: J113
J118
J121
J122

DSJ032S: J110
J128
J128

| | |
|---|---|
| Book #: | AD5-030 |
| Instrument No.: | D5 |
| Analytical Sequence: | LJ22 |
| Method File: | AZD5I29 / DSD5I16 |
| Analytical Batch: | CAZD5I29336 |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-8015D | 6 |
| ☑ EMAX-AK102/AK103 | 3 |
| ☑ EMAX- ~~8015AZ~~ | 2 |

| STANDARDS ID | Conc (mg/L) |
|---|---|
| ICAL | |
| ☐ Diesel | |
| ☐ Motor Oil ☐ JP5 | |
| $CH_2Cl_2$ Lot # 54141 | Pur |
| DSL DCC 5538-17-96-02 | 500/50/20 |
| JP5/5W30 DCC 5538-17-96-03 | 500/500 |
| Alaska DCC | |
| Arizona DCC | 500/500/100/25 |
| JP-8 DCC 5538-17-88-03 | 500 |
| DRO 5538-17-~~96~~ 91-02 10/22/19 | — |
| | |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZCHROM_GC6890N | |
| ☐ External Hard Drive | |

Analyzed By: [illegible]

Date: 10/22/19

GCT-105 Method: DSD5I16.met Data: LJ22107.dat Project: EZC331 - [Sequence: LJ22.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Status | Run | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | Unknc | 0 | 100 | 2 | IBD5J2201 | AZD5I29.met | LJ22001.dat | | |
| 2 | | Unknown | 0 | 98 | 2 | CAZD5I29336 500/500/25/100PPM | AZD5I29.met | LJ22002.dat | | |
| 3 | | Unknown | 0 | 99 | 2 | DRO(C8-C40 + C9-C39) | AZD5I29.met | LJ22003.dat | | |
| 4 | | Unknown | 0 | 3 | 2 | DSJ031WB | AZD5I29.met | LJ22004.dat | | |
| 5 | | Unknown | 0 | 4 | 2 | DSJ031WL | AZD5I29.met | LJ22005.dat | | |
| 6 | | Unknown | 0 | 5 | 2 | DSJ031WC | AZD5I29.met | LJ22006.dat | | |
| 7 | | Unknown | 0 | 6 | 2 | LOQ-02 | AZD5I29.met | LJ22007.dat | | |
| 8 | | Unknown | 0 | 7 | 2 | LOD-02 | AZD5I29.met | LJ22008.dat | | |
| 9 | | Unknown | 0 | 8 | 2 | 14J107-16 | AZD5I29.met | LJ22009.dat | | |
| 10 | | Unknown | 0 | 9 | 2 | 14J107-17 | AZD5I29.met | LJ22010.dat | | |
| 11 | | Unknown | 0 | 10 | 2 | DSJ029SL | AZD5I29.met | LJ22011.dat | | |
| 12 | | Unknown | 0 | 11 | 2 | DSJ029SC | AZD5I29.met | LJ22012.dat | | |
| 13 | | Unknown | 0 | 12 | 2 | DSJ029SB | AZD5I29.met | LJ22013.dat | | |
| 14 | | Unknown | 0 | 98 | 2 | CAZD5I29337 500/500/25/100PPM | AZD5I29.met | LJ22014.dat | | |
| 15 | | Unknown | 0 | 99 | 2 | DRO(C8-C40 + C9-C39) | AZD5I29.met | LJ22015.dat | | |
| 16 | | Unknown | 0 | 13 | 2 | 14J107-01 | AZD5I29.met | LJ22016.dat | | |
| 17 | | Unknown | 0 | 14 | 2 | 14J107-02 | AZD5I29.met | LJ22017.dat | | |
| 18 | | Unknown | 0 | 15 | 2 | 14J107-03 | AZD5I29.met | LJ22018.dat | | |
| 19 | | Unknown | 0 | 16 | 2 | 14J107-04 | AZD5I29.met | LJ22019.dat | | |
| 20 | | Unknown | 0 | 17 | 2 | 14J107-05 | AZD5I29.met | LJ22020.dat | | |
| 21 | | Unknown | 0 | 18 | 2 | 14J107-06 | AZD5I29.met | LJ22021.dat | | |
| 22 | | Unknown | 0 | 19 | 2 | 14J107-07 | AZD5I29.met | LJ22022.dat | | |
| 23 | | Unknown | 0 | 20 | 2 | 14J107-07M | AZD5I29.met | LJ22023.dat | | |
| 24 | | Unknown | 0 | 21 | 2 | 14J107-07S | AZD5I29.met | LJ22024.dat | | |
| 25 | | Unknown | 0 | 22 | 2 | 14J107-08 | AZD5I29.met | LJ22025.dat | | |
| 26 | | Unknown | 0 | 98 | 2 | CAZD5I29338 500/500/25/100PPM | AZD5I29.met | LJ22026.dat | | FINAL |
| 27 | | Unknown | 0 | 99 | 2 | DRO(C8-C40 + C9-C39) | AZD5I29.met | LJ22027.dat | | |
| 28 | | Unknown | 0 | 23 | 2 | 14J107-09 | AZD5I29.met | LJ22028.dat | | |
| 29 | | Unknown | 0 | 24 | 2 | 14J107-10 | AZD5I29.met | LJ22029.dat | | |
| 30 | | Unknown | 0 | 25 | 2 | 14J107-12 | AZD5I29.met | LJ22030.dat | | |
| 31 | | Unknown | 0 | 26 | 2 | 14J107-13 | AZD5I29.met | LJ22031.dat | | |
| 32 | | Unknown | 0 | 27 | 2 | 14J107-14 | AZD5I29.met | LJ22032.dat | | |
| 33 | | Unknown | 0 | 28 | 2 | 14J107-15 | AZD5I29.met | LJ22033.dat | | |
| 34 | | Unknown | 0 | 98 | 2 | CAZD5I29339 500/500/25/100PPM | AZD5I29.met | LJ22034.dat | | |
| 35 | | Unknown | 0 | 100 | 2 | IBD5J2202 | DSD5I16.met | LJ22035.dat | | |
| 36 | | Unknown | 0 | 99 | 2 | DRO(C8-C40 + C9-C39) | DSD5I16.met | LJ22036.dat | | |
| 37 | | Unknown | 0 | 1 | 2 | CDSD5I16340 DSL 500/80/20PPM | DSD5I16.met | LJ22037.dat | | |
| 38 | | Unknown | 0 | 2 | 2 | CDSD5I16341 JP5/5W30 500/500PPM | DSD5I16.met | LJ22038.dat | | |
| 39 | | Unknown | 0 | 29 | 2 | DSJ030WB | DSD5I16.met | LJ22039.dat | | |
| 40 | | Unknown | 0 | 30 | 2 | DSJ030WL | DSD5I16.met | LJ22040.dat | | |
| 41 | | Unknown | 0 | 31 | 2 | DSJ030WC | DSD5I16.met | LJ22041.dat | | X Bad Inj /Not Evaluated. |
| 42 | | Unknown | 0 | 32 | 2 | 14J128-07 | DSD5I16.met | LJ22042.dat | | |
| 43 | | Unknown | 0 | 33 | 2 | 14J133-01 | DSD5I16.met | LJ22043.dat | | |
| 44 | | Unknown | 0 | 34 | 2 | 14J134-01 | DSD5I16.met | LJ22044.dat | | |

For Help, press F1

Start | untitled - Paint | EZChrom Elite | GCT-105 Method: D... | GCT-105 (Offline) - Me... | D:\Projects\EZC331\Export | Calculator | 14:10 | Friday, October 24, 2014

5663

GCT-105 Method: DSD5I16.met Data: LJ22107.dat Project: EZC331 - [Sequence: LJ22.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Status | Run | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | | Unknown | 0 | 35 | 2 | 14J130-01 | DSD5I16.met | LJ22045.dat | | |
| 46 | | Unknown | 0 | 36 | 2 | 14J130-02 | DSD5I16.met | LJ22046.dat | | |
| 47 | | Unknown | 0 | 1 | 2 | CDSD5I16342 DSL 500/80/20PPM | DSD5I16.met | LJ22047.dat | | |
| 48 | | Unknown | 0 | 2 | 2 | CDSD5I16343 JP5/5W30 500/500PPM | DSD5I16.met | LJ22048.dat | | |
| 49 | | Unknown | 0 | 97 | 2 | CJ8D5I29344 JP8 500PPM | J8D5I29.met | LJ22049.dat | | |
| 50 | | Unknown | 0 | 37 | 2 | DSJ028WB | DSD5I16.met | LJ22050.dat | | |
| 51 | | Unknown | 0 | 38 | 2 | DSJ028WL | DSD5I16.met | LJ22051.dat | | DSL |
| 52 | | Unknown | 0 | 39 | 2 | DSJ028WC | DSD5I16.met | LJ22052.dat | | DSL |
| 53 | | Unknown | 0 | 40 | 2 | J5J028WL | DSD5I16.met | LJ22053.dat | | JP5 |
| 54 | | Unknown | 0 | 41 | 2 | J5J028WC | DSD5I16.met | LJ22054.dat | | JP5 |
| 55 | | Unknown | 0 | 42 | 2 | J8J028WL | DSD5I16.met | LJ22055.dat | | JP8 |
| 56 | | Unknown | 0 | 43 | 2 | J8J028WC | DSD5I16.met | LJ22056.dat | | JP8 |
| 57 | | Unknown | 0 | 44 | 2 | 14J113-01 | DSD5I16.met | LJ22057.dat | | |
| 58 | | Unknown | 0 | 45 | 2 | 14J118-01 | DSD5I16.met | LJ22058.dat | | |
| 59 | | Unknown | 0 | 46 | 2 | 14J118-02 | DSD5I16.met | LJ22059.dat | | |
| 60 | | Unknown | 0 | 1 | 2 | CDSD5I16345 DSL 500/80/20PPM | DSD5I16.met | LJ22060.dat | | |
| 61 | | Unknown | 0 | 2 | 2 | CDSD5I16346 JP5/5W30 500/500PPM | DSD5I16.met | LJ22061.dat | | |
| 62 | | Unknown | 0 | 97 | 2 | CJ8D5I29347 JP8 500PPM | J8D5I29.met | LJ22062.dat | | |
| 63 | | Unknown | 0 | 47 | 2 | 14J121-01 | DSD5I16.met | LJ22063.dat | | |
| 64 | | Unknown | 0 | 48 | 2 | 14J121-01M | DSD5I16.met | LJ22064.dat | | DSL |
| 65 | | Unknown | 0 | 49 | 2 | 14J121-01S | DSD5I16.met | LJ22065.dat | | DSL |
| 66 | | Unknown | 0 | 50 | 2 | 14J121-01M | DSD5I16.met | LJ22066.dat | | JP5 |
| 67 | | Unknown | 0 | 51 | 2 | 14J121-01S | DSD5I16.met | LJ22067.dat | | JP5 |
| 68 | | Unknown | 0 | 52 | 2 | 14J121-01M | DSD5I16.met | LJ22068.dat | | JP8 |
| 69 | | Unknown | 0 | 53 | 2 | 14J121-01S | DSD5I16.met | LJ22069.dat | | JP8 |
| 70 | | Unknown | 0 | 54 | 2 | 14J121-02 | DSD5I16.met | LJ22070.dat | | |
| 71 | | Unknown | 0 | 55 | 2 | 14J121-03 | DSD5I16.met | LJ22071.dat | | |
| 72 | | Unknown | 0 | 56 | 2 | 14J122-01 | DSD5I16.met | LJ22072.dat | | |
| 73 | | Unknown | 0 | 1 | 2 | CDSD5I16348 DSL 500/80/20PPM | DSD5I16.met | LJ22073.dat | | |
| 74 | | Unknown | 0 | 2 | 2 | CDSD5I16349 JP5/5W30 500/500PPM | DSD5I16.met | LJ22074.dat | | |
| 75 | | Unknown | 0 | 97 | 2 | CJ8D5I29350 JP8 500PPM | J8D5I29.met | LJ22075.dat | | |
| 76 | Complete | Unknown | 0 | 99 | 2 | DRO(C8-C40 + C9-C39) | DSD5I16.met | LJ22076.dat | | |
| 77 | Complete | Unknown | 0 | 100 | 2 | IBD5J2203 | DSD5I16.met | LJ22077.dat | | |
| 78 | Complete | Unknown | 0 | 31 | 2 | DSJ030WY | DSD5I16.met | LJ22078.dat | | |
| 79 | Complete | Unknown | 0 | 57 | 2 | DSJ032SB | DSD5I16.met | LJ22079.dat | | |
| 80 | Complete | Unknown | 0 | 58 | 2 | DSJ032SL | DSD5I16.met | LJ22080.dat | | |
| 81 | Complete | Unknown | 0 | 59 | 2 | DSJ032SC | DSD5I16.met | LJ22081.dat | | |
| 82 | Complete | Unknown | 0 | 60 | 2 | 14J110-04 | DSD5I16.met | LJ22082.dat | | |
| 83 | Complete | Unknown | 0 | 61 | 2 | 14J110-02 | DSD5I16.met | LJ22083.dat | | Yellow |
| 84 | Complete | Unknown | 0 | 62 | 2 | 14J110-03 | DSD5I16.met | LJ22084.dat | | Yellow |
| 85 | Complete | Unknown | 0 | 63 | 2 | 14J110-01 | DSD5I16.met | LJ22085.dat | | Brown |
| 86 | Complete | Unknown | 0 | 1 | 2 | CDSD5I16351 DSL 500/80/20PPM | DSD5I16.met | LJ22086.dat | | |
| 87 | Complete | Unknown | 0 | 2 | 2 | CDSD5I16352 JP5/5W30 500/500PPM | DSD5I16.met | LJ22087.dat | | |
| 88 | Complete | Unknown | 0 | 64 | 2 | 14J110-05 | DSD5I16.met | LJ22088.dat | | |

FINAL

For Help, press F1

Start | Untitled - Paint | EZChrom Elite | GCT-105 Method: D... | GCT-105 (Offline) Me... | D:\Projects\EZC331\Export | Calculator | Friday, October 24, 2014 14:11

5061

GCT-105 Method: DSD5I16.met Data: LJ22107.dat Project: EZC331 - [Sequence: LJ22.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Status | Run | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 89 | Complete | Unknown | 0 | 65 | 2 | 14J110-06 | DSD5I16.met | LJ22089.dat | | |
| 90 | Complete | Unknown | 0 | 66 | 2 | 14J110-07 | DSD5I16.met | LJ22090.dat | | |
| 91 | Complete | Unknown | 0 | 67 | 2 | 14J120-01 | DSD5I16.met | LJ22091.dat | | |
| 92 | Complete | Unknown | 0 | 68 | 2 | 14J120-02 | DSD5I16.met | LJ22092.dat | | |
| 93 | Complete | Unknown | 0 | 69 | 2 | 14J120-03 | DSD5I16.met | LJ22093.dat | | |
| 94 | Complete | Unknown | 0 | 70 | 2 | 14J120-04 | DSD5I16.met | LJ22094.dat | | |
| 95 | Complete | Unknown | 0 | 71 | 2 | 14J120-05 | DSD5I16.met | LJ22095.dat | | |
| 96 | Complete | Unknown | 0 | 72 | 2 | 14J120-05M | DSD5I16.met | LJ22096.dat | | |
| 97 | Complete | Unknown | 0 | 73 | 2 | 14J120-05S | DSD5I16.met | LJ22097.dat | | |
| 98 | Complete | Unknown | 0 | 1 | 2 | CDSD5I16353 DSL 500/80/20PPM | DSD5I16.met | LJ22098.dat | | |
| 99 | Complete | Unknown | 0 | 2 | 2 | CDSD5I16354 JP5/5W30 500/500PPM | DSD5I16.met | LJ22099.dat | | |
| 100 | Complete | Unknown | 0 | 74 | 2 | 14J128-03 | DSD5I16.met | LJ22100.dat | | |
| 101 | Complete | Unknown | 0 | 75 | 2 | 14J128-02 | DSD5I16.met | LJ22101.dat | | Yellow |
| 102 | Complete | Unknown | 0 | 76 | 2 | 14J128-06 | DSD5I16.met | LJ22102.dat | | Yellow |
| 103 | Complete | Unknown | 0 | 77 | 2 | 14J128-04I 0.2/1ML | DSD5I16.met | LJ22103.dat | | Brown |
| 104 | Complete | Unknown | 0 | 78 | 2 | 14J128-01 | DSD5I16.met | LJ22104.dat | | Brown |
| 105 | Complete | Unknown | 0 | 79 | 2 | 14J128-05 | DSD5I16.met | LJ22105.dat | | Brown |
| 106 | Complete | Unknown | 0 | 1 | 2 | CDSD5I16355 DSL 500/80/20PPM | DSD5I16.met | LJ22106.dat | | |
| 107 | Stopped | Unknown | 0 | 2 | 2 | CDSD5I16356 JP5/5W30 500/500PPM | DSD5I16.met | LJ22107.dat | ANY | |
| 108 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22108.dat | | |
| 109 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22109.dat | | |
| 110 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22110.dat | | |
| 111 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22111.dat | | |
| 112 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22112.dat | | |
| 113 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22113.dat | | |
| 114 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22114.dat | | |
| 115 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22115.dat | | |
| 116 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22116.dat | | |
| 117 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22117.dat | | |
| 118 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22118.dat | | |
| 119 | | Unknown | 0 | | 2 | | DSD5I16.met | LJ22119.dat | | |
| 120 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22120.dat | | |
| 121 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22121.dat | | |
| 122 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22122.dat | | |
| 123 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22123.dat | | |
| 124 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22124.dat | | |
| 125 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22125.dat | | |
| 126 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22126.dat | | |
| 127 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22127.dat | | |
| 128 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22128.dat | | |
| 129 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22129.dat | | |
| 130 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22130.dat | | |
| 131 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22131.dat | | |
| 132 | | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ22132.dat | | |

XLm 10/24/14

FINAL

10/24/14

For Help, press F1

Start | untitled - Paint | EZChrom Elite | GCT-105 Method: D... | GCT-105 (Offline) Me... | D:\Projects\EzC331\Export | Calculator | Friday, October 24, 2014 14:11

5965

# EXTRACTION LOGS

EMAX LABORATORIES, INC.

# EXTRACTION LOG
*for*
# TPH



| SOP | Rev. # |
|---|---|
| ☑ EMAX-3520 | 5 |
| ☐ EMAX-3540 | 2 |
| ☐ EMAX-3550 | 4 |
| ☐ EMAX-3580 | 2 |
| ☐ EMAX-8015AZ | 2 |
| ☐ EMAX-AK 102/103 | 3 |
| ☐ EMAX- | |

**Note:** For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

**Book #:** EDS-070
**Preparation Batch:** DSJ030W
**Matrix:** water
**Micropipette ID:** PE97C-03 (100 µL)
**Micropipette ID:** PE00-03 (1000 µL)

| Standards | ID | Amount Added (ml) |
|---|---|---|
| Surrogate | SS3-009-08-30 | 0.5 |
| Surrogate | | |
| LCS/MS (diesel) | SS3-009-08-04 | 0.1 |
| LCS/MS | | |
| **Reagent** | **Lot # / ID** | |
| $CH_2Cl_2$ | 54184 | |
| $Na_2SO_4$ | SW1B-002-62-10 | |
| HCl | 4113080 | |
| Silica Sand | | |
| Silica Gel | | |
| Reagent Water | SW1A-005-09-18 | |
| pH strip | HC413032 | |
| Filter Paper 10/27/14 | ~~HC413032~~ 9587322B | |

| Lab Sample ID | Sonicator # | Concentrator # |
|---|---|---|
| DSJ030WB | | 4 |
| WL | | 4 |
| WC | | 4 |
| J128-07 | | 4 |
| J133-01 | | 4 |
| J134-01 | | 4 |
| J130-01 | | 3 |
| -02 | | 3 |

**TUNING**

| Sonicator # | Reading |
|---|---|
| | |
| | |
| | |
| | |

| Concentrator | Water Bath Temperature Setting (°C) | Thermometer Reading (°C) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | 35 | 35 |
| 4 | 35 | 35 |
| 5 | | |
| 6 | | |

**Comments:**

Test thermometer = SVOC-T1

Prepared By: AGG
Standard Added By: AGG
Witnessed By:
Checked By: ML
Extract Received By: 10/27/14
Extraction Location: SE06-11
Disposal Date:
Disposed By:

FileID: DSJ030W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR EXTRACTABLE TPH

| PrepBatchID | LabSampleID | Aliquot | Unit | DateTime | Ve(ml) | ExpAmt | ExpVe(ml) | PrepFctr | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 14DSJ030W01 | DSJ030WB | 1000 | ml | 10/21/14 15:13 | 10 | 1000 | 10 | 1 | |
| 14DSJ030W02 | DSJ030WL | 1000 | ml | 10/21/14 15:13 | 10 | 1000 | 10 | 1 | |
| 14DSJ030W03 | DSJ030WC | 1000 | ml | 10/21/14 15:13 | 10 | 1000 | 10 | 1 | |
| 14DSJ030W04 | J128-07 | 880 | ml | 10/21/14 15:13 | 10 | 1000 | 10 | 1.14 | |
| 14DSJ030W05 | J133-01 | 950 | ml | 10/21/14 15:14 | 10 | 1000 | 10 | 1.05 | |
| 14DSJ030W06 | J134-01 | 880 | ml | 10/21/14 15:14 | 10 | 1000 | 10 | 1.14 | |
| 14DSJ030W07 | J130-01 | 960 | ml | 10/21/14 16:35 | 10 | 1000 | 10 | 1.04 | ✓ |
| 14DSJ030W08 | J130-02 | 970 | ml | 10/21/14 16:35 | 10 | 1000 | 10 | 1.03 | ✓ |

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 10/22/14 16:45

☑ Extraction Ended @ 10/22/14 10:45

Prepared By: AGalan

Checked By: ML

Comments: Volume entered after extraction started, pH adjusted to pH<2 w/ conc HCl.

Date 10/22/14

SOP EMAX-3520 Rev. 5

# APPENDIX

Quantitation Report (QT Reviewed)

Data File : D:\DATA\14K19\RKJ283.D
Acq On : 19 Nov 2014 17:42
Sample : 14J130-01
Misc : DEISEL EXTRACT
Integrator: RTE
Quant Time: Nov 20 12:50:40 2014
Quant Results File: SVE4G02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES
QLast Update : Thu Jul 03 14:34:50 2014
Response via : Initial Calibration
DataAcq Meth:SVE4G02S.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) 1,4-Dichlorobenzene-d4 | 2.986 | 152 | 538949 | 40.00 | ppm | -0.02 |
| 21) Naphthalene-d8 | 4.215 | 136 | 2000448 | 40.00 | ppm | -0.02 |
| 41) Acenaphthene-d10 | 6.245 | 164 | 1157292 | 40.00 | ppm | -0.02 |
| 71) Phenanthrene-d10 | 7.986 | 188 | 2018005 | 40.00 | ppm | 0.00 |
| 87) Chrysene-d12 | 10.772 | 240 | 2245831 | 40.00 | ppm | 0.00 |
| 97) Perylene-d12 | 12.193 | 264 | 2053022 | 40.00 | ppm | -0.02 |
| System Monitoring Compounds | | | | | | |
| 5) 2-Fluorophenol | 0.000 | 112 | 0 | 0.00 | ppm | |
| Spiked Amount 30.000 | | | Recovery | = | 0.00% | |
| 6) Phenol-d5 | 0.000 | 99 | 0 | 0.00 | ppm | |
| Spiked Amount 30.000 | | | Recovery | = | 0.00% | |
| 12) 1,2-Dichlorobenzene-d4 | 3.126 | 152 | 397 | 0.03 | ppm | -0.02 |
| Spiked Amount 10.000 | | | Recovery | = | 0.30% | |
| 22) Nitrobenzene-d5 | 3.451 | 82 | 94 | 0.00 | ppm | -0.05 |
| Spiked Amount 10.000 | | | Recovery | = | 0.00% | |
| 46) 2-Fluorobiphenyl | 0.000 | 172 | 0 | 0.00 | ppm | |
| Spiked Amount 10.000 | | | Recovery | = | 0.00% | |
| 75) 2,4,6-Tribromophenol | 0.000 | 330 | 0 | 0.00 | ppm | |
| Spiked Amount 30.000 | | | Recovery | = | 0.00% | |
| 90) Terphenyl-d14 | 0.000 | 244 | 0 | 0.00 | ppm | |
| Spiked Amount 10.000 | | | Recovery | = | 0.00% | |

Target Compounds Qvalue

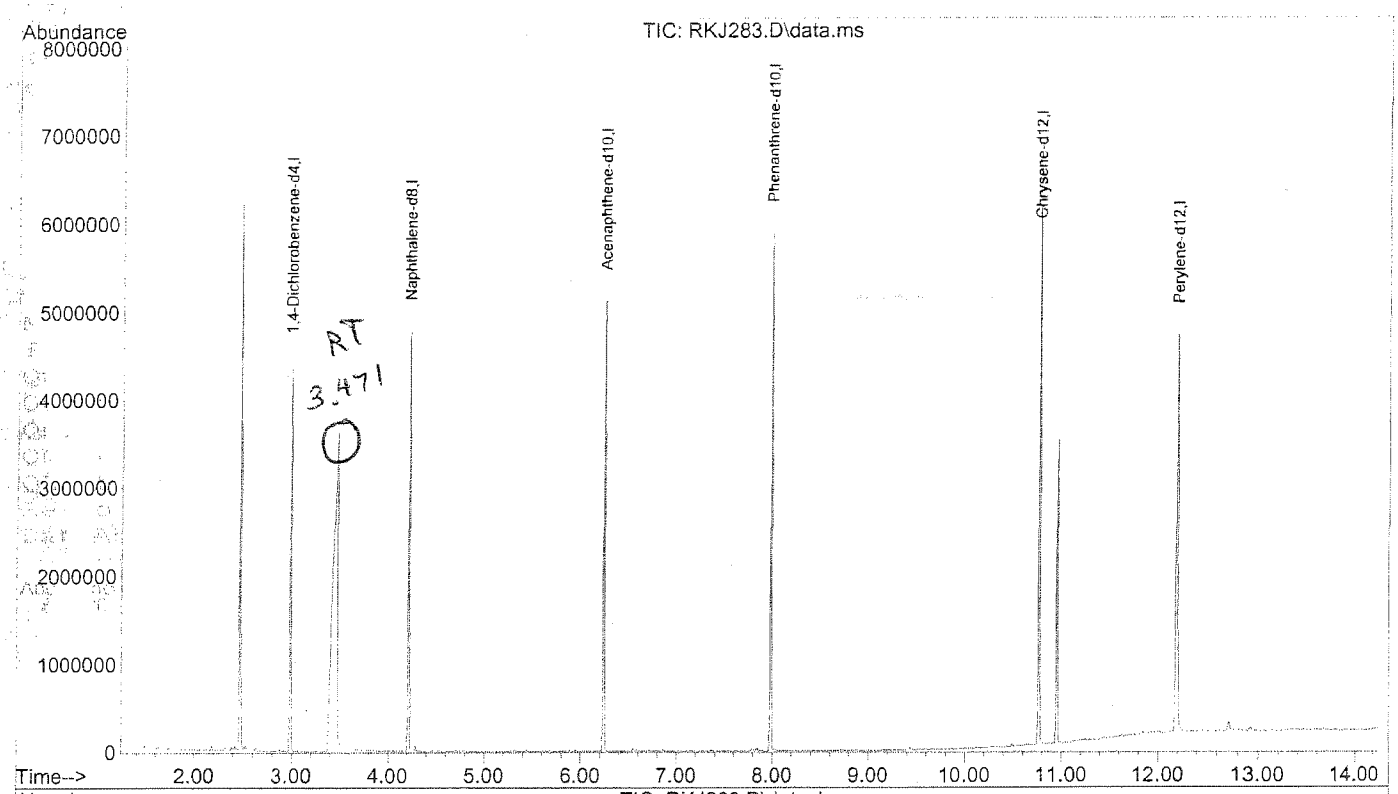
(#) = qualifier out of range (m) = manual integration (+) = signals summed

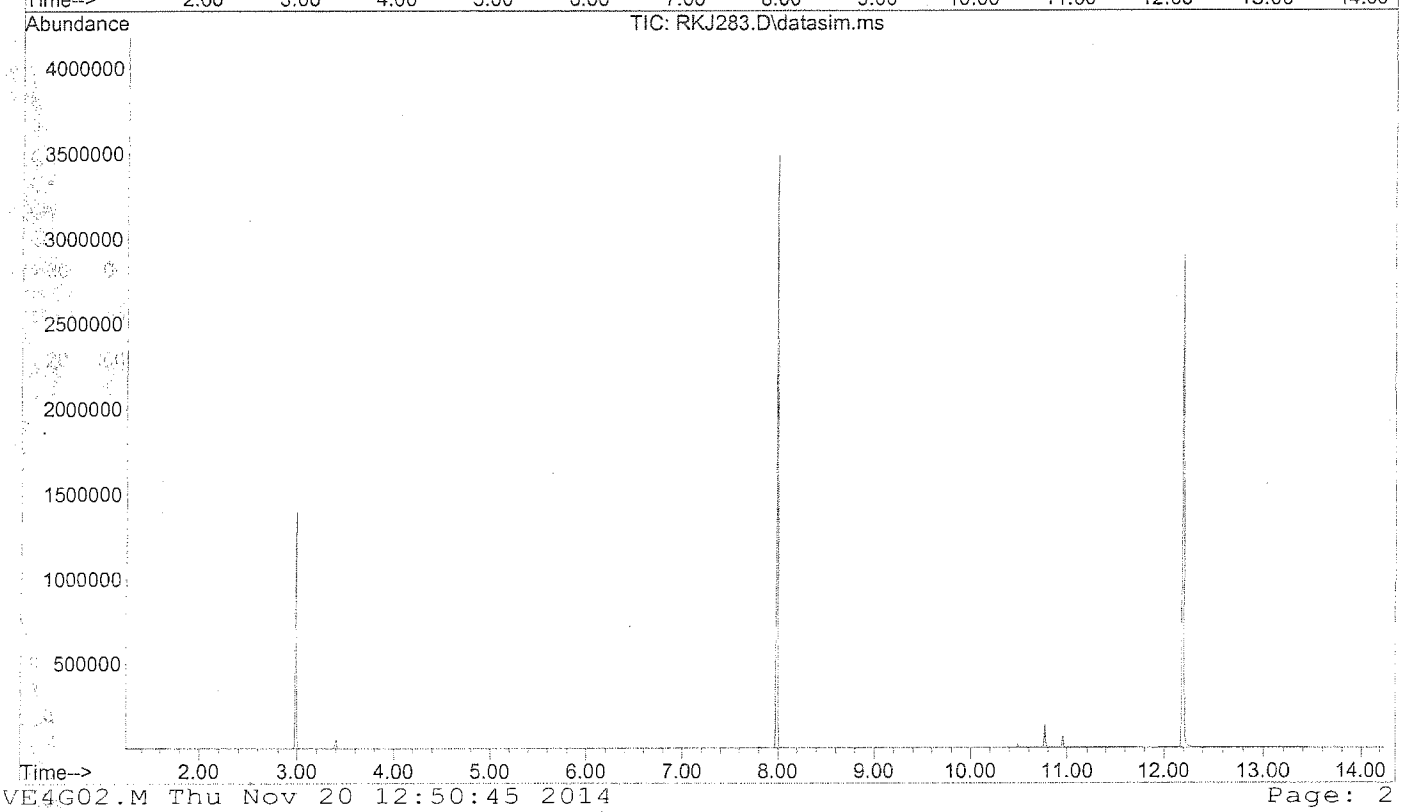
Largest Peak identification: See #2 peak on page 9006

Quantitation Report (QT Reviewed)

Data File : D:\DATA\14K19\RKJ283.D
Acq On : 19 Nov 2014 17:42
Sample : 14J130-01
Misc : DEISEL EXTRACT
Integrator: RTE
Quant Time: Nov 20 12:50:40 2014
Quant Results File: SVE4G02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES
QLast Update : Thu Jul 03 14:34:50 2014
Response via : Initial Calibration
DataAcq Meth:SVE4G02S.M

Vial: 2
Operator: KVu
Inst : E4
Multiplr: 1.00






9002

# LSC Area Percent Report

Data Path : D:\DATA\14K19\
Data File : RKJ283.D
Acq On : 19 Nov 2014 17:42
Operator : KVu
Sample : 14J130-01
Misc : DEISEL EXTRACT
ALS Vial : 2 Sample Multiplier: 1

Integration Parameters: rteint.p
Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0

Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\SVE4G02.M
Title : SEMIVOLATILES

Signal : TIC: RKJ283.D\data.ms

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.468 | 249 | 253 | 262 | rBV | 6204720 | 4758390 | 38.26% | 9.619% |
| 2 | 2.986 | 348 | 352 | 358 | rVB | 4403295 | 3337710 | 26.84% | 6.747% |
| 3 | 3.471 | 429 | 449 | 452 | rBV | 3621055 | 12436929 | 100.00% | 25.140% |
| 4 | 4.215 | 596 | 600 | 604 | rBV | 4779907 | 4239317 | 34.09% | 8.569% |
| 5 | 6.245 | 1002 | 1008 | 1012 | rBV | 5121975 | 4850904 | 39.00% | 9.806% |
| 6 | 7.986 | 1361 | 1367 | 1371 | rBV2 | 5891610 | 5065273 | 40.73% | 10.239% |
| 7 | 10.772 | 1948 | 1954 | 1958 | rBV | 6635599 | 5987801 | 48.15% | 12.104% |
| 8 | 10.956 | 1987 | 1992 | 1998 | rBV | 3447803 | 3110686 | 25.01% | 6.288% |
| 9 | 12.193 | 2235 | 2242 | 2259 | rVB | 4518064 | 5683788 | 45.70% | 11.489% |

Sum of corrected areas: 49470798

Signal : TIC: RKJ283.D\datasim.ms

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|

No peaks were detected using the above RTE integration parameters!



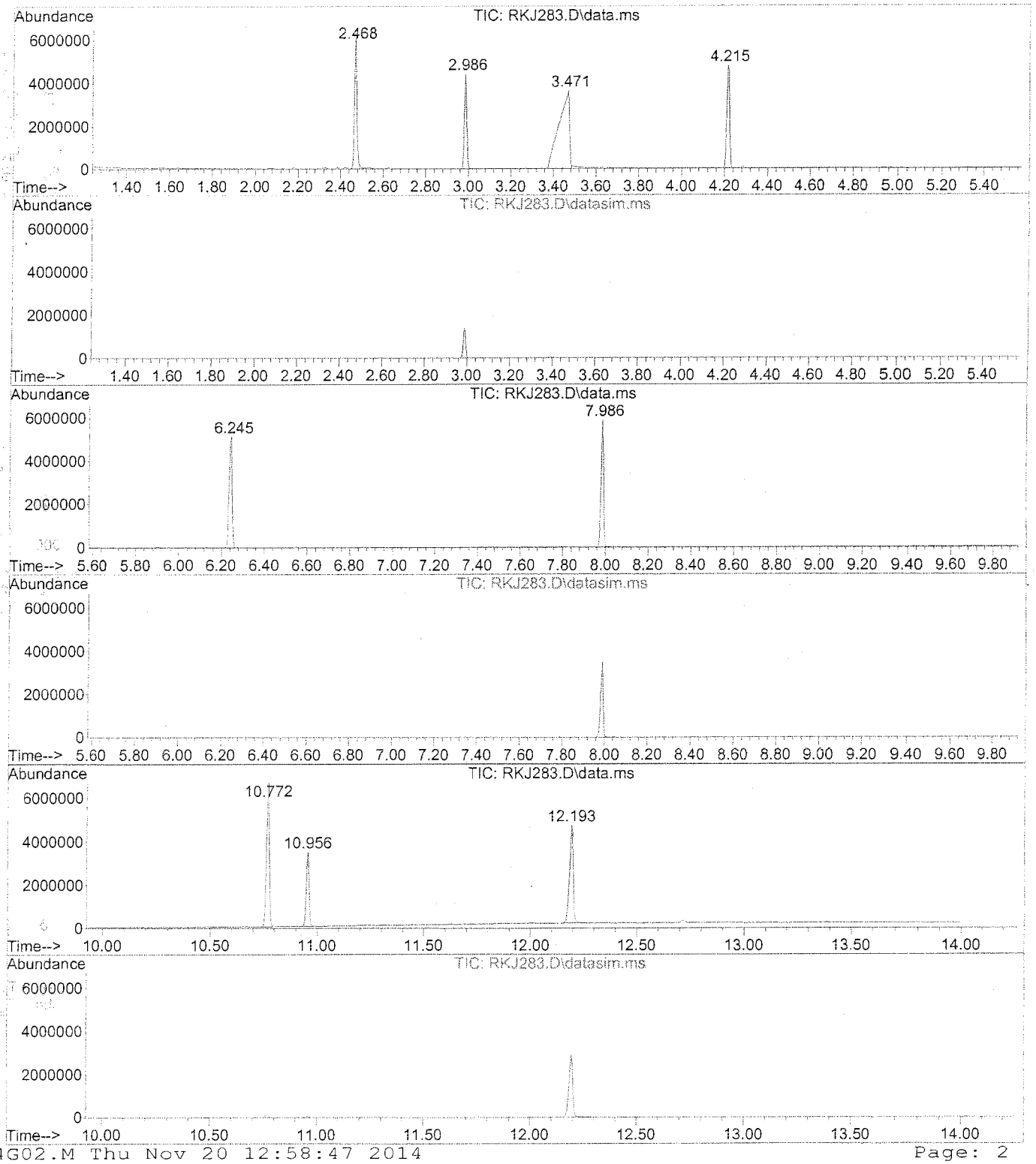
9003

LSC Report - Integrated Chromatogram

Data Path : D:\DATA\14K19\
Data File : RKJ283.D
Acq On : 19 Nov 2014 17:42
Operator : KVu
Sample : 14J130-01
Misc : DEISEL EXTRACT
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p






9804

# Library Search Compound Report

Data Path : D:\DATA\14K19\
Data File : RKJ283.D
Acq On : 19 Nov 2014 17:42
Operator : KVu
Sample : 14J130-01
Misc : DEISEL EXTRACT
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

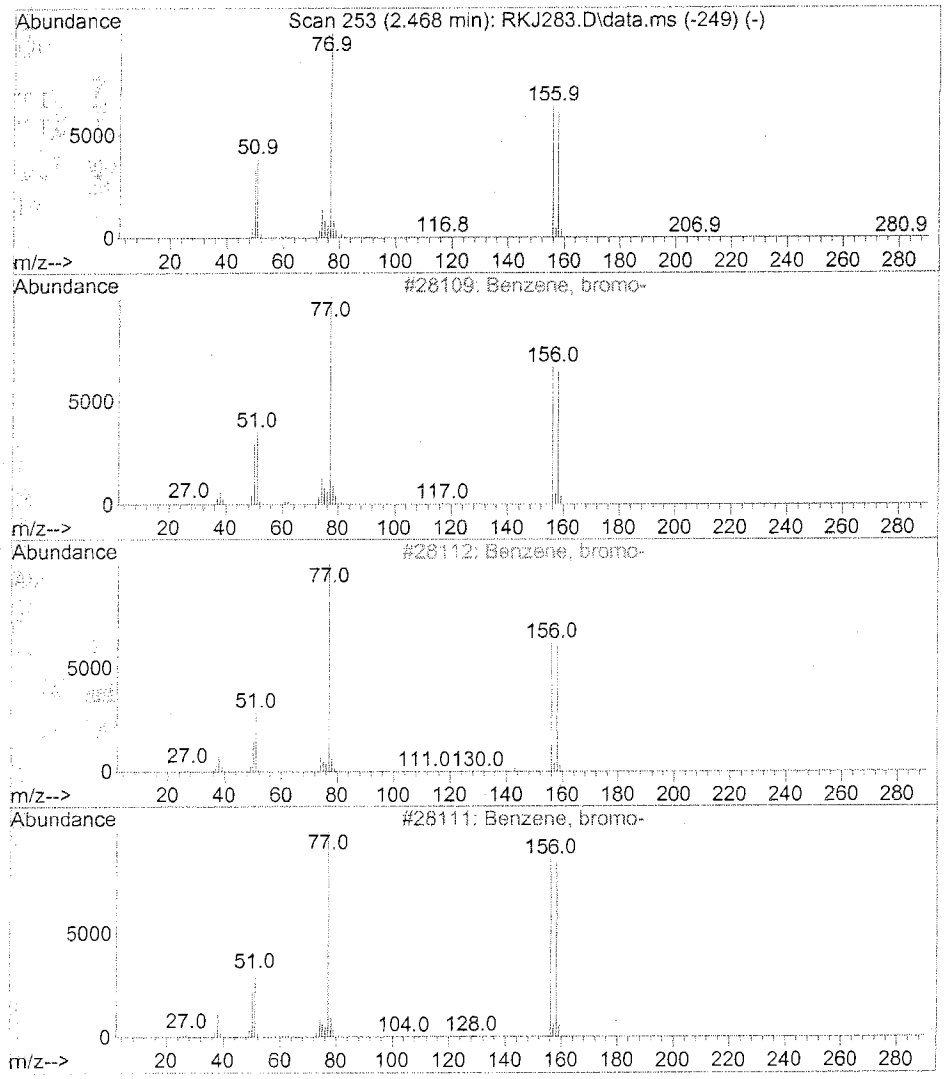
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

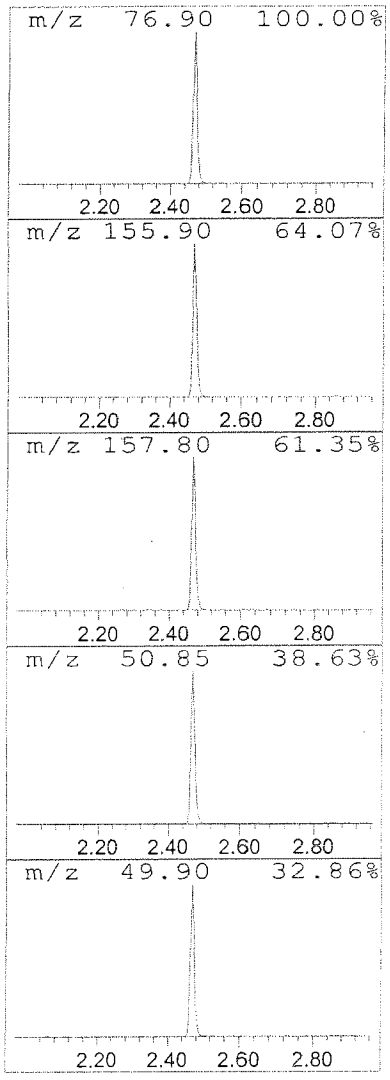
**********

Peak Number 1 Benzene, bromo- Concentration Rank 2

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 2.468 | 57.03 ppm | 4758390 | 1,4-Dichlorobenzene-d4 | 2.986 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 97 |
| 2 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 95 |
| 3 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 94 |
| 4 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 90 |
| 5 | s-Hydroxymethylthiobenzoate | 168 | C8H8O2S | 023853-33-0 | 25 |



# Library Search Compound Report

Data Path : D:\DATA\14K19\
Data File : RKJ283.D
Acq On : 19 Nov 2014 17:42
Operator : KVu
Sample : 14J130-01
Misc : DEISEL EXTRACT
ALS Vial : 2 Sample Multiplier: 1

* is metabolite of ethylene glycol monobutyl ether

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

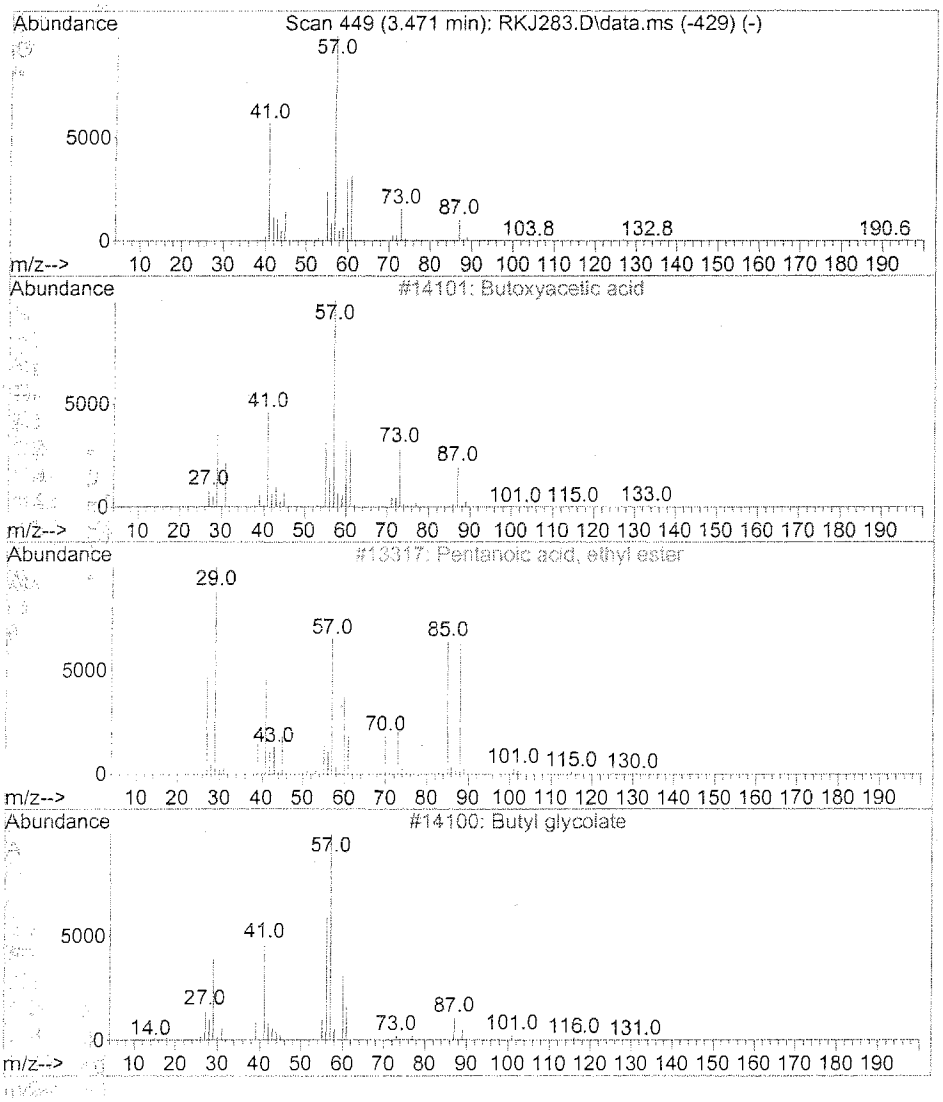
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

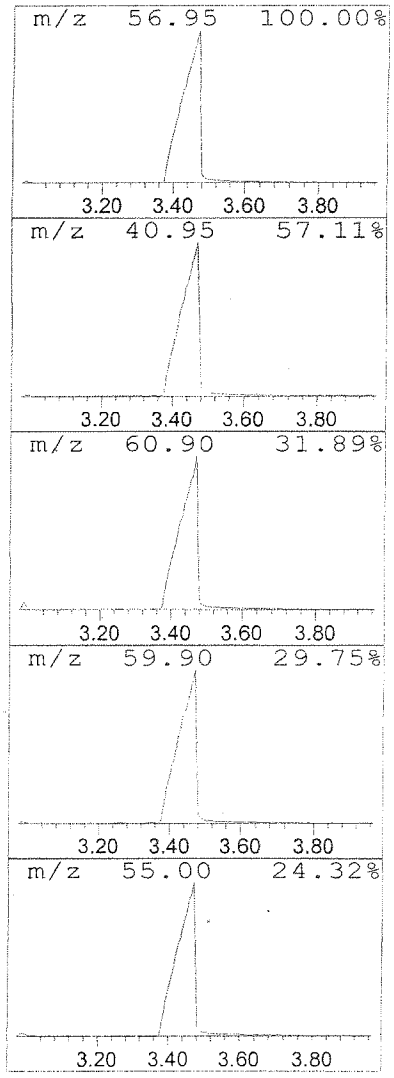
**********

Peak Number 2 Butoxyacetic acid Concentration Rank 1

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 3.471 | 149.05 ppm | 12436900 | 1,4-Dichlorobenzene-d4 | 2.986 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Butoxyacetic acid * | 132 | C6H12O3 | 002516-93-0 | 43 |
| 2 | Pentanoic acid, ethyl ester | 130 | C7H14O2 | 000539-82-2 | 38 |
| 3 | Butyl glycolate | 132 | C6H12O3 | 007397-62-8 | 33 |
| 4 | 1-Propanol, 2,2-dimethyl- | 88 | C5H12O | 000075-84-3 | 22 |
| 5 | 1-Propanol, 2,2-dimethyl- | 88 | C5H12O | 000075-84-3 | 22 |



# Library Search Compound Report

Data Path : D:\DATA\14K19\
Data File : RKJ283.D
Acq On : 19 Nov 2014 17:42
Operator : KVu
Sample : 14J130-01
Misc : DEISEL EXTRACT
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

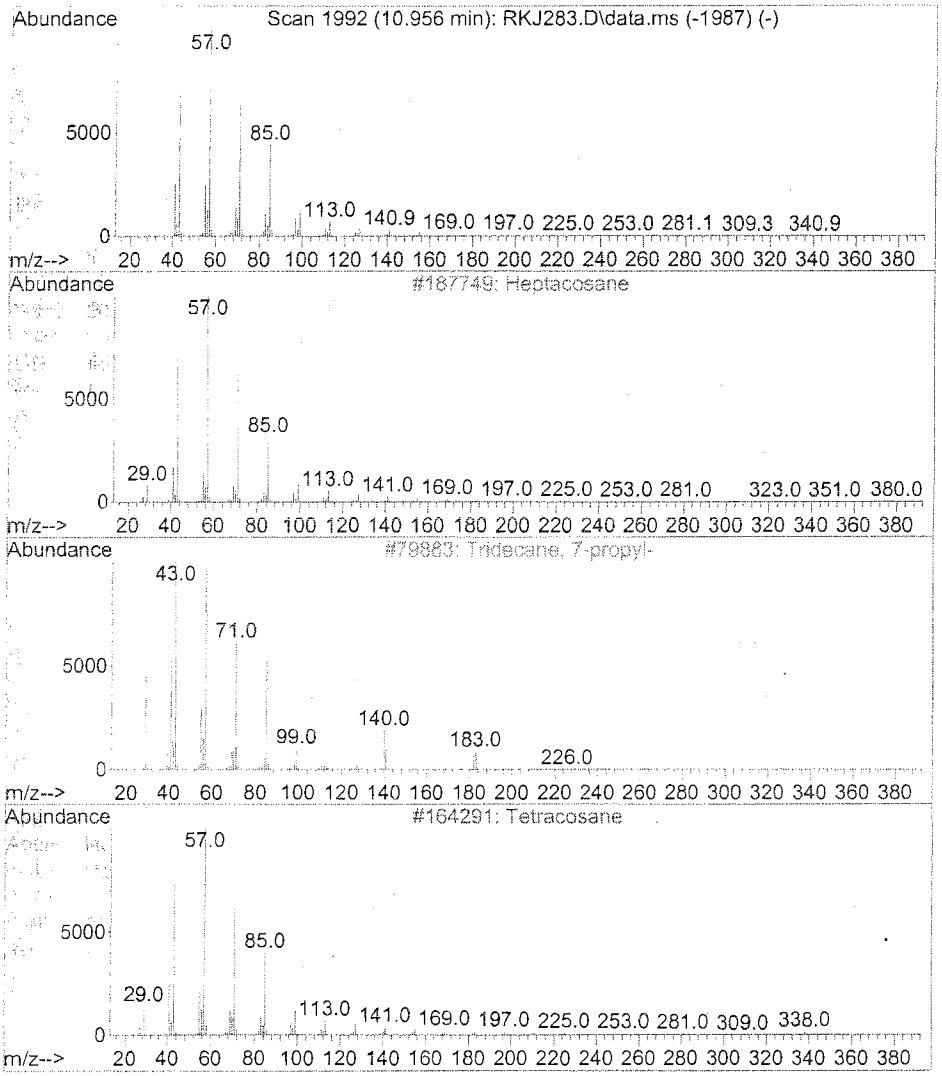
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

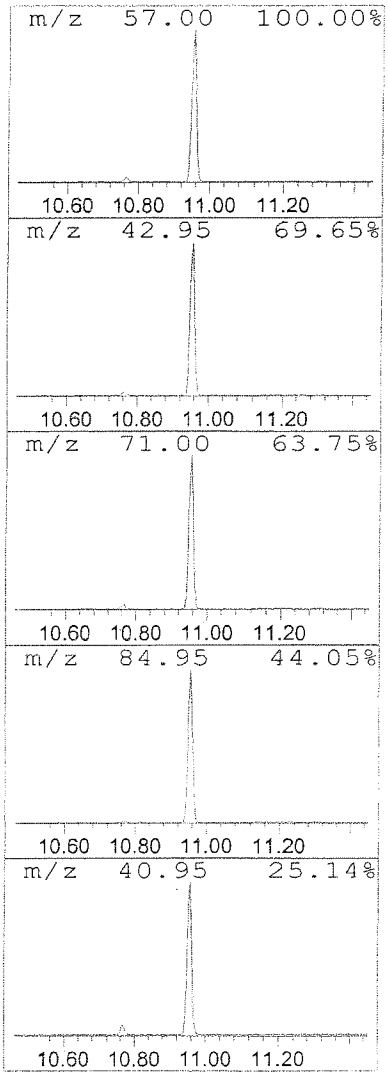
**********

Peak Number 3 Heptacosane Concentration Rank 3

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 10.956 | 20.78 ppm | 3110690 | Chrysene-d12 | 10.772 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Heptacosane | 380 | C27H56 | 000593-49-7 | 91 |
| 2 | Tridecane, 7-propyl- | 226 | C16H34 | 055045-09-5 | 91 |
| 3 | Tetracosane | 338 | C24H50 | 000646-31-1 | 91 |
| 4 | Octacosane | 394 | C28H58 | 000630-02-4 | 91 |
| 5 | Tridecane, 6-propyl- | 226 | C16H34 | 055045-10-8 | 90 |



Tentatively Identified Compound (LSC) summary

Data Path : D:\DATA\14K19\
Data File : RKJ283.D
Acq On : 19 Nov 2014 17:42
Operator : KVu
Sample : 14J130-01
Misc : DEISEL EXTRACT
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

| TIC Top Hit name | RT | EstConc | Units | Response | Internal Standard # | RT | Resp | Conc |
|---|---|---|---|---|---|---|---|---|
| Benzene, bromo- | 2.468 | 57.0 | ppm | 4758390 | 1 | 2.986 | 3337710 | 40.0 |
| Butoxyacetic acid | 3.471 | 149.0 | ppm | 12436900 | 1 | 2.986 | 3337710 | 40.0 |
| Heptacosane | 10.956 | 20.8 | ppm | 3110690 | 5 | 10.772 | 5987800 | 40.0 |

Quantitation Report (QT Reviewed)

Data File : D:\DATA\14K19\RKJ284.D
Acq On : 19 Nov 2014 18:02
Sample : 14J130-02
Misc : DEISEL EXTRACT
Integrator: RTE
Quant Time: Nov 20 12:51:11 2014
Quant Results File: SVE4G02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES
QLast Update : Thu Jul 03 14:34:50 2014
Response via : Initial Calibration
DataAcq Meth:SVE4G02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) 1,4-Dichlorobenzene-d4 | 2.986 | 152 | 565849 | 40.00 ppm | -0.02 |
| 21) Naphthalene-d8 | 4.215 | 136 | 2116743 | 40.00 ppm | -0.02 |
| 41) Acenaphthene-d10 | 6.245 | 164 | 1222581 | 40.00 ppm | -0.02 |
| 71) Phenanthrene-d10 | 7.986 | 188 | 2160718 | 40.00 ppm | 0.00 |
| 87) Chrysene-d12 | 10.767 | 240 | 2052945 | 40.00 ppm | -0.01 |
| 97) Perylene-d12 | 12.188 | 264 | 1833544 | 40.00 ppm | -0.02 |
| System Monitoring Compounds | | | | | |
| 5) 2-Fluorophenol | 0.000 | 112 | 0 | 0.00 ppm | |
| Spiked Amount 30.000 | | | Recovery | = 0.00% | |
| 6) Phenol-d5 | 0.000 | 99 | 0 | 0.00 ppm | |
| Spiked Amount 30.000 | | | Recovery | = 0.00% | |
| 12) 1,2-Dichlorobenzene-d4 | 3.121 | 152 | 420 | 0.03 ppm | -0.03 |
| Spiked Amount 10.000 | | | Recovery | = 0.30% | |
| 22) Nitrobenzene-d5 | 3.442 | 82 | 145 | 0.01 ppm | -0.06 |
| Spiked Amount 10.000 | | | Recovery | = 0.10% | |
| 46) 2-Fluorobiphenyl | 5.490 | 172 | 79 | 0.00 ppm | 0.03 |
| Spiked Amount 10.000 | | | Recovery | = 0.00% | |
| 75) 2,4,6-Tribromophenol | 0.000 | 330 | 0 | 0.00 ppm | |
| Spiked Amount 30.000 | | | Recovery | = 0.00% | |
| 90) Terphenyl-d14 | 9.694 | 244 | 57 | 0.00 ppm | 0.00 |
| Spiked Amount 10.000 | | | Recovery | = 0.00% | |

Target Compounds Qvalue

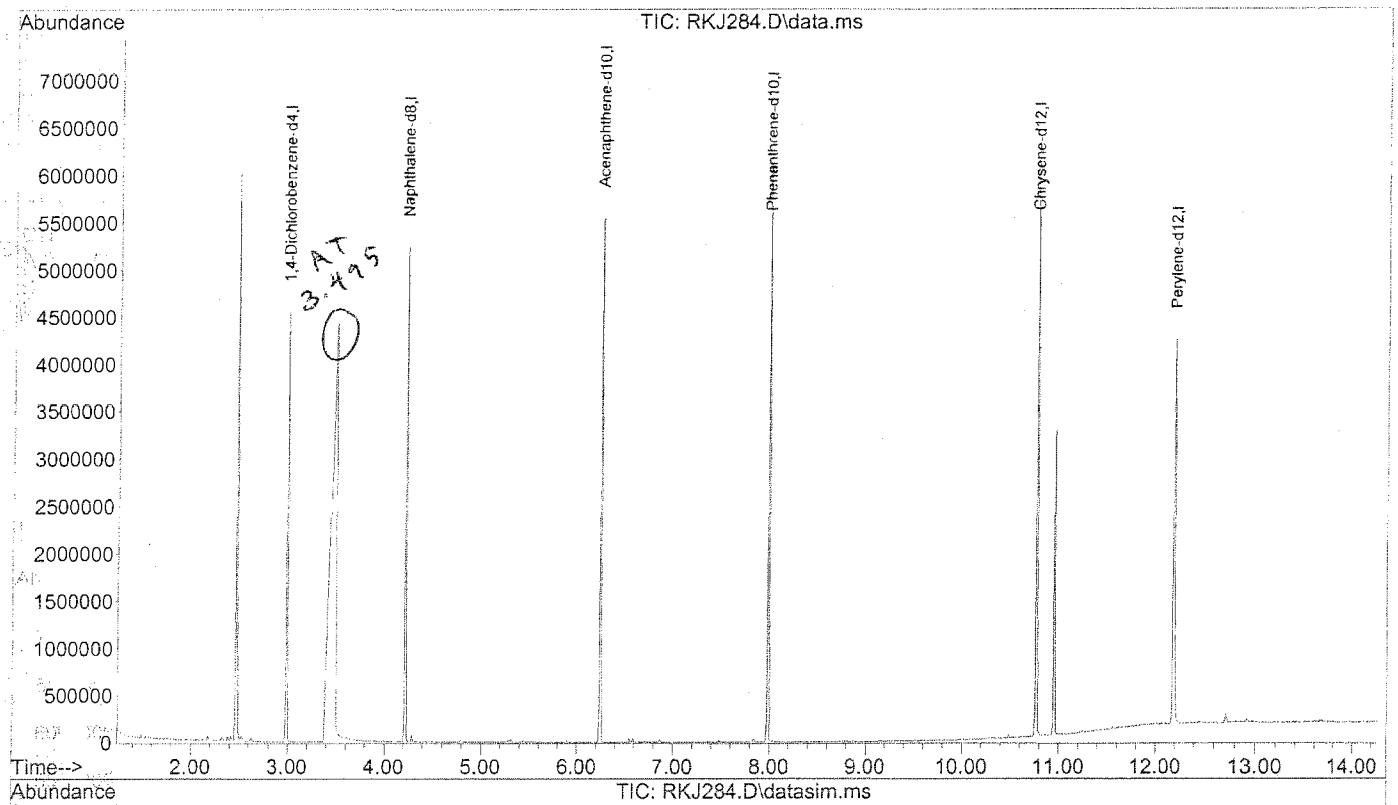
(#) = qualifier out of range (m) = manual integration (+) = signals summed

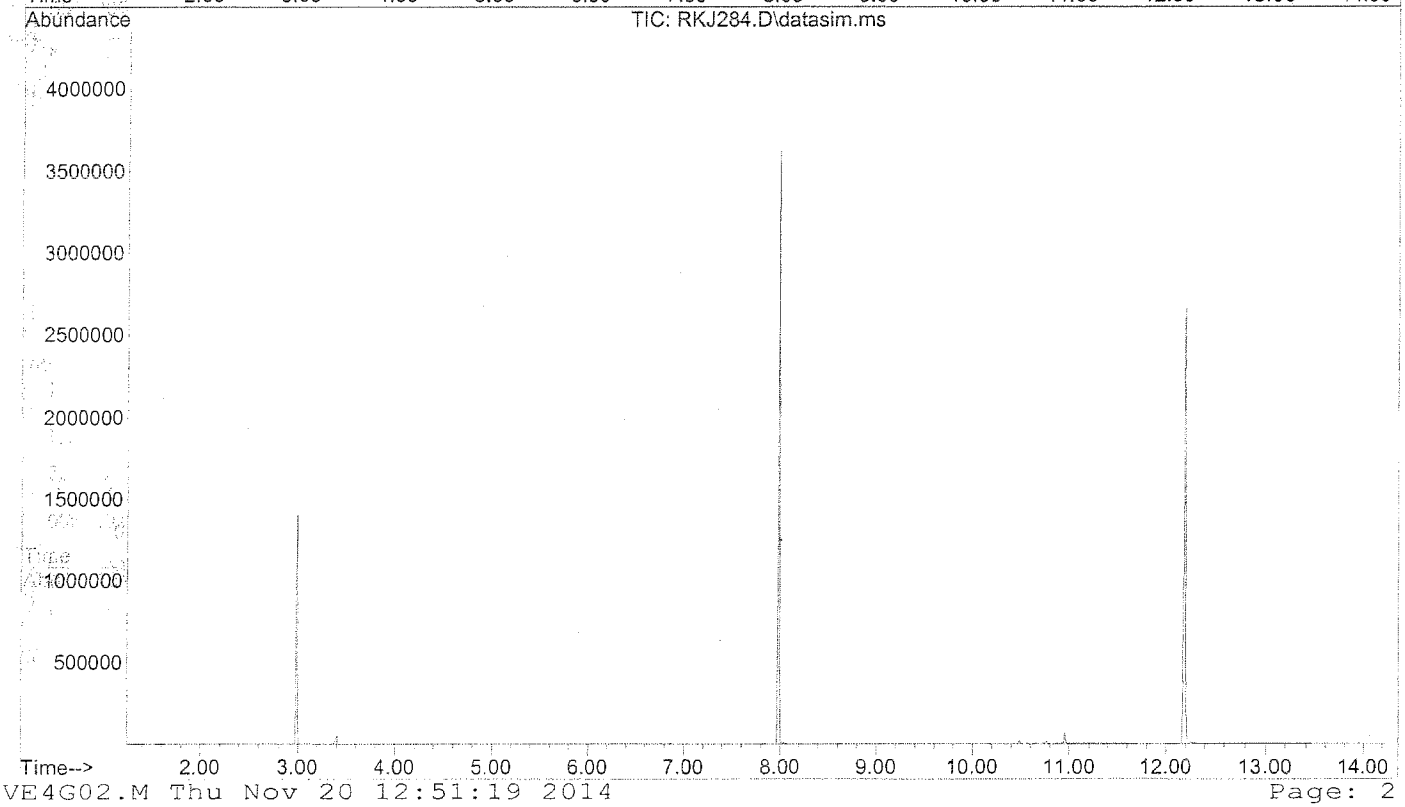
Large peak identification: See # 2 peak on page 9014

Quantitation Report (QT Reviewed)

Data File : D:\DATA\14K19\RKJ284.D
Acq On : 19 Nov 2014 18:02
Sample : 14J130-02
Misc : DEISEL EXTRACT
Integrator: RTE
Quant Time: Nov 20 12:51:11 2014
Quant Results File: SVE4G02.RES
Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES
QLast Update : Thu Jul 03 14:34:50 2014
Response via : Initial Calibration
DataAcq Meth:SVE4G02S.M

Vial: 3
Operator: KVu
Inst : E4
Multiplr: 1.00






9010

# LSC Area Percent Report

Data Path : D:\DATA\14K19\
Data File : RKJ284.D
Acq On : 19 Nov 2014 18:02
Operator : KVu
Sample : 14J130-02
Misc : DEISEL EXTRACT
ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: rteint.p
Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.2
Stop Thrs : 0

Filtering: 5
Min Area: 1 % of largest Peak
Max Peaks: 100
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : C:\msdchem\1\METHODS\SVE4G02.M
Title : SEMIVOLATILES

Signal : TIC: RKJ284.D\data.ms

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.468 | 249 | 253 | 262 | rBV | 6024436 | 4686077 | 25.60% | 8.545% |
| 2 | 2.986 | 348 | 352 | 358 | rBV | 4541844 | 3506279 | 19.15% | 6.394% |
| 3 | 3.495 | 429 | 454 | 456 | rBV | 4425201 | 18307596 | 100.00% | 33.384% |
| 4 | 4.215 | 595 | 600 | 604 | rBV | 5232280 | 4489834 | 24.52% | 8.187% |
| 5 | 6.245 | 1002 | 1008 | 1012 | rBV | 5547277 | 5138045 | 28.07% | 9.369% |
| 6 | 7.986 | 1361 | 1367 | 1371 | rBV | 6234607 | 5432373 | 29.67% | 9.906% |
| 7 | 10.767 | 1948 | 1953 | 1957 | rBV | 5962760 | 5314070 | 29.03% | 9.690% |
| 8 | 10.951 | 1986 | 1991 | 1996 | rBV | 3219814 | 2907322 | 15.88% | 5.302% |
| 9 | 12.188 | 2234 | 2241 | 2252 | rBV | 4065867 | 5057952 | 27.63% | 9.223% |

Sum of corrected areas: 54839548

Signal : TIC: RKJ284.D\datasim.ms

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|

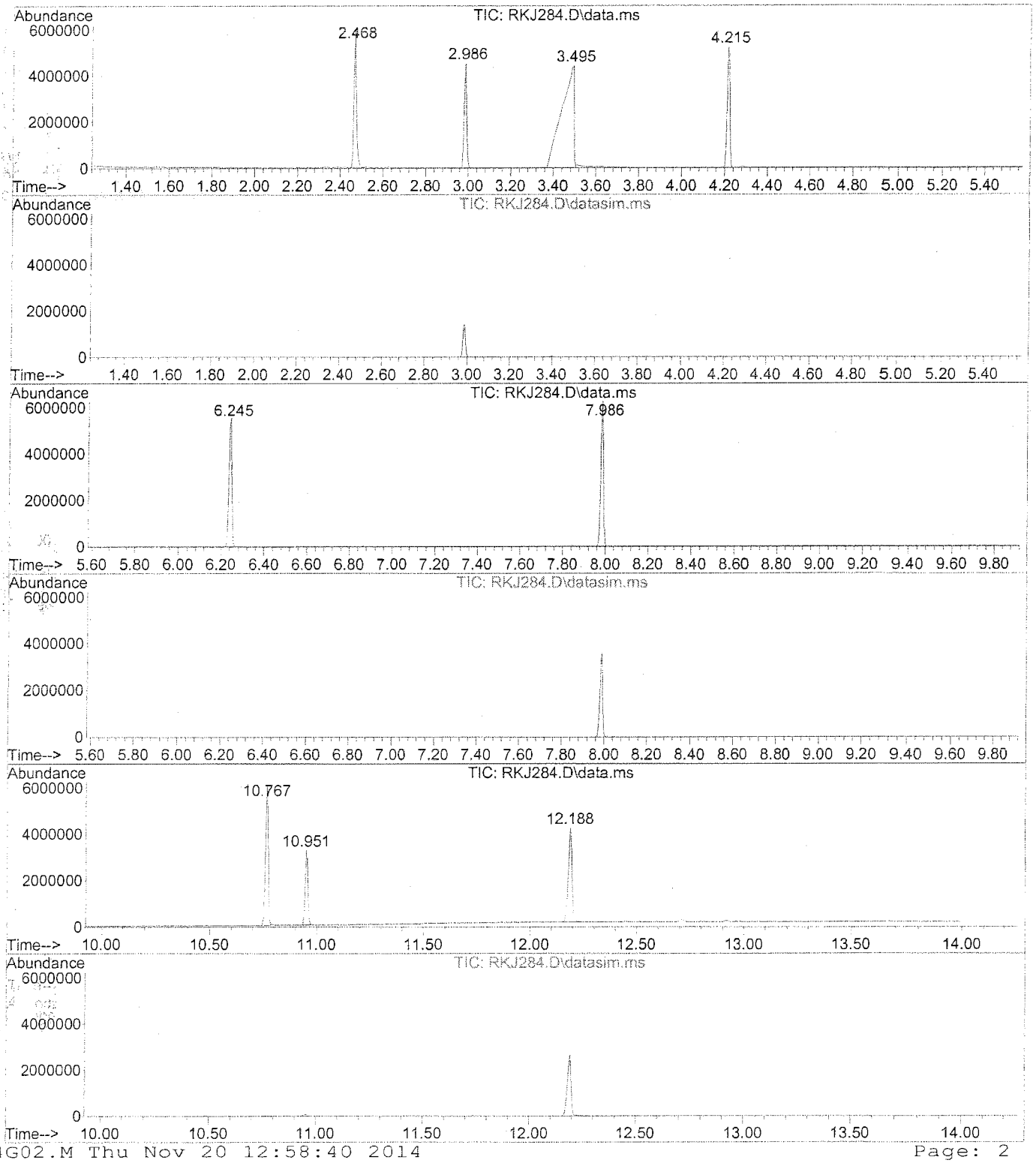
No peaks were detected using the above RTE integration parameters!

LSC Report - Integrated Chromatogram

Data Path : D:\DATA\14K19\
Data File : RKJ284.D
Acq On : 19 Nov 2014 18:02
Operator : KVu
Sample : 14J130-02
Misc : DEISEL EXTRACT
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p






9012

# Library Search Compound Report

Data Path : D:\DATA\14K19\
Data File : RKJ284.D
Acq On : 19 Nov 2014 18:02
Operator : KVu
Sample : 14J130-02
Misc : DEISEL EXTRACT
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

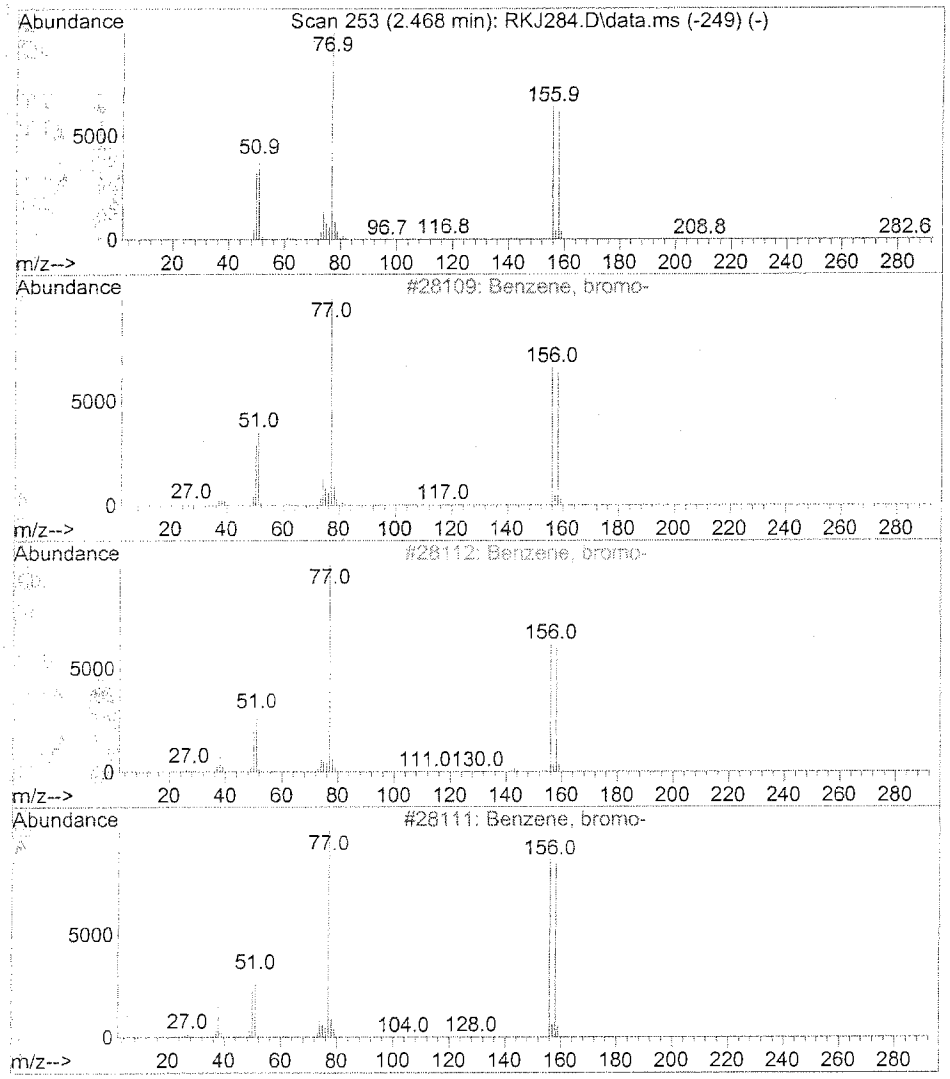
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

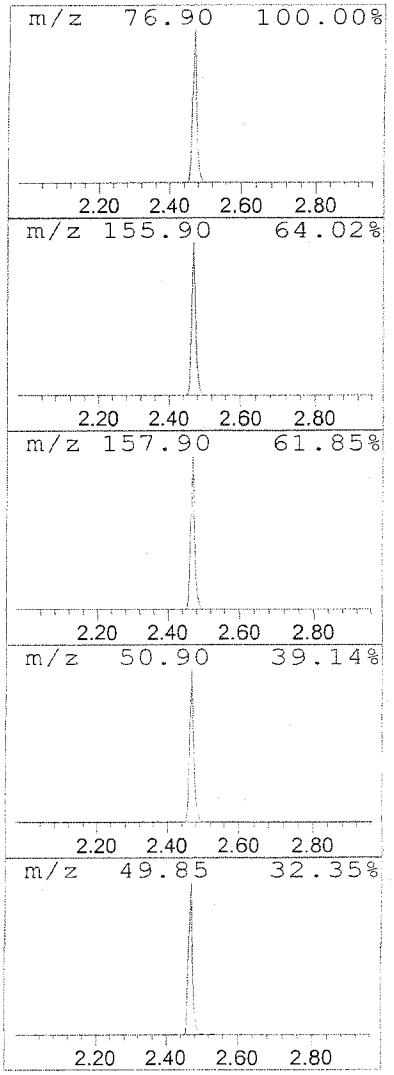
**********

Peak Number 1 Benzene, bromo- Concentration Rank 2

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 2.468 | 53.46 ppm | 4686080 | 1,4-Dichlorobenzene-d4 | 2.986 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 97 |
| 2 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 95 |
| 3 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 94 |
| 4 | Benzene, bromo- | 156 | C6H5Br | 000108-86-1 | 91 |
| 5 | s-Hydroxymethylthiobenzoate | 168 | C8H8O2S | 023853-33-0 | 25 |



# Library Search Compound Report

Data Path : D:\DATA\14K19\
Data File : RKJ284.D
Acq On : 19 Nov 2014 18:02
Operator : KVu
Sample : 14J130-02
Misc : DEISEL EXTRACT
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

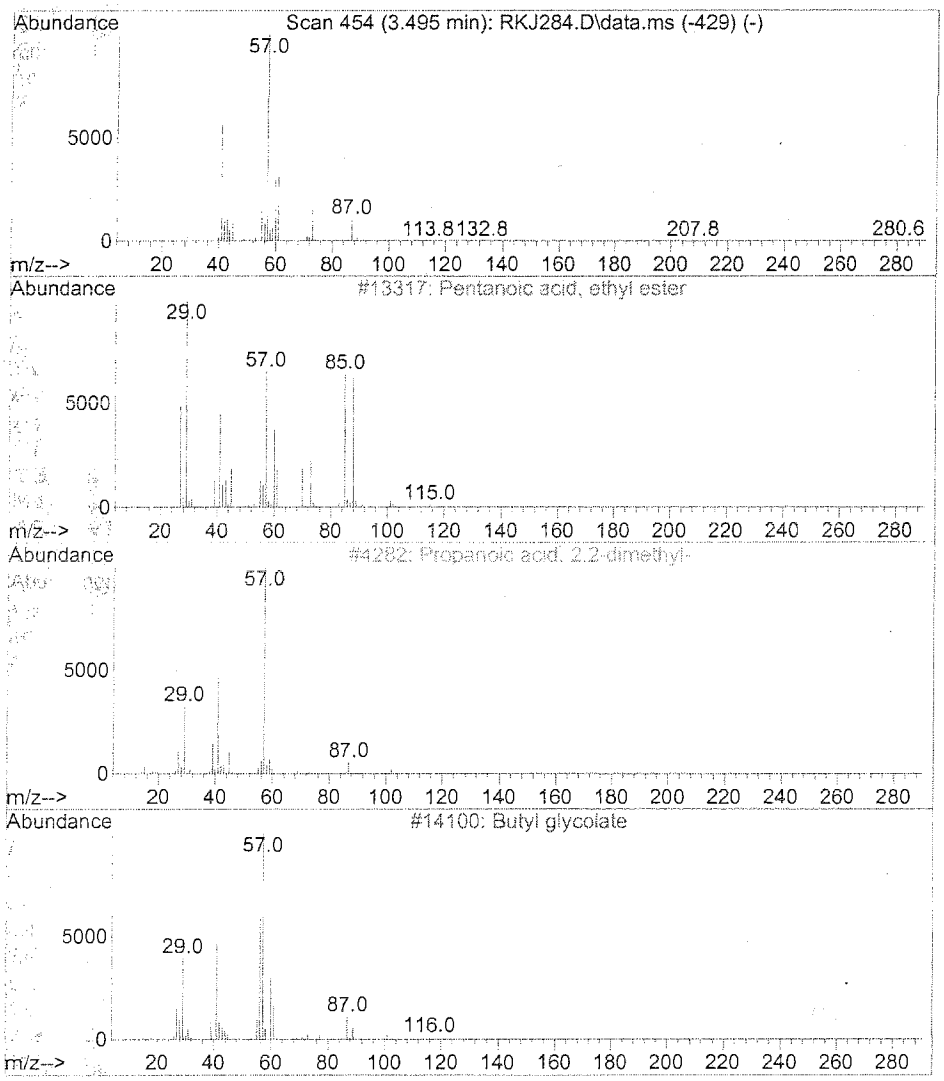
* is metabolite of ethylene glycol monobutyl ether

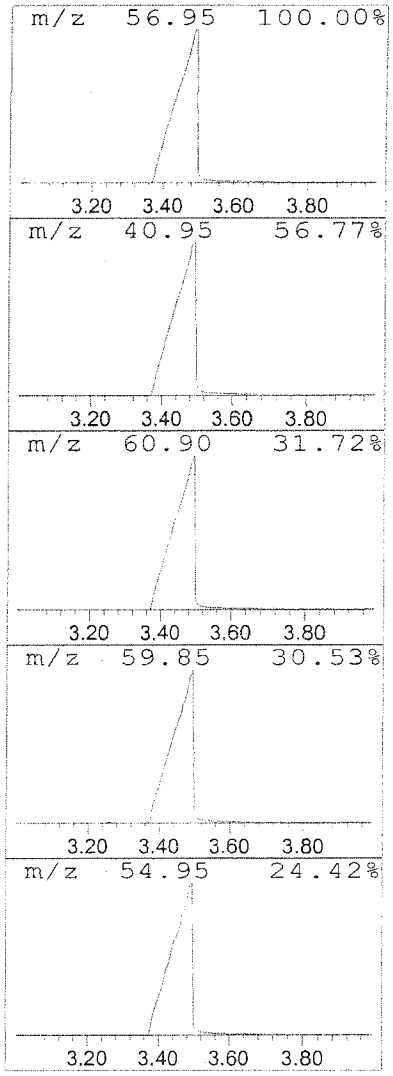
**********

Peak Number 2 Pentanoic acid, ethyl ester Concentration Rank 1

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 3.495 | 208.85 ppm | 18307600 | 1,4-Dichlorobenzene-d4 | 2.986 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Pentanoic acid, ethyl ester | 130 | C7H14O2 | 000539-82-2 | 38 |
| 2 | Propanoic acid, 2,2-dimethyl- | 102 | C5H10O2 | 000075-98-9 | 35 |
| 3 | Butyl glycolate | 132 | C6H12O3 | 007397-62-8 | 33 |
| 4 | Butoxyacetic acid * | 132 | C6H12O3 | 002516-93-0 | 32 |
| 5 | 1-Propanol, 2,2-dimethyl- | 88 | C5H12O | 000075-84-3 | 22 |






9014

# Library Search Compound Report

Data Path : D:\DATA\14K19\
Data File : RKJ284.D
Acq On : 19 Nov 2014 18:02
Operator : KVu
Sample : 14J130-02
Misc : DEISEL EXTRACT
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

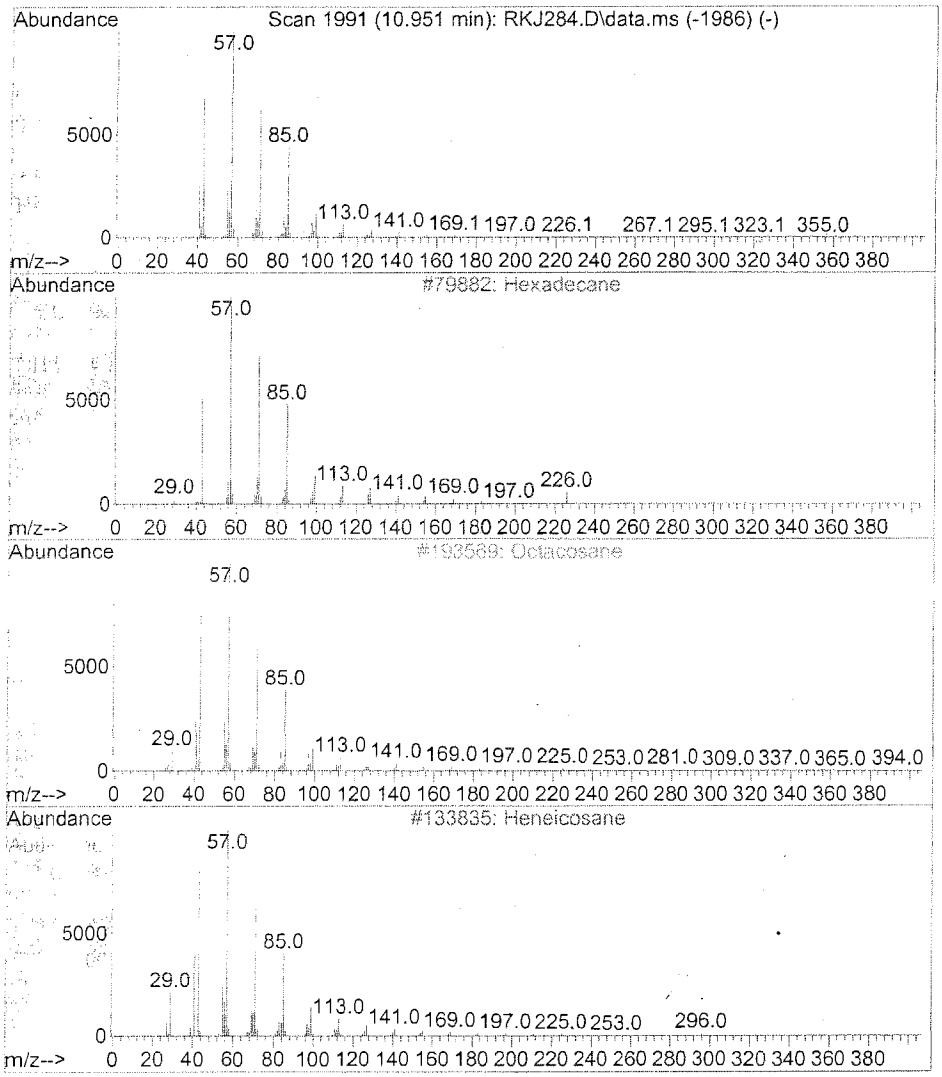
TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

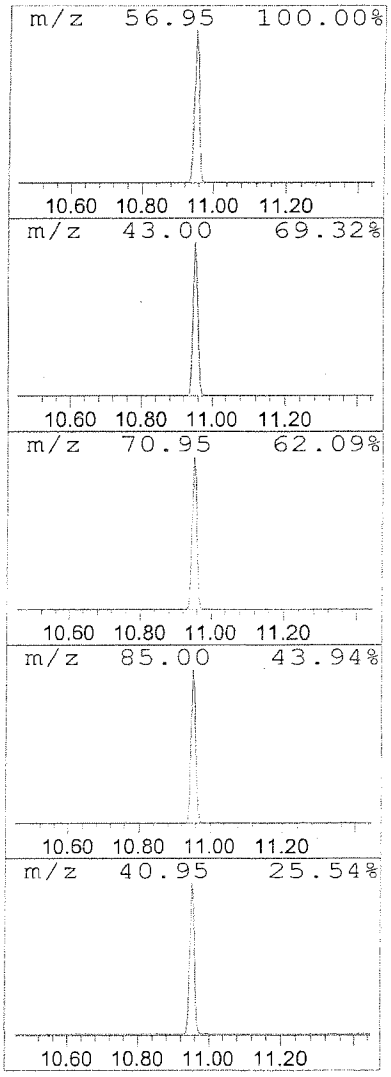
**********

Peak Number 3 Hexadecane Concentration Rank 3

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 10.951 | 21.88 ppm | 2907320 | Chrysene-d12 | 10.767 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Hexadecane | 226 | C16H34 | 000544-76-3 | 93 |
| 2 | Octacosane | 394 | C28H58 | 000630-02-4 | 91 |
| 3 | Heneicosane | 296 | C21H44 | 000629-94-7 | 91 |
| 4 | Heptacosane | 380 | C27H56 | 000593-49-7 | 91 |
| 5 | Tridecane, 6-propyl- | 226 | C16H34 | 055045-10-8 | 90 |



Tentatively Identified Compound (LSC) summary

Data Path : D:\DATA\14K19\
Data File : RKJ284.D
Acq On : 19 Nov 2014 18:02
Operator : KVu
Sample : 14J130-02
Misc : DEISEL EXTRACT
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\SVE4G02.M
Quant Title : SEMIVOLATILES

TIC Library : C:\Database\NIST08.L
TIC Integration Parameters: lscint.p

| TIC Top Hit name | RT | EstConc | Units | Response | Internal Standard # | RT | Resp | Conc |
|---|---|---|---|---|---|---|---|---|
| Benzene, bromo- | 2.468 | 53.5 | ppm | 4686080 | 1 | 2.986 | 3506280 | 40.0 |
| Pentanoic acid,.. ✓ | 3.495 | 208.9 | ppm | 18307600 | 1 | 2.986 | 3506280 | 40.0 |
| Hexadecane | 10.951 | 21.9 | ppm | 2907320 | 5 | 10.767 | 5314070 | 40.0 |

See page 9014 for tentatively identified compounds

# TABLE OF CONTENTS

**CLIENT:** **BATTELLE**

**PROJECT:** **RED HILL PHASE 1B**

**SDG:** **14J144**


| SECTION | | PAGE |
|---|---|---|
| Cover Letter, COC/Sample Receipt Form | | 1000 – 1006 |
| GC/MS-VOA | ** | 2000 – |
| GC/MS-SVOA | METHOD 3520C/8270C SIM | 3000 – 3073 |
| GC-VOA | METHOD 5030B/8015B | 4000 – 4043 |
| GC-SVOA | METHOD 3520C/8015B | 5000 – 5062 |
| HPLC | ** | 6000 – |
| METALS | ** | 7000 – |
| WET | ** | 8000 – |
| OTHERS | ** | 9000 – |


** - Not Requested

**EMAX**
**LABORATORIES, INC.**
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 11-07-2014
EMAX Batch No.: 14J144

Attn: Carolyn Scala

Battelle
301 South State St., Suite N001
Newton PA 18940

Subject: Laboratory Report
Project: Red Hill Phase 1b

---

Enclosed is the Laboratory report for samples received on 10/22/14.
The data reported relate only to samples listed below :

| Sample ID | Control # | Col Date | Matrix | Analysis |
|---|---|---|---|---|
| RHMW06-GW-01 | J144-01 | 10/21/14 | WATER | TPH GASOLINE |
| | | | | TPH |
| | | | | PAH BY 8270C SIM ULTRA LOW |
| TB102114 | J144-02 | 10/21/14 | WATER | TPH GASOLINE |
| RHMW06-GW-01MS | J144-01M | 10/21/14 | WATER | TPH GASOLINE |
| | | | | TPH |
| | | | | PAH BY 8270C SIM ULTRA LOW |
| RHMW06-GW-01MSD | J144-01S | 10/21/14 | WATER | TPH GASOLINE |
| | | | | TPH |
| | | | | PAH BY 8270C SIM ULTRA LOW |

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

# CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. * 14J144

PROJECT CODE:

CLIENT: Battelle c/o Parsons
PROJECT: Red Hill 749435
COORDINATOR: Mitch Jensen
TEL: 802 380-1375 FAX: EMAIL:
SEND REPORT TO: Gary Wright
COMPANY: Parsons
ADDRESS:
EMAX PM: 1

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

TAT: ☐ Rush ____hrs. ☐ Rush ____days ☐ 7 days ☐ 14 days ☐ 21 days ☐ 30 days ☐ ____days ☐

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | TPH - GRO | TPH - DRO, RRO | PAHs | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RHMW06-GW-01 | Hawaii | 10/21/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | | | | | | no preservation |
| 2 | RHMW06-GW-01MS | " | 10/21/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | | | | | | " " |
| 3 | RHMW06-GW-01MSD | " | 10/21/14 | 1100 | 7 | | | GW | | 3 | 2 | 2 | | | | | | " " |
| 4 | TB102114 | " | 10/21/14 | 1100 | 1 | | | | ✓ | 1 | | | | | | | | " " |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | | |

Instructions: per contract w/ Battelle

| Cooler # | Temp. (°C) | Sample #s |
|---|---|---|
| 1 | 4.0° | |
| 2 | 5.7° | |

SAMPLER: Tim Terry / Environet

COURIER/AIRBILL: Fedex

| RELINQUISHED BY | Date | Time | RECEIVED BY |
|---|---|---|---|
| [signature] | 10/21/14 | 1530 | |
| | 10/22/14 | 09:15 | [signature] |

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

**SAMPLE RECEIPT FORM 1**

Reference Number: SM02.7.3

| Type of Delivery | Airbill / Tracking Number | ECN 14J144 |
|---|---|---|
| ☑ Fedex ☐ UPS ☐ GSO ☐ Others | (1) 8033 9937 1587 | Recipient I BATEZ |
| ☐ EMAX Courier ☐ Client Delivery | (2) 7801 4900 8803 | Date 10/22/14 Time 0915 |

**COC INSPECTION**

| | | | | | |
|---|---|---|---|---|---|
| ☑ Client Name | ☑ Client PM/FC | ☑ Sampler Name | ☑ Sampling Date/Time | ☑ Sample ID | ☑ Matrix |
| ☑ Address | ☑ Tel # / Fax # | ☐ Courier Signature | ☑ Analysis Required | ☑ Preservative (if any) | ☐ TAT |
| Safety Issues (if any) | ☐ High concentrations expected | ☐ From Superfund Site | ☐ Rad screening required | | |

Note:

**PACKAGING INSPECTION**

| | | | | | |
|---|---|---|---|---|---|
| Container | ☑ Cooler (2) | ☐ Box | ☐ Other | | |
| Condition | ☑ Custody Seal | ☑ Intact | ☐ Damaged | | |
| Packaging | ☑ Bubble Pack | ☐ Styrofoam | ☐ Popcorn | ☑ Sufficient | ☑ Plastic Bag |
| Temperatures (Cool, ≤6 °C but not frozen) | A ☑ Cooler 1 4.0 °C | A ☑ Cooler 2 5.7 °C | ☐ Cooler 3 ____ °C | ☐ Cooler 4 ____ °C | ☐ Cooler 5 ____ °C |
| | ☐ Cooler 6 ____ °C | ☐ Cooler 7 ____ °C | ☐ Cooler 8 ____ °C | ☐ Cooler 9 ____ °C | ☐ Cooler 10 ____ °C |
| *Thermometer:* | *A - S/N* 130538505 | *B - S/N* ____ | *C - S/N* ____ | *D - S/N* ____ | |

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note:

**DISCREPANCIES**

| LabSampleID | LabSampleContainerID | Code | ClientSample Label ID / Information | Corrective Action |
|---|---|---|---|---|
| 2 | 22 | D1/D16 | | R1 |
| 1 | 13,15 | D10 | | R1 |

10/22/14

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

**NOTES/OBSERVATIONS:**

**LEGEND:**

☐ **Continue to next page.**

| Code | Description- Sample Management | Code | Description-Sample Management | Code | Description-Sample Management |
|---|---|---|---|---|---|
| D1 | Analysis is not indicated in label | D13 | Out of Holding Time | R1 | Proceed as indicated in ☑ COC ☐ Label |
| D2 | Analysis mismatch COC vs label | D14 | Bubble is >6mm | R2 | Refer to attached instruction |
| D3 | Sample ID mismatch COC vs label | D15 | No trip blank in cooler | R3 | Cancel the analysis |
| D4 | Sample ID is not indicated in ____ | D16 | Preservation not indicated in label | R4 | Use vial with smallest bubble first |
| D5 | Container -[improper] [leaking] [broken] | D17 | Preservation mismatch COC vs label | R5 | Log-in with latest sampling date and time+1 min |
| D6 | Date/Time is not indicated in ____ | D18 | Insufficient chemical preservative | R6 | Adjust pH as necessary |
| D7 | Date/Time mismatch COC vs label | D19 | Insufficient Sample | R7 | Filter and preserved as necessary |
| D8 | Sample listed in COC is not received | D20 | No filtration info for dissolved analysis | R8 | |
| D9 | Sample received is not listed in COC | D21 | No sample for moisture determination | R9 | |
| D10 | No initial/date on corrections in COC/label | D22 | | R10 | |
| D11 | Container count mismatch COC vs received | D23 | | R11 | |
| D12 | Container size mismatch COC vs received | D24 | | R12 | |

**REVIEWS:**

**Sample Labeling** [signature] **Date** 10/22/14 10-22-14

**SRF** [signature] **Date** 10/22/14

**PM** [signature] **Date** 10/22/14

FedEx Express **Package US Airbill**

FedEx Tracking Number 8033 9937 1587

**From**

Date 6/2/2014

Sender's Name MITCH JENSEN Phone 80[illegible] 972-[illegible]99

Company PARSONS GO[illegible]

Address 10235 S JORDAN GTWY STE 300 Dept./Floor/Suite/Room

City SOUTH JORDAN State UT ZIP 84095-4183

**Your Internal Billing Reference** 640016.0006.749435.0000.LD20D

**To**

Recipient's Name Sample Receiving Phone 310 618 8889

Company Emax Laboratories Inc.

Address 1835 W. 205th Street Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance State CA ZIP 90501

HOLD Weekday FedEx location address REQUIRED. **NOT available** for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. **Available ONLY** for FedEx Priority Overnight and FedEx 2Day to select locations.

0108334348

8033 9937 1587

SLA2

Form ID No. 0215

**Recipient's Copy**

**4 Express Package Service** * To most locations.

**NOTE: Service order has changed. Please select carefully.**

***Packages up to 150 lbs.***
*For packages over 150 lbs., use the FedEx Express Freight US Airbill.*

**Next Business Day**

- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☑ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

**2 or 3 Business Days**

- ☐ FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

**5 Packaging** * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☑ Other

**6 Special Handling and Delivery Signature Options**

☐ SATURDAY Delivery — **NOT available for** FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.
☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

**Does this shipment contain dangerous goods?**

☐ No ☐ Yes — attach Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging or placed in FedEx Drop Box.

☐ Cargo Aircraft Only

**7 Payment** *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Obtain recip. Acct. No. ☐

Total Packages ____ Total Weight ____ lbs. Credit Card Auth. ____

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

Rev. Date 2/12 • Part #163134 • ©1994–2012 FedEx • PRINTED IN U.S.A. SRS

fedex.com 1.800.GoFedEx 1.800.463.3339

1003

Pcs: 2 1 of 1
Emp#: 281073 Rt#: STA
399371587

Part # 156297-435 RIT2 08/14

ORIGIN ID:HNLA (801) 572-5999
PARSONS GOVT
10235 S JORDAN GTWY STE 300
SOUTH JORDAN, UT 840954188
UNITED STATES US

SHIP DATE: 21OCT14
ACTWGT: 46.0 LB
CAD: /POS1525
DIMS: 24x13x13 IN
BILL SENDER

TO SAMPLE RECEIVING
EMAX LABORATORIES
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889 REF:
INV:
PO: DEPT:

Recipient Copy

FedE
Expre

1 of 2
TRK# 0215 8033 9937 1587
## MASTER ##
WZ HHRA

WED - 22 OCT 10:3(
PRIORITY OVERNIGH

9050
CA-US LA.

1004

ORIGIN ID:HNLA (801) 572-5999
PARSONS GOVT

10235 S JORDAN GTWY STE 300

SOUTH JORDAN, UT 840954188
UNITED STATES US

SHIP DATE:
ACTWGT: 47.3 LB
CAD: /POS1525
DIMS: 24x13x13 IN

BILL SENDER

156297-435 RIT2 08/14

TO **SAMPLE RECEIVING**
**EMAX LABORATORIES**
**1835 W 205TH ST**

**TORRANCE CA 90501**

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx
Express

J14221409280 UV

2 of 2

MPS# 0681 7801 4900 8803

Mstr# 8033 0937 1587 0215

**WED - 22 OCT 10:30A**
**PRIORITY OVERNIGHT**

**WZ HHRA**

90501
CA-US LAX

## REPORTING CONVENTIONS

### DATA QUALIFIERS:

| Lab Qualifier | AFCEE Qualifier | Description |
|---|---|---|
| J | F | Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL. |
| N | | Indicates presumptive evidence of a compound. |
| B | B | Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level. |
| E | J | Indicates that the result is above the maximum calibration range. |
| * | * | Out of QC limit. |

**Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.**

### ACRONYMS AND ABBREVIATIONS:

| | |
|---|---|
| **CRDL** | Contract Required Detection Limit |
| **RL** | Reporting Limit |
| **MRL** | Method Reporting Limit |
| **MDL** | Method Detection Limit |
| **DL** | Detection Limit |
| **LOD** | Limit of Detection |
| **LOQ** | Limit of Quantitation |
| **DO** | Diluted out |

### DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

SDG#: 14J144

CASE NARRATIVE

Client : BATTELLE

Project : RED HILL PHASE 1B

SDG : 14J144

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

One (1) water sample was received on 10/22/14 for PAH BY 8270C SIM Ultra Low analysis, Method SW3520C/8270C SIM in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 and project SAP August 2014.

Holding Time
The sample was analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were evaluated and results were within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for SVJ034WL/C were all within QC limits.

Matrix QC Sample
A set of MS/MSD was analyzed with the samples in this SDG.
Percent recoveries for J144-01M/S were within project QC limits.

Surrogate
Surrogate was added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE

SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

Client : BATTELLE
Project : RED HILL PHASE 1B

SDG NO. : 14J144
Instrument ID : T-OFO

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | SVJ034WB | 1 | NA | 10/28/1410:13 | 10/23/1410:00 | RJF033 | REF014 | SVJ034W | Method Blank |
| LCS1W | SVJ034WL | 1 | NA | 10/28/1410:41 | 10/23/1410:00 | RJF034 | REF014 | SVJ034W | Lab Control Sample (LCS) |
| LCD1W | SVJ034WC | 1 | NA | 10/28/1411:08 | 10/23/1410:00 | RJF035 | REF014 | SVJ034W | LCS Duplicate |
| RHMW06-GW-01 | J144-01 | 1.06 | NA | 10/28/1412:26 | 10/23/1410:00 | RJF038 | REF014 | SVJ034W | Field Sample |
| RHMW06-GW-01MS | J144-01M | 1.11 | NA | 10/28/1413:52 | 10/23/1410:00 | RJF039 | REF014 | SVJ034W | Matrix Spike Sample (MS) |
| RHMW06-GW-01MSD | J144-01S | 0.98 | NA | 10/28/1414:22 | 10/23/1410:00 | RJF040 | REF014 | SVJ034W | MS Duplicate (MSD) |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/21/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/22/14 |
| Batch No. | : 14J144 | Date Extracted: | 10/23/14 10:00 |
| Sample ID: | RHMW06-GW-01 | Date Analyzed: | 10/28/14 12:26 |
| Lab Samp ID: | J144-01 | Dilution Factor: | 1.06 |
| Lab File ID: | RJF038 | Matrix : | WATER |
| Ext Btch ID: | SVJ034W | % Moisture : | NA |
| Calib. Ref.: | REF014 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.021 | 0.0053 | 0.011 |
| ACENAPHTHYLENE | ND | 0.021 | 0.0053 | 0.011 |
| ANTHRACENE | ND | 0.021 | 0.0053 | 0.011 |
| BENZO(A)ANTHRACENE | ND | 0.021 | 0.0053 | 0.011 |
| BENZO(A)PYRENE | ND | 0.021 | 0.0053 | 0.011 |
| BENZO(B)FLUORANTHENE | ND | 0.021 | 0.0053 | 0.011 |
| BENZO(K)FLUORANTHENE | ND | 0.021 | 0.0053 | 0.011 |
| BENZO(G,H,I)PERYLENE | ND | 0.021 | 0.0053 | 0.011 |
| CHRYSENE | ND | 0.021 | 0.0053 | 0.011 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.021 | 0.0053 | 0.011 |
| FLUORANTHENE | ND | 0.021 | 0.0053 | 0.011 |
| FLUORENE | ND | 0.021 | 0.0053 | 0.011 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.021 | 0.0053 | 0.011 |
| NAPHTHALENE | ND | 0.11 | 0.027 | 0.053 |
| PHENANTHRENE | ND | 0.021 | 0.0053 | 0.011 |
| PYRENE | ND | 0.021 | 0.0053 | 0.011 |
| 2-METHYLNAPHTHALENE | 0.0064J | 0.021 | 0.0053 | 0.011 |
| 1-METHYLNAPHTHALENE | ND | 0.021 | 0.0053 | 0.011 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.577 | 0.5300 | 109 | 50-135 |

Quantitation Report (QT Reviewed)

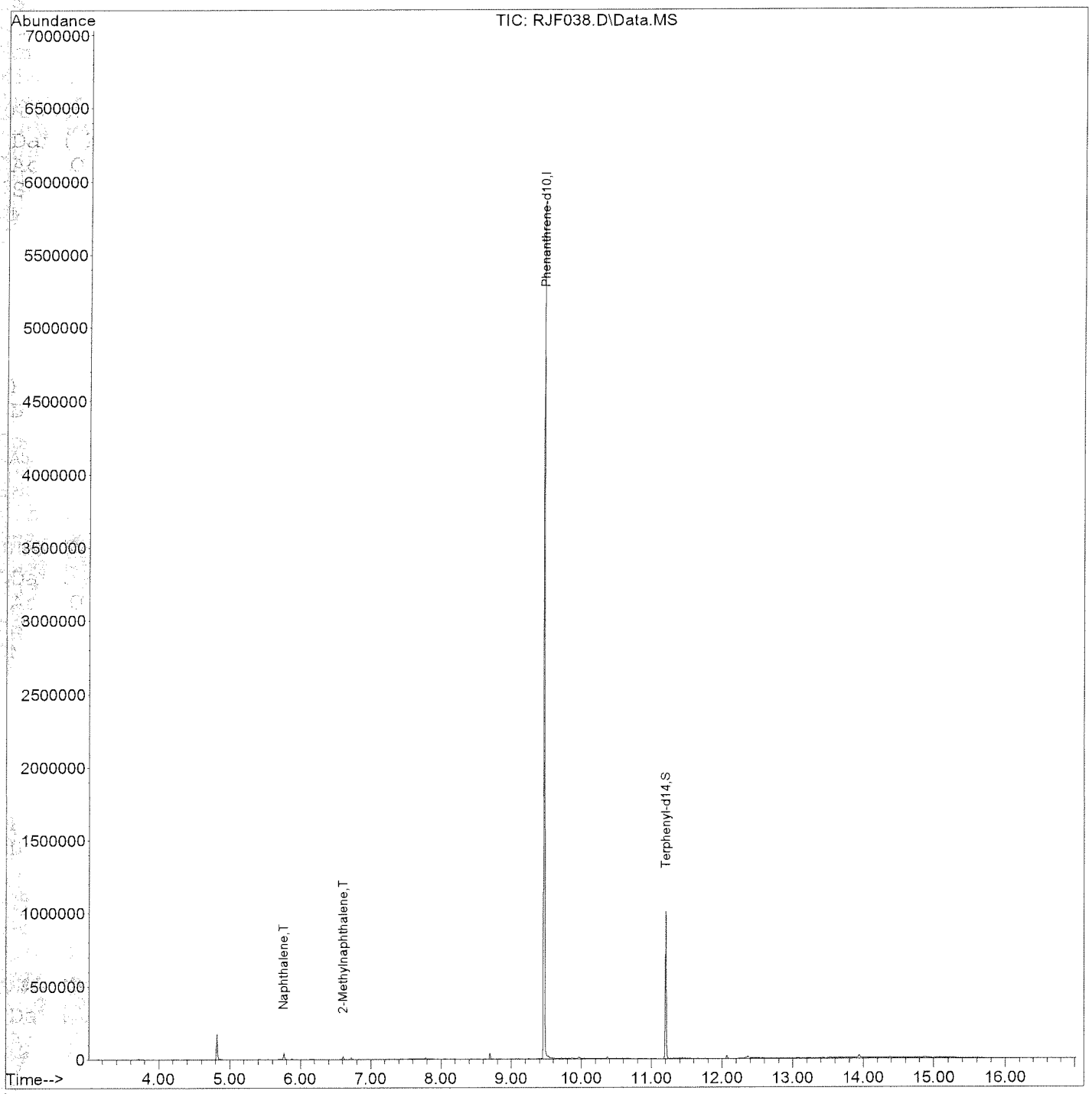
Data File : C:\msdchem\1\DATA\14J28\RJF038.D Vial: 17
Acq On : 28 Oct 2014 12:26 Operator: KVu
Sample : 14J144-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:06:48 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

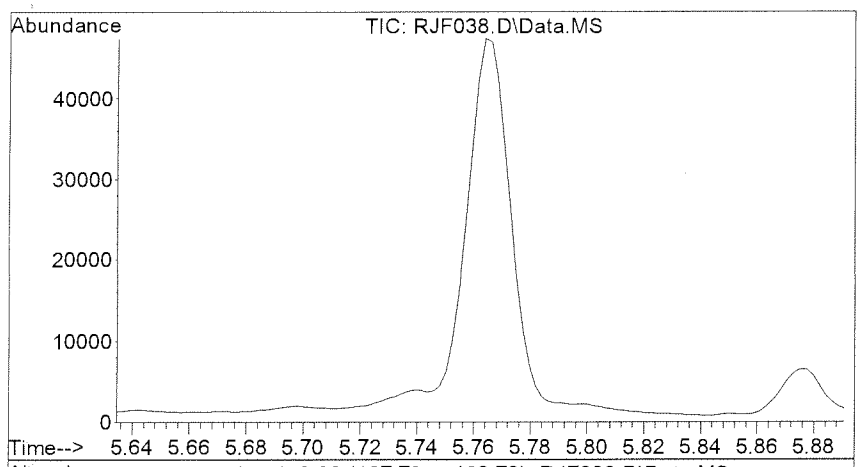
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 4445779 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.201 | 244 | 895613 | 544.70 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 108.94% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 48829 | 16.05 ppb <DL | 96 |
| 3) 2-Methylnaphthalene | 6.608 | 142 | 12377 | 6.07 ppb | 97 |

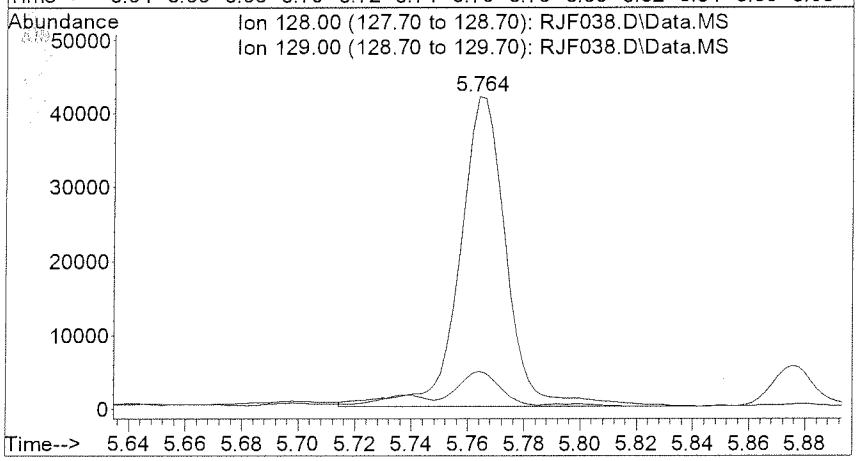
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF038.D
Vial: 17
Acq On : 28 Oct 2014 12:26
Operator: KVu
Sample : 14J144-01
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:06:48 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



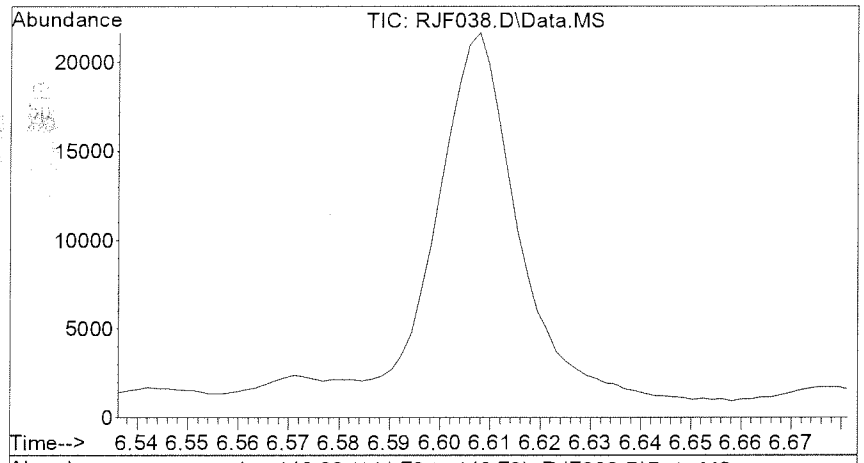


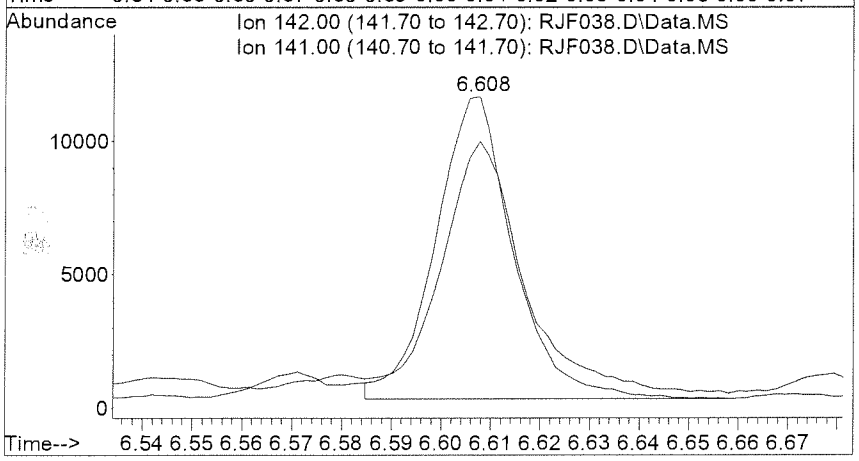




#2
Naphthalene
Concen: 16.05 ppb
RT: 5.764 min Scan# 1219
Delta R.T. 0.023 min
Lab File: RJF038.D
Acq: 28 Oct 2014 12:26

Tgt Ion:128 Resp: 48829

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 129 | 9.5 | 0.0 | 41.2 |




#3
2-Methylnaphthalene
Concen: 6.07 ppb
RT: 6.608 min Scan# 1598
Delta R.T. 0.031 min
Lab File: RJF038.D
Acq: 28 Oct 2014 12:26

Tgt Ion:142 Resp: 12377

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 86.9 | 53.9 | 113.9 |

# QC SUMMARIES

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 10/23/14 |
| Batch No. | : 14J144 | Date Extracted: | 10/23/14 10:00 |
| Sample ID: | MBLK1W | Date Analyzed: | 10/28/14 10:13 |
| Lab Samp ID: | SVJ034WB | Dilution Factor: | 1 |
| Lab File ID: | RJF033 | Matrix : | WATER |
| Ext Btch ID: | SVJ034W | % Moisture : | NA |
| Calib. Ref.: | REF014 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.020 | 0.0050 | 0.010 |
| ACENAPHTHYLENE | ND | 0.020 | 0.0050 | 0.010 |
| ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(B)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(K)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(G,H,I)PERYLENE | ND | 0.020 | 0.0050 | 0.010 |
| CHRYSENE | ND | 0.020 | 0.0050 | 0.010 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORENE | ND | 0.020 | 0.0050 | 0.010 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| NAPHTHALENE | ND | 0.10 | 0.025 | 0.050 |
| PHENANTHRENE | ND | 0.020 | 0.0050 | 0.010 |
| PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| 2-METHYLNAPHTHALENE | ND | 0.020 | 0.0050 | 0.010 |
| 1-METHYLNAPHTHALENE | ND | 0.020 | 0.0050 | 0.010 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.395 | 0.5000 | 78.9 | 50-135 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J144
METHOD: SW3520C/8270C SIM

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | SVJ034WB | SVJ034WL | SVJ034WC | | |
| LAB FILE ID: | RJF033 | RJF034 | RJF035 | | |
| DATE EXTRACTED: | 10/23/1410:00 | 10/23/1410:00 | 10/23/1410:00 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 10/28/1410:13 | 10/28/1410:41 | 10/28/1411:08 | DATE RECEIVED: | 10/23/14 |
| PREP. BATCH: | SVJ034W | SVJ034W | SVJ034W | | |
| CALIB. REF: | REF014 | REF014 | REF014 | | |

ACCESSION:

| PARAMETER | BLNK RSLT (ug/L) | SPIKE AMT (ug/L) | BS RSLT (ug/L) | BS % REC | SPIKE AMT (ug/L) | BSD RSLT (ug/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | 0.500 | 0.462 | 92 | 0.500 | 0.445 | 89 | 4 | 45-110 | 30 |
| Acenaphthylene | ND | 0.500 | 0.455 | 91 | 0.500 | 0.437 | 87 | 4 | 50-105 | 30 |
| Anthracene | ND | 0.500 | 0.380 | 76 | 0.500 | 0.368 | 74 | 3 | 55-110 | 30 |
| Benzo(a)anthracene | ND | 0.500 | 0.490 | 98 | 0.500 | 0.492 | 98 | 0 | 55-110 | 30 |
| Benzo(a)pyrene | ND | 0.500 | 0.390 | 78 | 0.500 | 0.397 | 79 | 2 | 55-110 | 30 |
| Benzo(b)fluoranthene | ND | 0.500 | 0.465 | 93 | 0.500 | 0.466 | 93 | 0 | 45-120 | 30 |
| Benzo(k)fluoranthene | ND | 0.500 | 0.483 | 97 | 0.500 | 0.482 | 96 | 0 | 45-125 | 30 |
| Benzo(g,h,i)perylene | ND | 0.500 | 0.489 | 98 | 0.500 | 0.493 | 99 | 1 | 40-125 | 30 |
| Chrysene | ND | 0.500 | 0.461 | 92 | 0.500 | 0.468 | 94 | 1 | 55-110 | 30 |
| Dibenzo(a,h)anthracene | ND | 0.500 | 0.470 | 94 | 0.500 | 0.478 | 96 | 2 | 40-125 | 30 |
| Fluoranthene | ND | 0.500 | 0.420 | 84 | 0.500 | 0.409 | 82 | 3 | 55-115 | 30 |
| Fluorene | ND | 0.500 | 0.423 | 85 | 0.500 | 0.408 | 82 | 4 | 50-110 | 30 |
| Indeno(1,2,3-cd)pyrene | ND | 0.500 | 0.471 | 94 | 0.500 | 0.472 | 94 | 0 | 45-125 | 30 |
| Naphthalene | ND | 0.500 | 0.397 | 79 | 0.500 | 0.384 | 77 | 3 | 40-100 | 30 |
| Phenanthrene | ND | 0.500 | 0.414 | 83 | 0.500 | 0.404 | 81 | 3 | 50-115 | 30 |
| Pyrene | ND | 0.500 | 0.406 | 81 | 0.500 | 0.396 | 79 | 3 | 50-130 | 30 |
| 2-Methylnaphthalene | ND | 0.500 | 0.455 | 91 | 0.500 | 0.446 | 89 | 2 | 45-105 | 30 |
| 1-Methylnaphthalene | ND | 0.500 | 0.481 | 96 | 0.500 | 0.458 | 92 | 5 | 30-160 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (ug/L) | BS RSLT (ug/L) | BS % REC | SPIKE AMT (ug/L) | BSD RSLT (ug/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Terphenyl-d14 | 0.500 | 0.551 | 110 | 0.500 | 0.538 | 108 | 50-135 |

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J144
METHOD: SW3520C/8270C SIM

MATRIX: WATER % MOISTURE: NA

| | | | | | |
|---|---|---|---|---|---|
| DILUTION FACTOR: | 1.06 | 1.11 | 0.98 | | |
| SAMPLE ID: | RHMW06-GW-01 | | | | |
| LAB SAMP ID: | J144-01 | J144-01M | J144-01S | | |
| LAB FILE ID: | RJF038 | RJF039 | RJF040 | | |
| DATE EXTRACTED: | 10/23/1410:00 | 10/23/1410:00 | 10/23/1410:00 | DATE COLLECTED: | 10/21/14 |
| DATE ANALYZED: | 10/28/1412:26 | 10/28/1413:52 | 10/28/1414:22 | DATE RECEIVED: | 10/22/14 |
| PREP. BATCH: | SVJ034W | SVJ034W | SVJ034W | | |
| CALIB. REF: | REF014 | REF014 | REF014 | | |

ACCESSION:

| PARAMETER | SMPL RSLT (ug/L) | SPIKE AMT (ug/L) | MS RSLT (ug/L) | MS % REC | SPIKE AMT (ug/L) | MSD RSLT (ug/L) | MSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | 0.555 | 0.463 | 83 | 0.490 | 0.434 | 89 | 7 | 45-110 | 30 |
| Acenaphthylene | ND | 0.555 | 0.452 | 81 | 0.490 | 0.417 | 85 | 5 | 50-105 | 30 |
| Anthracene | ND | 0.555 | 0.395 | 71 | 0.490 | 0.363 | 74 | 4 | 55-110 | 30 |
| Benzo(a)anthracene | ND | 0.555 | 0.613 | 110 | 0.490 | 0.538 | 110 | 0 | 55-110 | 30 |
| Benzo(a)pyrene | ND | 0.555 | 0.497 | 90 | 0.490 | 0.449 | 92 | 2 | 55-110 | 30 |
| Benzo(b)fluoranthene | ND | 0.555 | 0.583 | 105 | 0.490 | 0.530 | 108 | 3 | 45-120 | 30 |
| Benzo(k)fluoranthene | ND | 0.555 | 0.602 | 109 | 0.490 | 0.527 | 107 | 2 | 45-125 | 30 |
| Benzo(g,h,i)perylene | ND | 0.555 | 0.613 | 110 | 0.490 | 0.546 | 111 | 1 | 40-125 | 30 |
| Chrysene | ND | 0.555 | 0.588 | 106 | 0.490 | 0.511 | 104 | 2 | 55-110 | 30 |
| Dibenzo(a,h)anthracene | ND | 0.555 | 0.586 | 106 | 0.490 | 0.523 | 107 | 1 | 40-125 | 30 |
| Fluoranthene | ND | 0.555 | 0.495 | 89 | 0.490 | 0.436 | 89 | 0 | 55-115 | 30 |
| Fluorene | ND | 0.555 | 0.421 | 76 | 0.490 | 0.387 | 79 | 4 | 50-110 | 30 |
| Indeno(1,2,3-cd)pyrene | ND | 0.555 | 0.582 | 105 | 0.490 | 0.519 | 106 | 1 | 45-125 | 30 |
| Naphthalene | ND | 0.555 | 0.393 | 71 | 0.490 | 0.360 | 73 | 3 | 40-100 | 30 |
| Phenanthrene | ND | 0.555 | 0.423 | 76 | 0.490 | 0.388 | 79 | 4 | 50-115 | 30 |
| Pyrene | ND | 0.555 | 0.480 | 87 | 0.490 | 0.422 | 86 | 1 | 50-130 | 30 |
| 2-Methylnaphthalene | 0.00643J | 0.555 | 0.451 | 80 | 0.490 | 0.418 | 84 | 8 | 45-105 | 30 |
| 1-Methylnaphthalene | ND | 0.555 | 0.475 | 86 | 0.490 | 0.447 | 91 | 6 | 30-160 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (ug/L) | MS RSLT (ug/L) | MS % REC | SPIKE AMT (ug/L) | MSD RSLT (ug/L) | MSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Terphenyl-d14 | 0.555 | 0.598 | 108 | 0.490 | 0.518 | 106 | 50-135 |

# QC DATA

Quantitation Report (QT Reviewed)

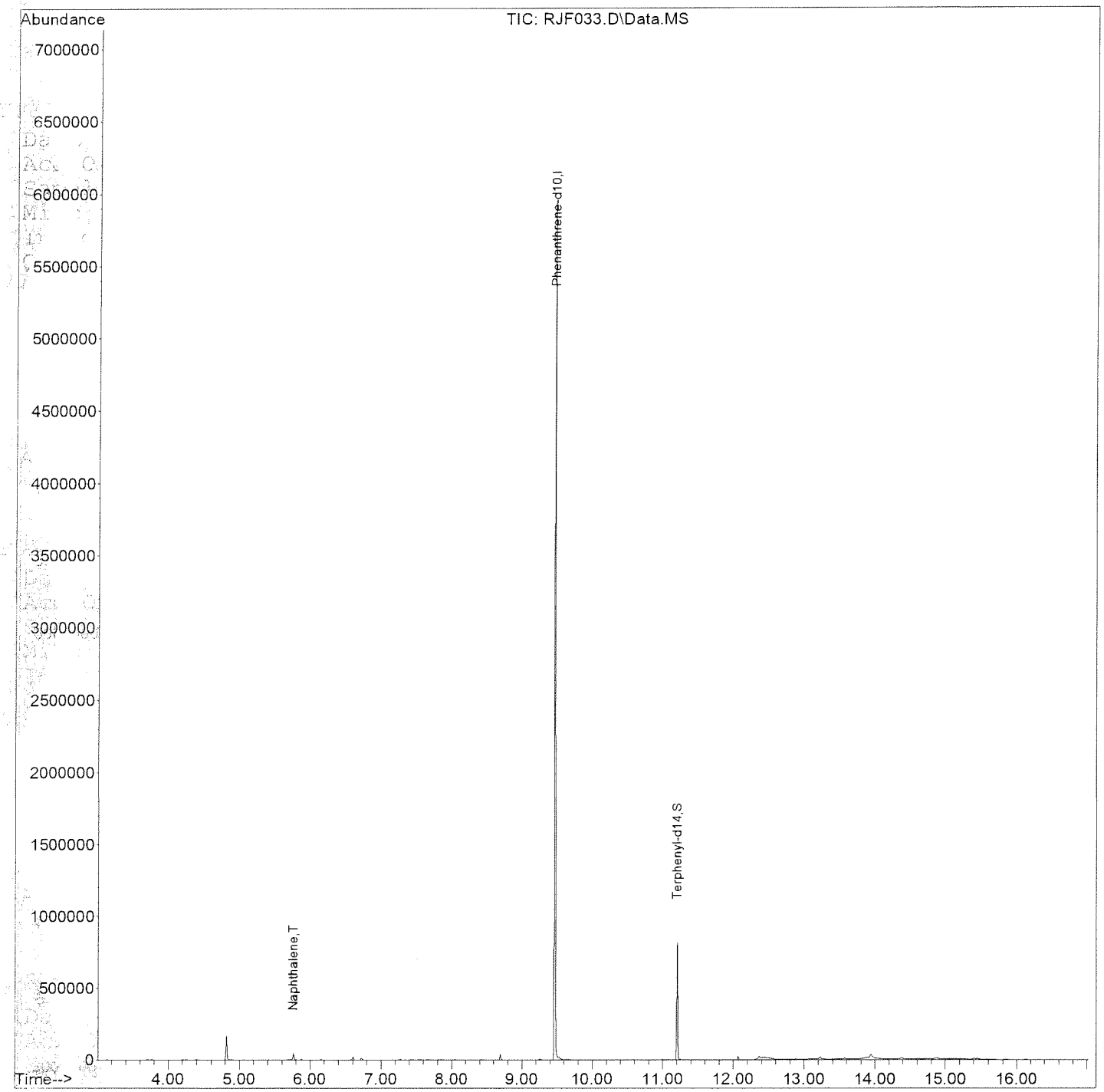
Data File : C:\msdchem\1\DATA\14J28\RJF033.D Vial: 12
Acq On : 28 Oct 2014 10:13 Operator: KVu
Sample : SVJ034WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:04:43 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

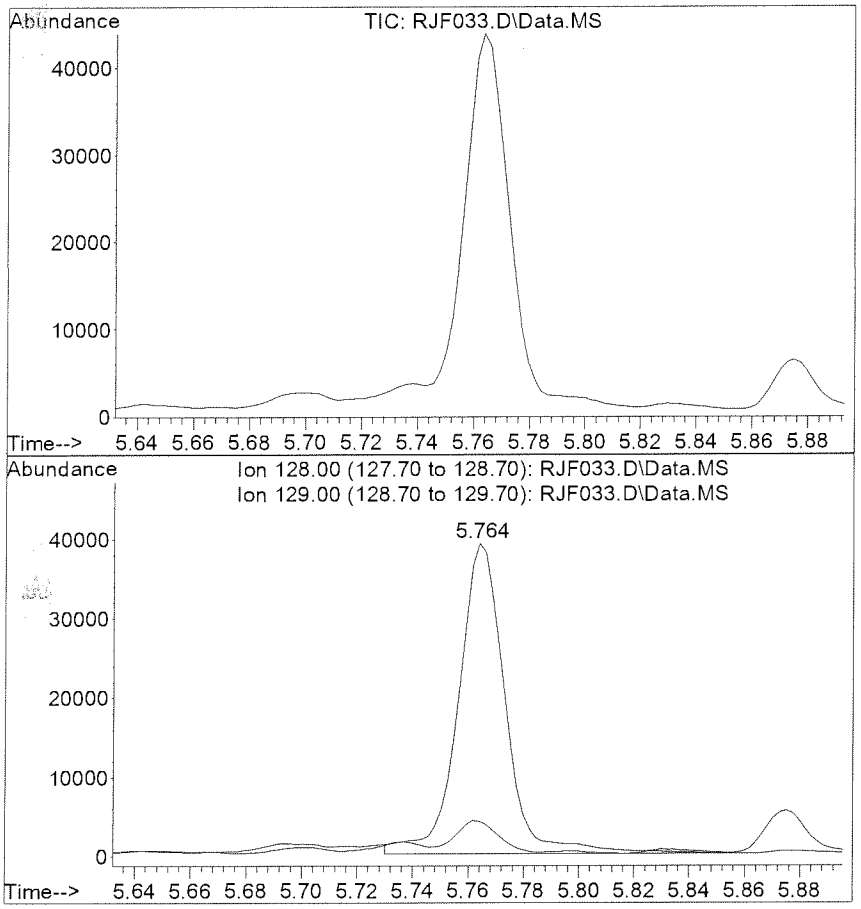
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 4529029 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.204 | 244 | 660903 | 394.57 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery = 78.91% | | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 46402 | 14.97 ppb <DL | 94 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF033.D
Vial: 12
Acq On : 28 Oct 2014 10:13
Operator: KVu
Sample : SVJ034WB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 29 17:04:43 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M






#2
Naphthalene
Concen: 14.97 ppb
RT: 5.764 min Scan# 1219
Delta R.T. 0.023 min
Lab File: RJF033.D
Acq: 28 Oct 2014 10:13

Tgt Ion:128 Resp: 46402

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 129 | 9.0 | 0.0 | 41.2 |

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF034.D
Vial: 13
Acq On : 28 Oct 2014 10:41
Operator: KVu
Sample : SVJ034WL
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 13:01:41 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

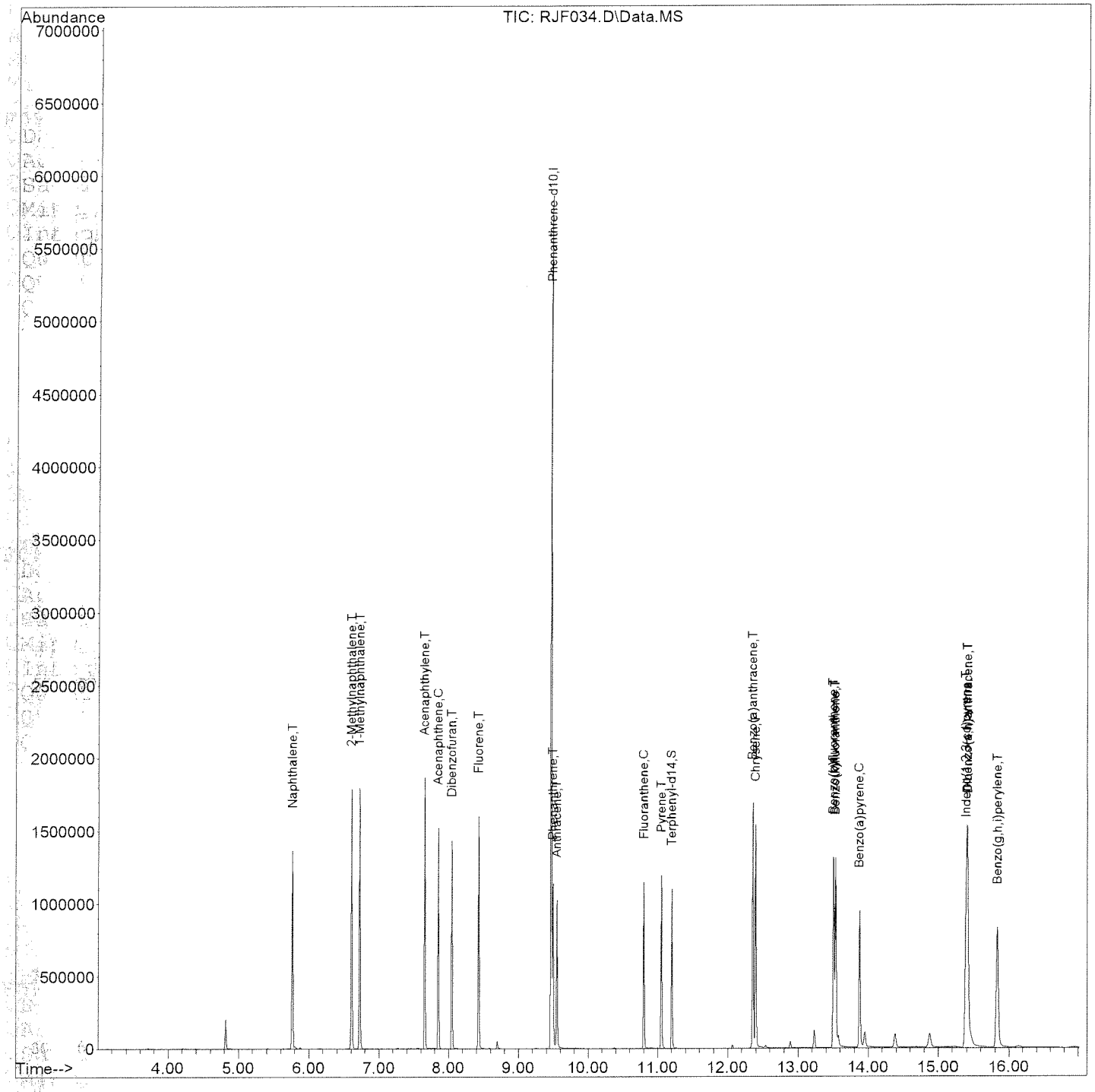
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.468 | 188 | 4565409 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.204 | 244 | 929625 | 550.57 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 110.11% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1239734 | 396.82 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 953792 | 455.22 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.724 | 142 | 925848 | 481.17 ppb | 99 |
| 5) Acenaphthylene | 7.657 | 152 | 1266238 | 454.96 ppb | 100 |
| 6) Acenaphthene | 7.853 | 153 | 836576 | 462.15 ppb | 100 |
| 7) Dibenzofuran | 8.046 | 168 | 978378 | 422.77 ppb | 99 |
| 8) Fluorene | 8.430 | 166 | 782257 | 423.39 ppb | 99 |
| 9) Phenanthrene | 9.495 | 178 | 981080 | 414.43 ppb | 100 |
| 10) Anthracene | 9.551 | 178 | 904803 | 380.45 ppb | 99 |
| 11) Fluoranthene | 10.802 | 202 | 923369 | 420.16 ppb | 84 |
| 12) Pyrene | 11.054 | 202 | 965466 | 406.19 ppb | 84 |
| 14) Benzo(a)anthracene | 12.356 | 228 | 1584401 | 490.39 ppb | 76 |
| 15) Chrysene | 12.395 | 228 | 1445766 | 461.05 ppb | 82 |
| 16) Benzo(b)fluoranthene | 13.502 | 252 | 1439754 | 465.38 ppb | 85 |
| 17) Benzo(k)fluoranthene | 13.534 | 252 | 1493502 | 483.37 ppb | 85 |
| 18) Benzo(a)pyrene | 13.877 | 252 | 1144792 | 389.56 ppb | 85 |
| 19) Indeno(1,2,3-cd)pyrene | 15.392 | 276 | 1684931 | 471.07 ppb | 84 |
| 20) Dibenzo(a,h)anthracene | 15.409 | 278 | 1388276 | 470.28 ppb | 95 |
| 21) Benzo(g,h,i)perylene | 15.829 | 276 | 1449682 | 489.16 ppb | 84 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF034.D
Acq On : 28 Oct 2014 10:41
Sample : SVJ034WL
Misc : F0
Integrator: RTE
Quant Time: Oct 28 13:01:41 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 13
Operator: KVu
Inst : DSQ
Multiplr: 1.00



Quantitation Report (QT Reviewed)

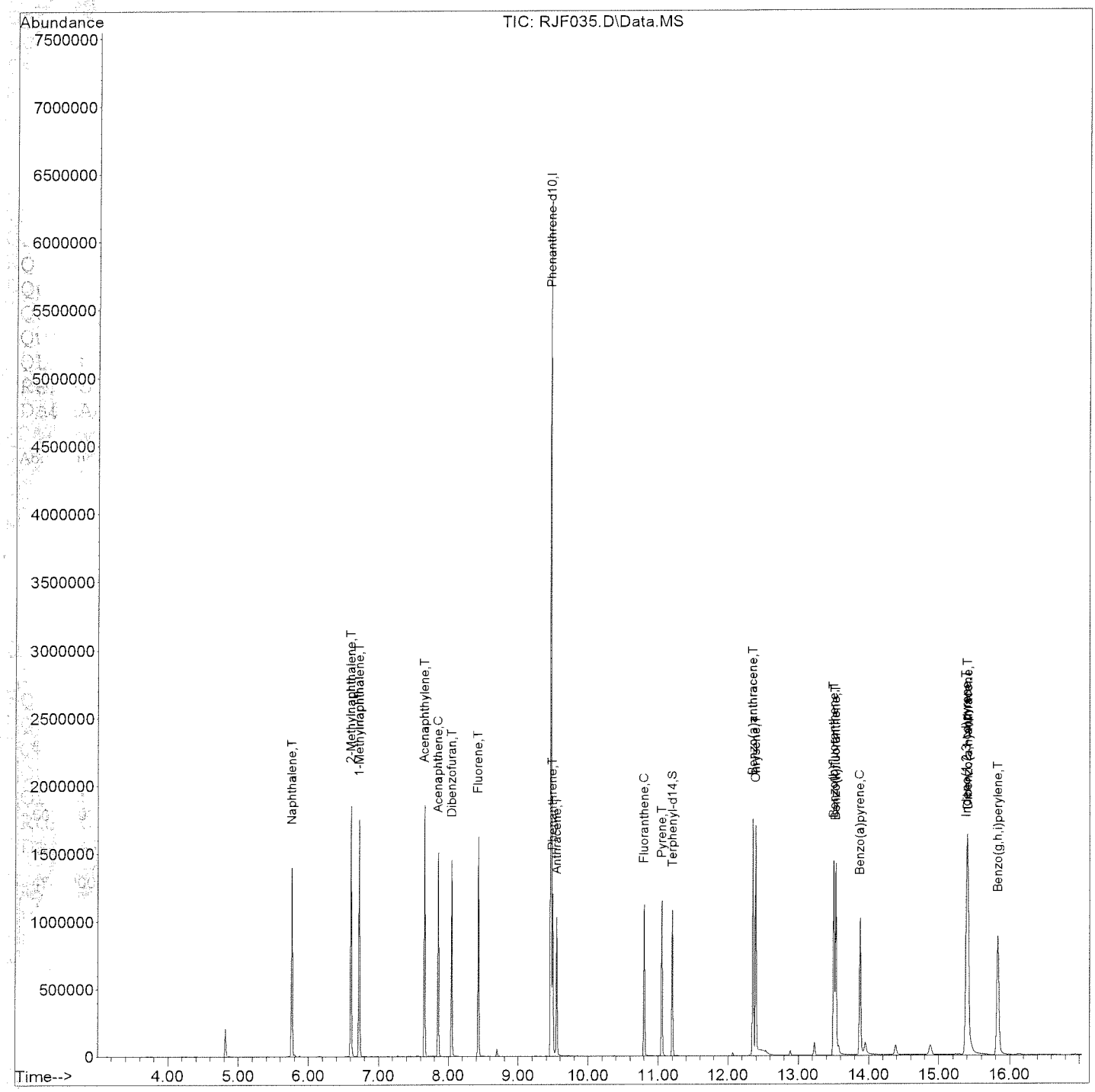
Data File : C:\msdchem\1\DATA\14J28\RJF035.D Vial: 14
Acq On : 28 Oct 2014 11:08 Operator: KVu
Sample : SVJ034WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 13:01:44 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 4726800 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.204 | 244 | 940398 | 537.94 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 107.59% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1242136 | 384.01 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 967422 | 445.96 ppb | 99 |
| 4) 1-Methylnaphthalene | 6.724 | 142 | 912671 | 458.13 ppb | 99 |
| 5) Acenaphthylene | 7.657 | 152 | 1260386 | 437.40 ppb | 99 |
| 6) Acenaphthene | 7.851 | 153 | 833893 | 444.94 ppb | 99 |
| 7) Dibenzofuran | 8.046 | 168 | 972632 | 405.94 ppb | 98 |
| 8) Fluorene | 8.428 | 166 | 780462 | 408.00 ppb | 99 |
| 9) Phenanthrene | 9.493 | 178 | 990533 | 404.14 ppb | 99 |
| 10) Anthracene | 9.551 | 178 | 905642 | 367.81 ppb | 100 |
| 11) Fluoranthene | 10.799 | 202 | 931175 | 409.25 ppb | 84 |
| 12) Pyrene | 11.051 | 202 | 973808 | 395.71 ppb | 84 |
| 14) Benzo(a)anthracene | 12.354 | 228 | 1647162 | 492.44 ppb | 79 |
| 15) Chrysene | 12.395 | 228 | 1519075 | 467.89 ppb | 83 |
| 16) Benzo(b)fluoranthene | 13.504 | 252 | 1492343 | 465.91 ppb | 85 |
| 17) Benzo(k)fluoranthene | 13.534 | 252 | 1542693 | 482.25 ppb | 85 |
| 18) Benzo(a)pyrene | 13.877 | 252 | 1207691 | 396.94 ppb | 88 |
| 19) Indeno(1,2,3-cd)pyrene | 15.392 | 276 | 1748657 | 472.20 ppb | 83 |
| 20) Dibenzo(a,h)anthracene | 15.406 | 278 | 1460567 | 477.88 ppb | 91 |
| 21) Benzo(g,h,i)perylene | 15.829 | 276 | 1511924 | 492.75 ppb | 85 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF035.D
Vial: 14
Acq On : 28 Oct 2014 11:08
Operator: KVu
Sample : SVJ034WC
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 13:01:44 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF039.D
Vial: 18
Acq On : 28 Oct 2014 13:52
Operator: KVu
Sample : 14J144-01M
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 30 16:17:55 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

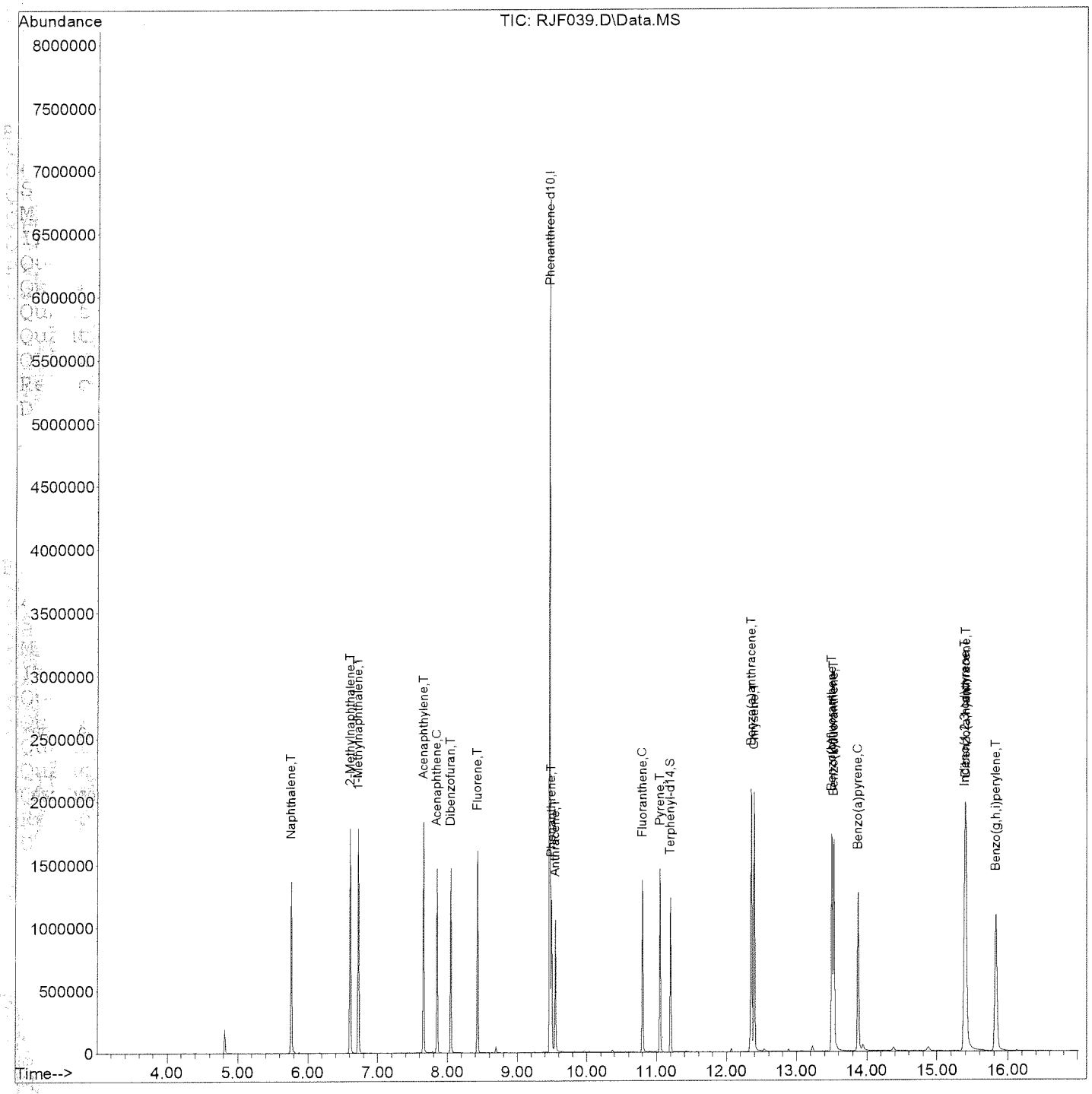
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 5148446 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.201 | 244 | 1025244 | 538.44 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 107.69% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1246994 | 353.94 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 960132 | 406.35 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.722 | 142 | 928483 | 427.90 ppb | 99 |
| 5) Acenaphthylene | 7.657 | 152 | 1278924 | 407.48 ppb | 100 |
| 6) Acenaphthene | 7.851 | 153 | 852112 | 417.43 ppb | 98 |
| 7) Dibenzofuran | 8.046 | 168 | 988194 | 378.66 ppb | 99 |
| 8) Fluorene | 8.428 | 166 | 789598 | 378.97 ppb | 99 |
| 9) Phenanthrene | 9.493 | 178 | 1016938 | 380.93 ppb | 100 |
| 10) Anthracene | 9.549 | 178 | 954004 | 355.72 ppb | 99 |
| 11) Fluoranthene | 10.799 | 202 | 1104850 | 445.81 ppb | 86 |
| 12) Pyrene | 11.051 | 202 | 1159799 | 432.69 ppb | 83 |
| 14) Benzo(a)anthracene | 12.354 | 228 | 2007481 | 552.01 ppb | 81 |
| 15) Chrysene | 12.395 | 228 | 1873981 | 529.93 ppb | 82 |
| 16) Benzo(b)fluoranthene | 13.502 | 252 | 1833020 | 525.41 ppb | 85 |
| 17) Benzo(k)fluoranthene | 13.531 | 252 | 1890393 | 542.54 ppb | 85 |
| 18) Benzo(a)pyrene | 13.874 | 252 | 1485212 | 448.17 ppb | 84 |
| 19) Indeno(1,2,3-cd)pyrene | 15.392 | 276 | 2116490 | 524.72 ppb | 81 |
| 20) Dibenzo(a,h)anthracene | 15.406 | 278 | 1757201 | 527.85 ppb | 85 |
| 21) Benzo(g,h,i)perylene | 15.827 | 276 | 1845258 | 552.13 ppb | 84 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF039.D
Acq On : 28 Oct 2014 13:52
Sample : 14J144-01M
Misc : F0
Integrator: RTE
Quant Time: Oct 30 16:17:55 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 18
Operator: KVu
Inst : DSQ
Multiplr: 1.00



Quantitation Report (QT Reviewed)

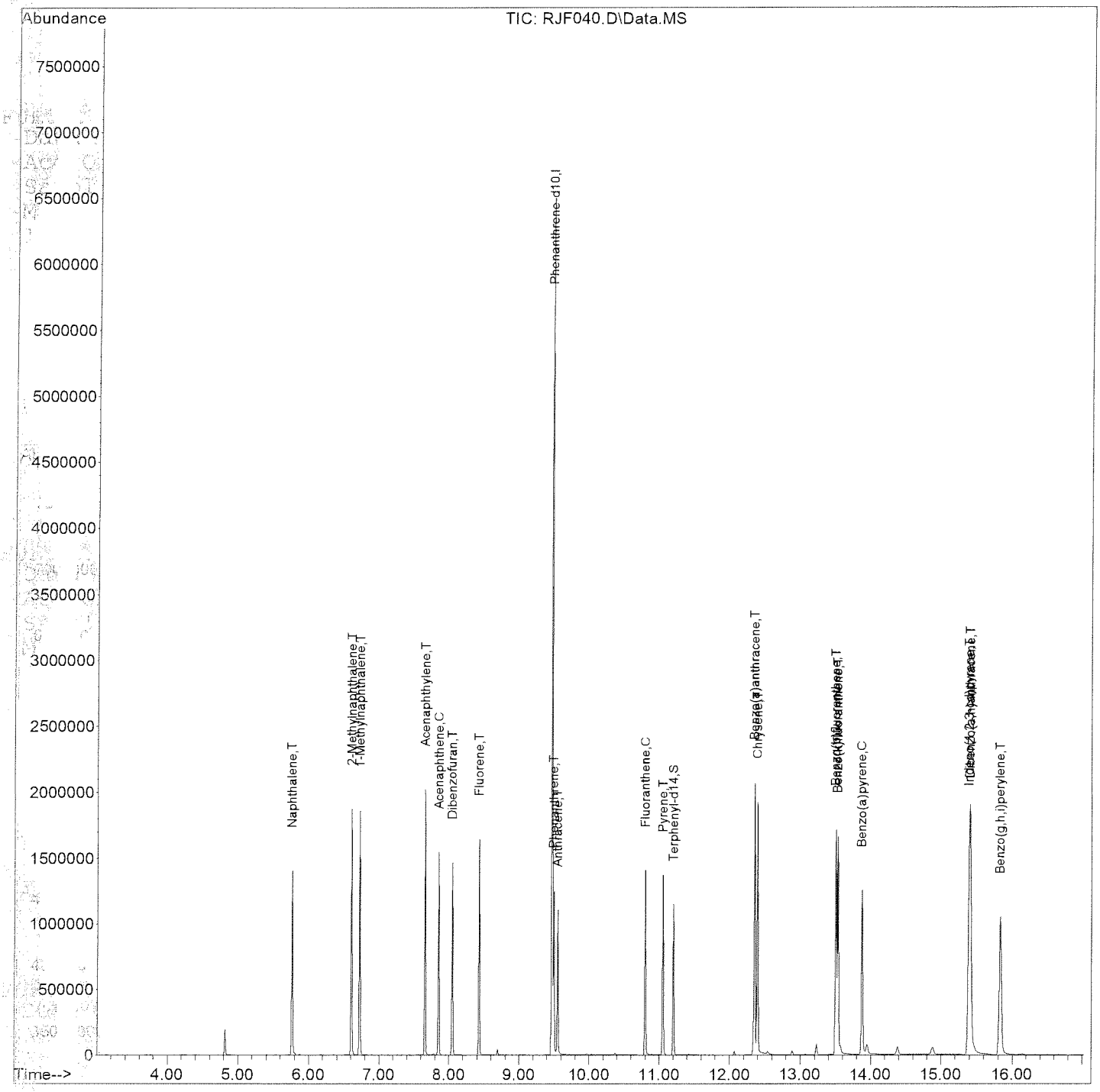
Data File : C:\msdchem\1\DATA\14J28\RJF040.D
Vial: 19
Acq On : 28 Oct 2014 14:22
Operator: KVu
Sample : 14J144-01S
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 14:42:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 5072301 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.204 | 244 | 990840 | 528.18 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 105.64% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1275558 | 367.48 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.606 | 142 | 993878 | 426.95 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.724 | 142 | 975127 | 456.14 ppb | 99 |
| 5) Acenaphthylene | 7.655 | 152 | 1315799 | 425.53 ppb | 99 |
| 6) Acenaphthene | 7.851 | 153 | 890064 | 442.56 ppb | 99 |
| 7) Dibenzofuran | 8.046 | 168 | 1027133 | 399.49 ppb | 98 |
| 8) Fluorene | 8.428 | 166 | 809964 | 394.58 ppb | 100 |
| 9) Phenanthrene | 9.493 | 178 | 1040127 | 395.47 ppb | 99 |
| 10) Anthracene | 9.549 | 178 | 979512 | 370.71 ppb | 99 |
| 11) Fluoranthene | 10.799 | 202 | 1086793 | 445.11 ppb | 86 |
| 12) Pyrene | 11.051 | 202 | 1137462 | 430.73 ppb | 83 |
| 14) Benzo(a)anthracene | 12.354 | 228 | 1966375 | 548.78 ppb | 88 |
| 15) Chrysene | 12.395 | 228 | 1817931 | 521.80 ppb | 81 |
| 16) Benzo(b)fluoranthene | 13.502 | 252 | 1859345 | 540.95 ppb | 84 |
| 17) Benzo(k)fluoranthene | 13.532 | 252 | 1844499 | 537.32 ppb | 86 |
| 18) Benzo(a)pyrene | 13.874 | 252 | 1495202 | 457.96 ppb | 84 |
| 19) Indeno(1,2,3-cd)pyrene | 15.392 | 276 | 2104081 | 529.47 ppb | 82 |
| 20) Dibenzo(a,h)anthracene | 15.407 | 278 | 1751685 | 534.09 ppb | 87 |
| 21) Benzo(g,h,i)perylene | 15.827 | 276 | 1833285 | 556.78 ppb | 84 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF040.D
Vial: 19
Acq On : 28 Oct 2014 14:22
Operator: KVu
Sample : 14J144-01S
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 14:42:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF012
Instrument ID: TOF0

Project: RED HILL PHASE 1B
SDG No.: 14J144
DFTPP Injection Date: 05/08/14
DFTPP Injection Time: 11:44

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 44.44 |
| 68 | Less than 2% of mass 69 | 0.14( 0.8)1 |
| 69 | Relative abundance of mass 198 | 17.73 |
| 70 | Less than 2.0% of mass 69 | 0.02( 0.1)1 |
| 127 | 40.0 - 60.0% of mass 198 | 44.87 |
| 197 | Less than 1.0% of mass 198 | 0.67 |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 199 | 5.0 - 9.0% of mass 198 | 6.24 |
| 275 | 10.0 - 30.0% of mass 198 | 22.93 |
| 365 | Greater than 1.00% of mass 198 | 1.66 |
| 441 | Present, but less than mass 443 | 13.99( 81.1)3 |
| 442 | Greater than 40.0% of mass 198 | 92.91 |
| 443 | 17.0 - 23.0% of mass 442 | 17.25( 18.6)2 |

1-Value is % mass 69 2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 1 | SSTD1000 | SVF0E081 | REF013 | 05/08/14 | 12:10 |
| 2 | SSTD500 | SVF0E082 | REF014 | 05/08/14 | 12:31 |
| 3 | SSTD100 | SVF0E083 | REF015 | 05/08/14 | 12:54 |
| 4 | SSTD080 | SVF0E084 | REF016 | 05/08/14 | 13:17 |
| 5 | SSTD040 | SVF0E085 | REF017 | 05/08/14 | 13:40 |
| 6 | SSTD020 | SVF0E086 | REF018 | 05/08/14 | 14:03 |
| 7 | SSTD500 | ISVF0E081 | REF019 | 05/08/14 | 14:26 |

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF014
Instrument ID: TOF0

Project:ICAL
SDG No.:ICAL
Date Analyzed: 05/08/14
Time Analyzed: 12:31

| | | IS4(PHN) AREA # | RT # | IS5(CRY) AREA # | RT # | IS6(PRY) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 5005097 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| | UPPER LIMIT | 10010194 | 9.94 | 0 | 0.50 | 0 | 0.50 |
| | LOWER LIMIT | 2502549 | 8.94 | 0 | -0.50 | 0 | -0.50 |
| | SAMPLE ID | | | | | | |
| 1 | SVF0E081 | 5187965 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 2 | SVF0E083 | 5327101 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 3 | SVF0E084 | 7937548 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 4 | SVF0E085 | 5477844 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 5 | SVF0E086 | 4821286 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 6 | ISVF0E081 | 6284290 | 9.44 | 0 | 0.00 | 0 | 0.00 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.



FORM VIII SV-2 OLM02.0

RW 7-11-14

3026

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-SEMI ID:0.25MM
Beginning DateTime :05/08/14 12:10 Ending DateTime :05/08/14 14:03
IC File :REF018~~4~~ DJ 10/30/14 HPChem Method :SVF0E08

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

| IDX | Parameters | ON_COL UG/L | WATER UG/L | SOIL UG/KG | R_FILE |
|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | IntSTD | IntSTD | IntSTD | IntSTD |
| 2 | Naphthalene | 20 | .02 | .6667 | REF018 |
| 3 | 2-Methylnaphthalene | 20 | .02 | .6667 | REF018 |
| 4 | 1-Methylnaphthalene | 20 | .02 | .6667 | REF018 |
| 5 | Acenaphthylene | 20 | .02 | .6667 | REF018 |
| 6 | Acenaphthene | 20 | .02 | .6667 | REF018 |
| 7 | Dibenzofuran | 20 | .02 | .6667 | REF018 |
| 8 | Fluorene | 20 | .02 | .6667 | REF018 |
| 9 | Phenanthrene | 20 | .02 | .6667 | REF018 |
| 10 | Anthracene | 20 | .02 | .6667 | REF018 |
| 11 | Fluoranthene | 20 | .02 | .6667 | REF018 |
| 12 | Pyrene | 20 | .02 | .6667 | REF018 |
| 13 | Terphenyl-d14 | 20 | .02 | .6667 | REF018 |
| 14 | Benzo(a)anthracene | 20 | .02 | .6667 | REF018 |
| 15 | Chrysene | 20 | .02 | .6667 | REF018 |
| 16 | Benzo(b)fluoranthene | 20 | .02 | .6667 | REF018 |
| 17 | Benzo(k)fluoranthene | 20 | .02 | .6667 | REF018 |
| 18 | Benzo(a)pyrene | 20 | .02 | .6667 | REF018 |
| 19 | Indeno(1,2,3-cd)pyrene | 20 | .02 | .6667 | REF018 |
| 20 | Dibenzo(a,h)anthracene | 20 | .02 | .6667 | REF018 |
| 21 | Benzo(g,h,i)perylene | 20 | .02 | .6667 | REF018 |

AU 7-1-14

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :05/08/14 12:10
Spike Units :PPB
IC File :REF0184 BJ 10/30/14

Column Spec :ZB-SEMI ID:0.25MM
Ending DateTime :05/08/14 14:03
HPChem Method :SVF0E08

| IDX | Parameters | 20<br>14:03<br>REF018 | 40<br>13:40<br>REF017 | 80<br>13:17<br>REF016 | 100<br>12:54<br>REF015 | 500<br>12:31<br>REF014 | 1000<br>12:10<br>REF013 | Av_RRF | %_RSD | Av_Rt_M |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9.4429 |
| 2 | Naphthalene | 1.584 | 1.389 | 1.265 | 1.344 | 1.392 | 1.238 | 1.369 | 8.99 | 5.7405 |
| 3 | 2-Methylnaphthalene | 1.049 | 0.917 | 0.855 | 0.919 | 0.934 | 0.833 | 0.918 | 8.25 | 6.5772 |
| 4 | 1-Methylnaphthalene | 0.978 | 0.846 | 0.789 | 0.836 | 0.849 | 0.759 | 0.843 | 8.93 | 6.6945 |
| 5 | Acenaphthylene | 1.353 | 1.215 | 1.133 | 1.232 | 1.245 | 1.139 | 1.219 | 6.61 | 7.6248 |
| 6 | Acenaphthene | 0.908 | 0.800 | 0.739 | 0.802 | 0.787 | 0.723 | 0.793 | 8.22 | 7.8215 |
| 7 | Dibenzofuran | 1.143 | 1.026 | 0.947 | 1.015 | 1.018 | 0.934 | 1.014 | 7.34 | 8.0151 |
| 8 | Fluorene | 0.905 | 0.823 | 0.759 | 0.820 | 0.805 | 0.744 | 0.809 | 7.05 | 8.4032 |
| 9 | Phenanthrene | 1.167 | 1.073 | 0.982 | 1.046 | 1.026 | 0.928 | 1.037 | 7.86 | 9.4701 |
| 10 | Anthracene | 1.165 | 1.048 | 0.987 | 1.044 | 1.047 | 0.960 | 1.042 | 6.78 | 9.5262 |
| 11 | Fluoranthene | 1.107 | 0.997 | 0.907 | 0.952 | 0.957 | 0.857 | 0.963 | 8.86 | 10.7756 |
| 12 | Pyrene | 1.199 | 1.055 | 0.985 | 1.029 | 1.031 | 0.949 | 1.041 | 8.26 | 11.0270 |
| 13 | Terphenyl-d14 | 0.872 | 0.761 | 0.690 | 0.714 | 0.734 | 0.667 | 0.740 | 9.81 | 11.1795 |
| 14 | Benzo(a)anthracene | 2.042 | 1.655 | 1.458 | 1.489 | 1.522 | 1.358 | 1.587 | 15.30 | 12.3298 |
| 15 | Chrysene | 1.582 | 1.404 | 1.292 | 1.326 | 1.388 | 1.250 | 1.374 | 8.55 | 12.3690 |
| 16 | Benzo(b)fluoranthene | 1.516 | 1.347 | 1.270 | 1.310 | 1.410 | 1.278 | 1.355 | 6.94 | 13.4730 |
| 17 | Benzo(k)fluoranthene | 1.505 | 1.292 | 1.253 | 1.348 | 1.449 | 1.275 | 1.354 | 7.55 | 13.5020 |
| 18 | Benzo(a)pyrene | 1.418 | 1.249 | 1.173 | 1.251 | 1.378 | 1.255 | 1.287 | 7.12 | 13.8406 |
| 19 | Indeno(1,2,3-cd)pyrene | 1.722 | 1.553 | 1.448 | 1.510 | 1.657 | 1.512 | 1.567 | 6.56 | 15.3334 |
| 20 | Dibenzo(a,h)anthracene | 1.458 | 1.286 | 1.193 | 1.247 | 1.347 | 1.229 | 1.293 | 7.44 | 15.3500 |
| 21 | Benzo(g,h,i)perylene | 1.390 | 1.273 | 1.236 | 1.265 | 1.389 | 1.237 | 1.298 | 5.54 | 15.7617 |

Ave_%RSD : 8.1 Max_%RSD : 15.3

Use Least Square Linear Regression with weighting factor of inverse concentration
Resp_Ratio = xo + x1 * Amt_Ratio

| IDX | Parameter | x0 | x1 | CCF |
|---|---|---|---|---|
| 14 | Benzo(a)anthracene | 0.00585 | 1.39154 | 0.9984 |

RC
7-11-14

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :05/08/14 12:10
Spike Units :PPB
IC File :REF015 4 DJ 10/30/14

Column Spec :ZB-SEMI ID:0.25MM
Ending DateTime :05/08/14 14:03
HPChem Method :SVF0E08

| IDX | Parameters | 20<br>14:03<br>REF018 | 40<br>13:40<br>REF017 | 80<br>13:17<br>REF016 | 100<br>12:54<br>REF015 | 500<br>12:31<br>REF014 | 1000<br>12:10<br>REF013 | AvDRec | %_RSD | Av_Rt_M |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9.4429 |
| 2 | Naphthalene | 116 | 101 | 92 | 98 | 102 | 90 | 6.3 | 8.99 | 5.7405 |
| 3 | 2-Methylnaphthalene | 114 | 100 | 93 | 100 | 102 | 91 | 5.4 | 8.25 | 6.5772 |
| 4 | 1-Methylnaphthalene | 116 | 100 | 94 | 99 | 101 | 90 | 5.7 | 8.93 | 6.6945 |
| 5 | Acenaphthylene | 111 | 100 | 93 | 101 | 102 | 93 | 4.7 | 6.61 | 7.6248 |
| 6 | Acenaphthene | 115 | 101 | 93 | 101 | 99 | 91 | 5.5 | 8.22 | 7.8215 |
| 7 | Dibenzofuran | 113 | 101 | 93 | 100 | 100 | 92 | 4.8 | 7.34 | 8.0151 |
| 8 | Fluorene | 112 | 102 | 94 | 101 | 100 | 92 | 4.9 | 7.05 | 8.4032 |
| 9 | Phenanthrene | 113 | 103 | 95 | 101 | 99 | 89 | 5.6 | 7.86 | 9.4701 |
| 10 | Anthracene | 112 | 101 | 95 | 100 | 100 | 92 | 4.4 | 6.78 | 9.5262 |
| 11 | Fluoranthene | 115 | 104 | 94 | 99 | 99 | 89 | 6.2 | 8.86 | 10.7756 |
| 12 | Pyrene | 115 | 101 | 95 | 99 | 99 | 91 | 5.5 | 8.26 | 11.0270 |
| 13 | Terphenyl-d14 | 118 | 103 | 93 | 96 | 99 | 90 | 6.9 | 9.81 | 11.1795 |
| 14 | Benzo(a)anthracene | 105 | 98 | 94 | 99 | 108 | 97 | 4.2 | 5.1 | 12.3298 |
| 15 | Chrysene | 115 | 102 | 94 | 97 | 101 | 91 | 6.1 | 8.55 | 12.3690 |
| 16 | Benzo(b)fluoranthene | 112 | 99 | 94 | 97 | 104 | 94 | 5.3 | 6.94 | 13.4730 |
| 17 | Benzo(k)fluoranthene | 111 | 95 | 93 | 100 | 107 | 94 | 6.1 | 7.55 | 13.5020 |
| 18 | Benzo(a)pyrene | 110 | 97 | 91 | 97 | 107 | 98 | 5.7 | 7.12 | 13.8406 |
| 19 | Indeno(1,2,3-cd)pyrene | 110 | 99 | 92 | 96 | 106 | 96 | 5.2 | 6.56 | 15.3334 |
| 20 | Dibenzo(a,h)anthracene | 113 | 99 | 92 | 96 | 104 | 95 | 5.6 | 7.44 | 15.3500 |
| 21 | Benzo(g,h,i)perylene | 107 | 98 | 95 | 97 | 107 | 95 | 4.7 | 5.54 | 15.7617 |

7-11-14

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0E08.M
Title : SEMIVOLATILES - SIM
Last Update : Thu May 08 14:37:46 2014
Response Via : Initial Calibration

Total Cpnds : 21

| PK# | | Compound Name | QIon | Exp_RT | Rel_RT | Cal | #Qual | A/H | ID |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 188 | 9.444 | 1.000 | A | 1 | A | B |
| 2 | T | Naphthalene | 128 | 5.741 | 0.608 | A | 1 | A | B |
| 3 | T | 2-Methylnaphthalene | 142 | 6.577 | 0.696 | A | 1 | A | B |
| 4 | T | 1-Methylnaphthalene | 142 | 6.695 | 0.709 | A | 1 | A | B |
| 5 | T | Acenaphthylene | 152 | 7.626 | 0.807 | A | 1 | A | B |
| 6 | C | Acenaphthene | 153 | 7.821 | 0.828 | A | 1 | A | B |
| 7 | T | Dibenzofuran | 168 | 8.015 | 0.849 | A | 1 | A | B |
| 8 | T | Fluorene | 166 | 8.403 | 0.890 | A | 1 | A | B |
| 9 | T | Phenanthrene | 178 | 9.471 | 1.003 | A | 1 | A | B |
| 10 | T | Anthracene | 178 | 9.527 | 1.009 | A | 1 | A | B |
| 11 | C | Fluoranthene | 202 | 10.777 | 1.141 | A | 1 | A | B |
| 12 | T | Pyrene | 202 | 11.029 | 1.168 | A | 1 | A | B |
| 13 | S | Terphenyl-d14 | 244 | 11.181 | 1.184 | A | 1 | A | B |
| 14 | T | Benzo(a)anthracene | 228 | 12.331 | 1.306 | L | 1 | A | B |
| 15 | T | Chrysene | 228 | 12.370 | 1.310 | A | 1 | A | B |
| 16 | T | Benzo(b)fluoranthene | 252 | 13.475 | 1.427 | A | 1 | A | B |
| 17 | T | Benzo(k)fluoranthene | 252 | 13.504 | 1.430 | A | 1 | A | B |
| 18 | C | Benzo(a)pyrene | 252 | 13.842 | 1.466 | A | 1 | A | B |
| 19 | T | Indeno(1,2,3-cd)pyrene | 276 | 15.336 | 1.624 | A | 1 | A | B |
| 20 | T | Dibenzo(a,h)anthracene | 278 | 15.353 | 1.626 | A | 1 | A | B |
| 21 | T | Benzo(g,h,i)perylene | 276 | 15.763 | 1.669 | A | 1 | A | B |

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

SVF0E08.M Thu May 08 14:38:06 2014 F0

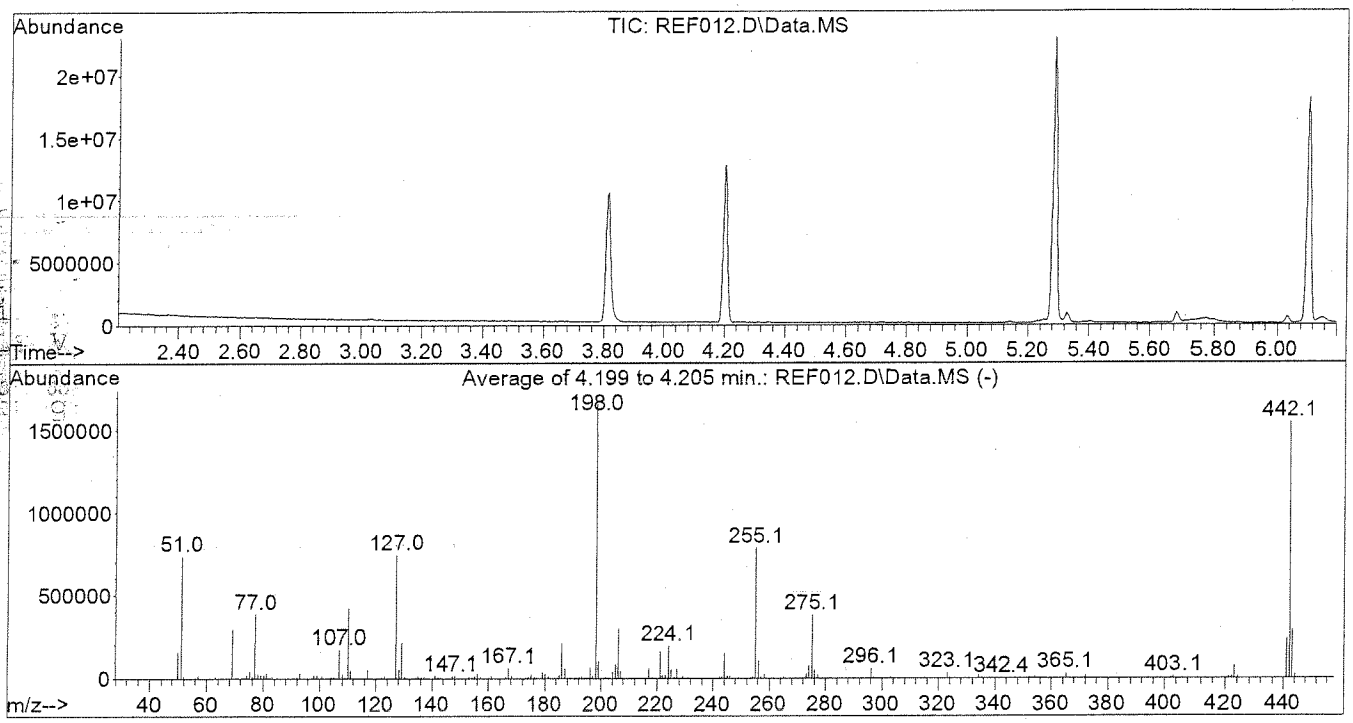
dw 7-11-14

3030

Data Path : C:\msdchem\1\DATA\14E08\
Data File : REF012.D
Acq On : 08 May 2014 11:44
Operator : KV
Sample : DFTF0F0801
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Fri May 09 13:48:37 2014




AutoFind: Scans 725, 726, 727; Background Corrected with Scan 716

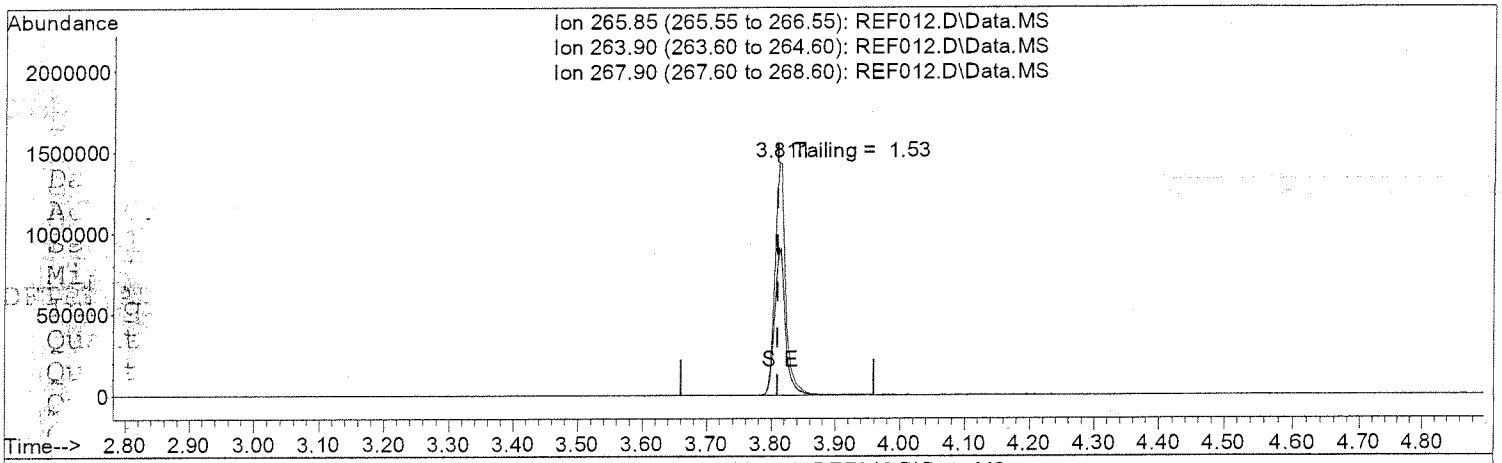
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 30 | 60 | 44.4 | 737448 | PASS |
| 68 | 69 | 0.00 | 2 | 0.8 | 2241 | PASS |
| 69 | 198 | 0.00 | 100 | 17.7 | 294208 | PASS |
| 70 | 69 | 0.00 | 2 | 0.1 | 361 | PASS |
| 127 | 198 | 40 | 60 | 44.9 | 744448 | PASS |
| 197 | 198 | 0.00 | 1 | 0.7 | 11039 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1659221 | PASS |
| 199 | 198 | 5 | 9 | 6.2 | 103579 | PASS |
| 275 | 198 | 10 | 30 | 22.9 | 380501 | PASS |
| 365 | 198 | 1 | 100 | 1.7 | 27571 | PASS |
| 441 | 443 | 0.01 | 100 | 81.1 | 232107 | PASS |
| 442 | 198 | 40 | 100 | 92.9 | 1541632 | PASS |
| 443 | 442 | 17 | 23 | 18.6 | 286251 | PASS |

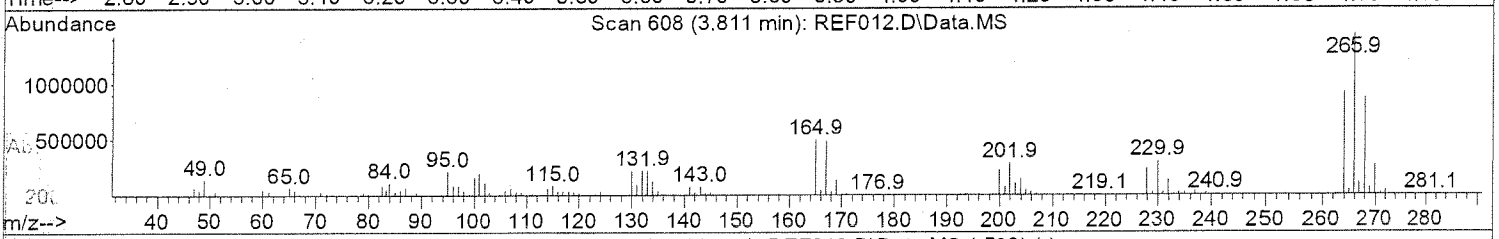
RE 7-11-14

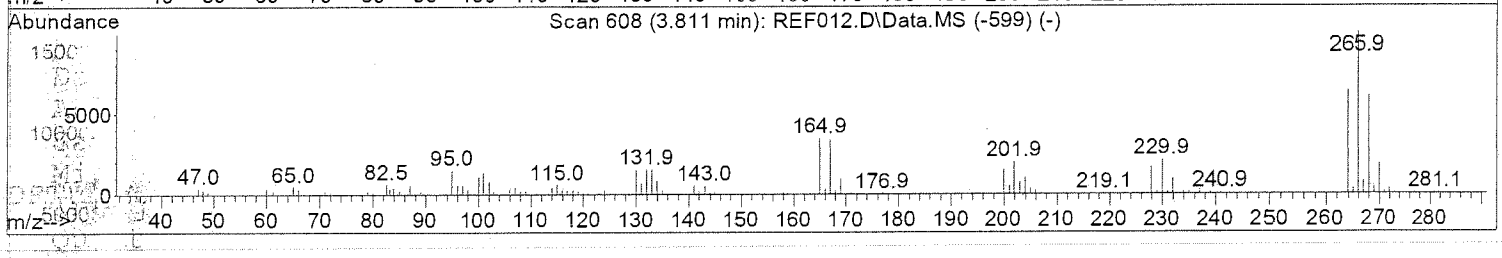
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(1) Pentachlorophenol (T)

3.811min (+0.000) 50.00 ppm

response 1690635

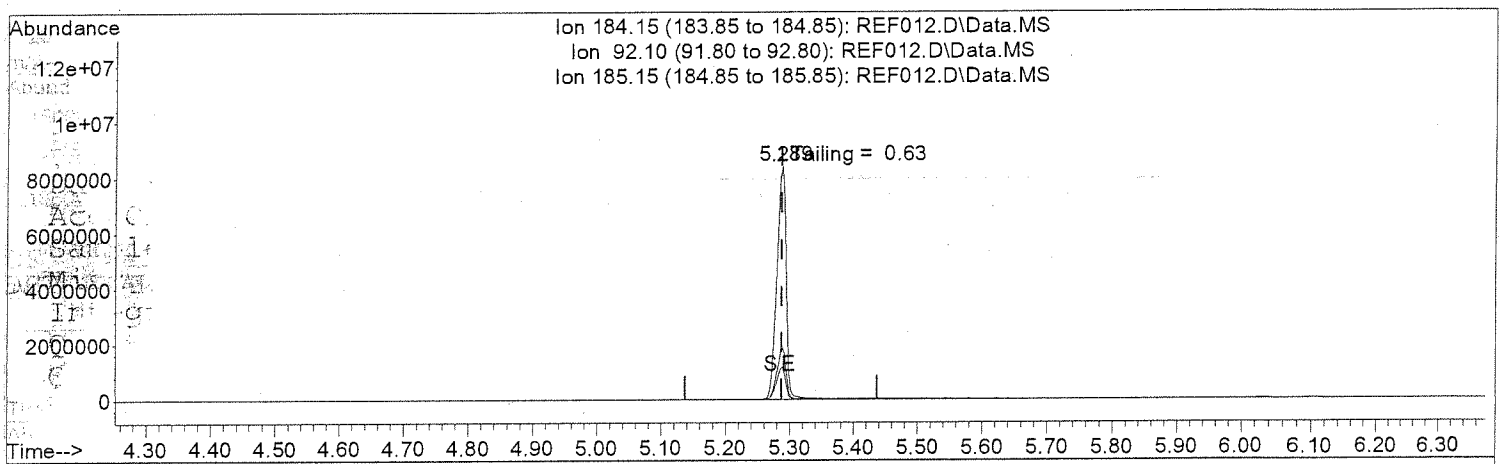
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 61.80 |
| 267.90 | 62.70 | 62.72 |
| 0.00 | 0.00 | 0.00 |

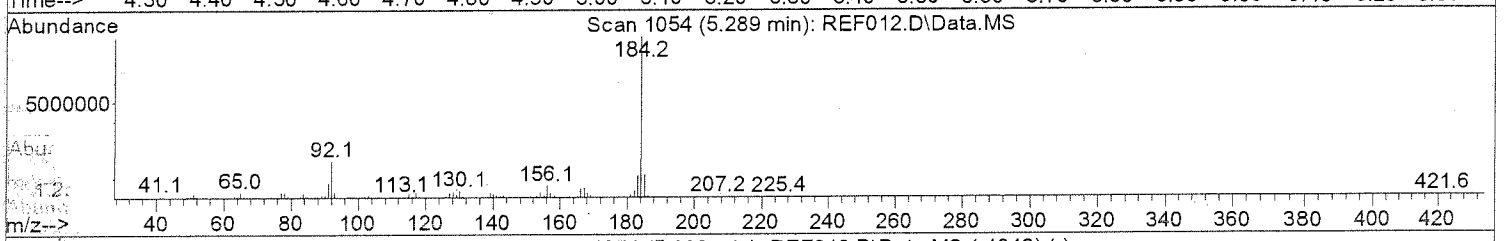
7-11-14

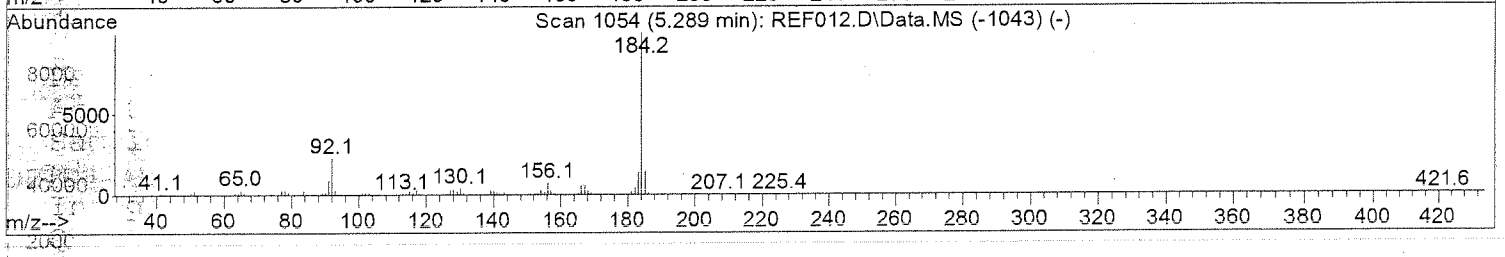
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(3) Benzidine (T)

5.289min (0.000) 50.00 ppm

response 8591117

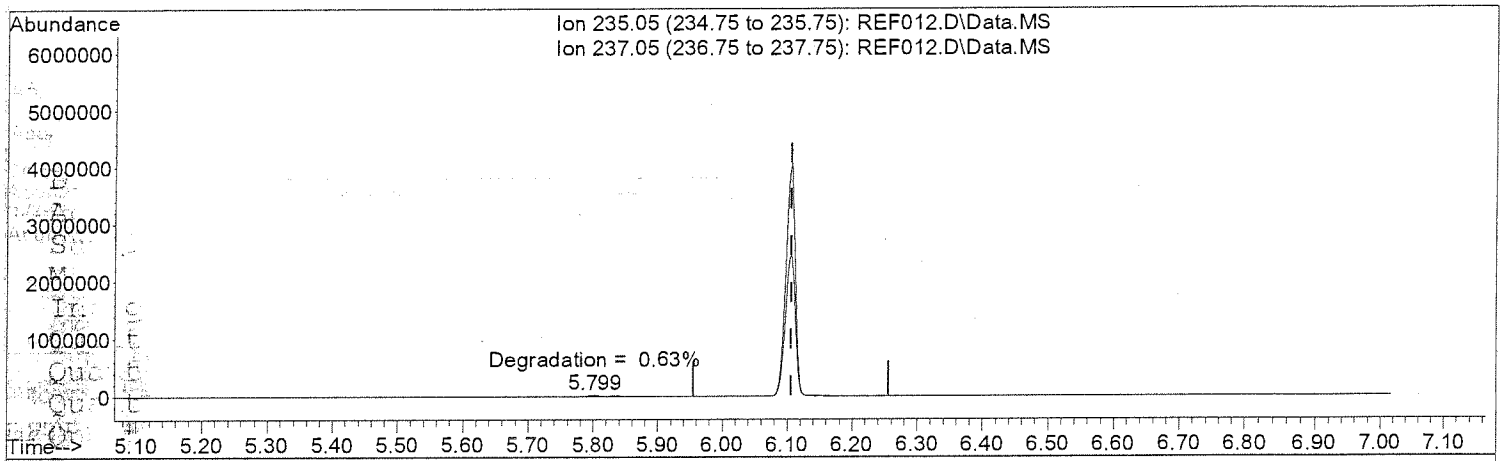
| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.65 |
| 185.15 | 13.30 | 13.29 |
| 0.00 | 0.00 | 0.00 |

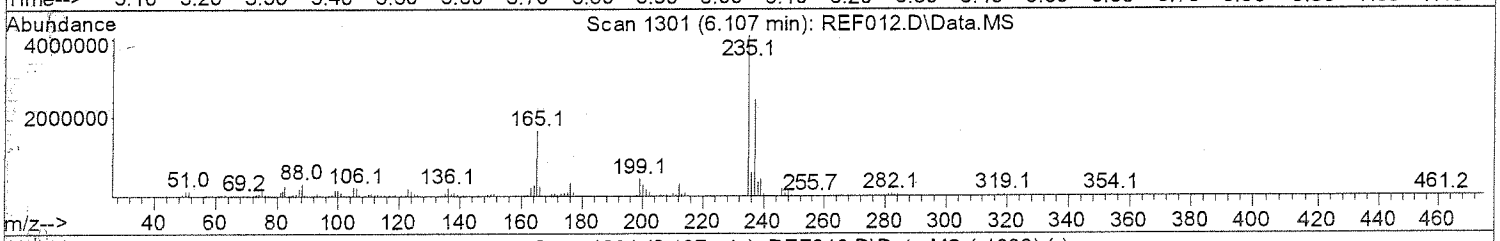
7-11-14

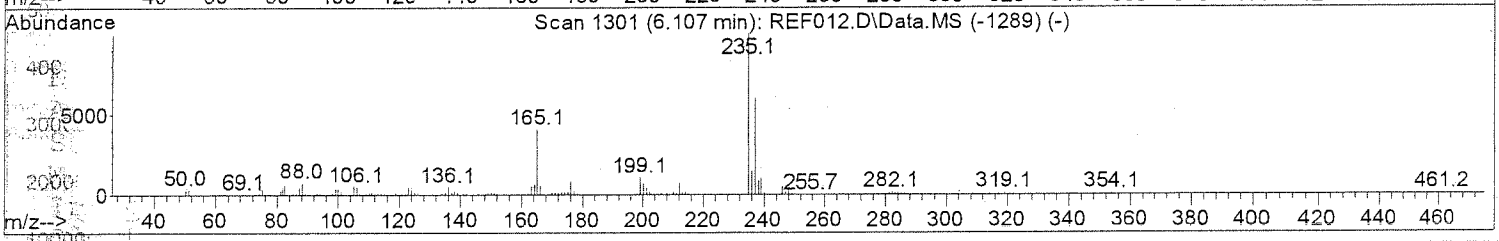
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(6) DDT (T)

6.107min (0.000) 50.00 ppm

response 4079265

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.24 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

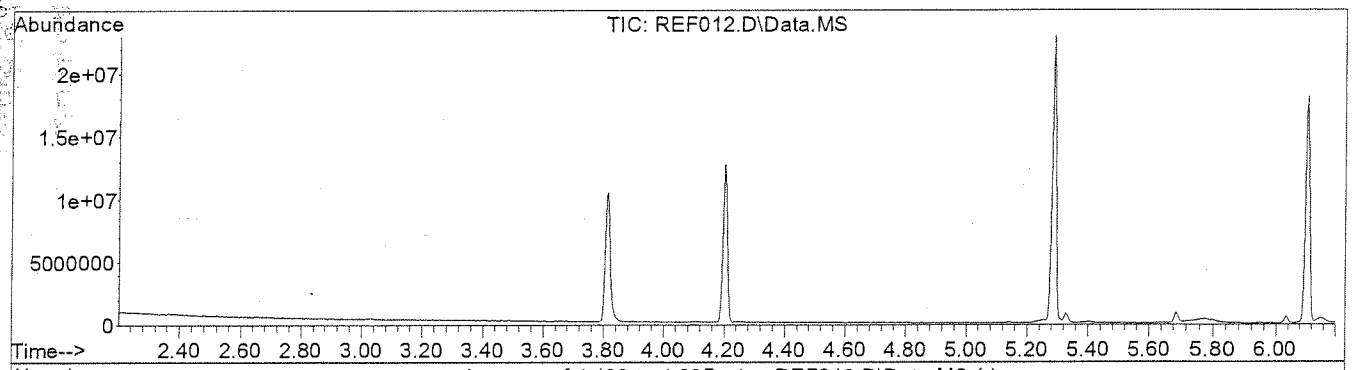
7-11-14

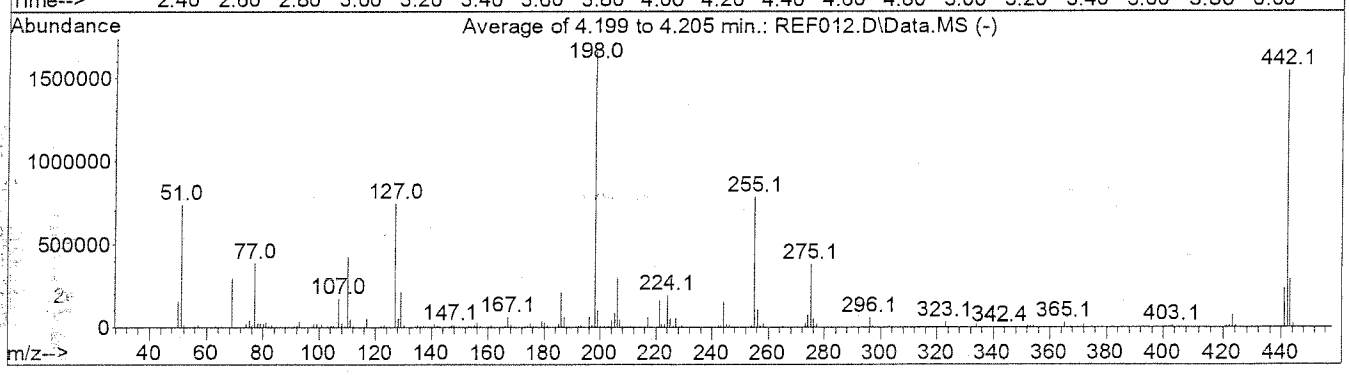
# DFTPP

Data Path : C:\msdchem\1\DATA\14E08\
Data File : REF012.D
Acq On : 08 May 2014 11:44
Operator : KV
Sample : DFTF0F0801
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : DFTPP-8270D
Last Update : Fri May 09 13:50:01 2014




AutoFind: Scans 725, 726, 727; Background Corrected with Scan 716

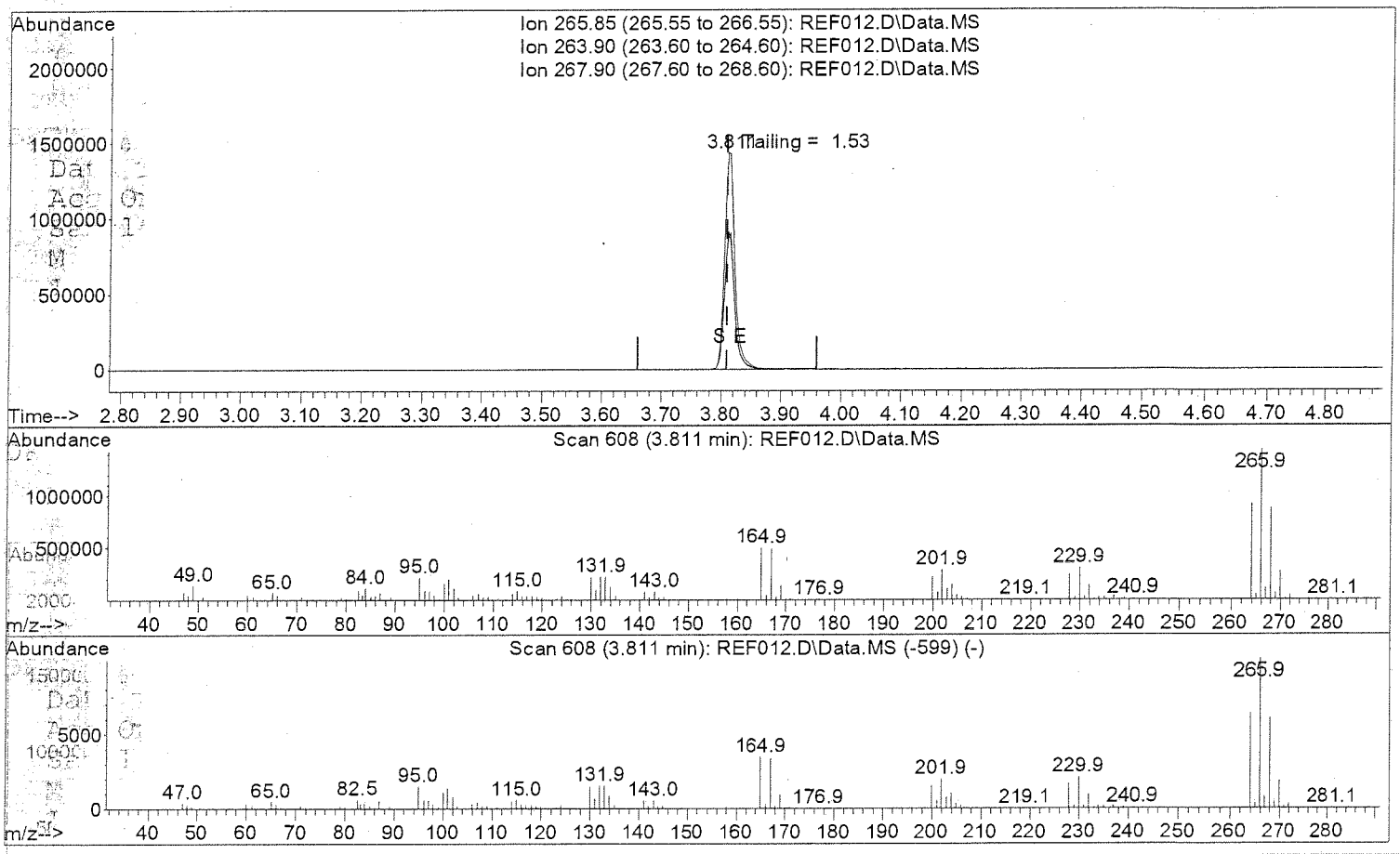
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 10 | 80 | 44.4 | 737448 | PASS |
| 68 | 69 | 0.00 | 2 | 0.8 | 2241 | PASS |
| 69 | 198 | 0.00 | 100 | 17.7 | 294208 | PASS |
| 70 | 69 | 0.00 | 2 | 0.1 | 361 | PASS |
| 127 | 198 | 10 | 80 | 44.9 | 744448 | PASS |
| 197 | 198 | 0.00 | 2 | 0.7 | 11039 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1659221 | PASS |
| 199 | 198 | 5 | 9 | 6.2 | 103579 | PASS |
| 275 | 198 | 10 | 60 | 22.9 | 380501 | PASS |
| 365 | 198 | 1 | 100 | 1.7 | 27571 | PASS |
| 441 | 442 | 0.01 | 24 | 15.1 | 232107 | PASS |
| 442 | 198 | 50 | 100 | 92.9 | 1541632 | PASS |
| 443 | 442 | 15 | 24 | 18.6 | 286251 | PASS |

pu 7-11-14

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(1) Pentachlorophenol (T)

3.811min (+0.000) 50.00 ppm

response 1690635

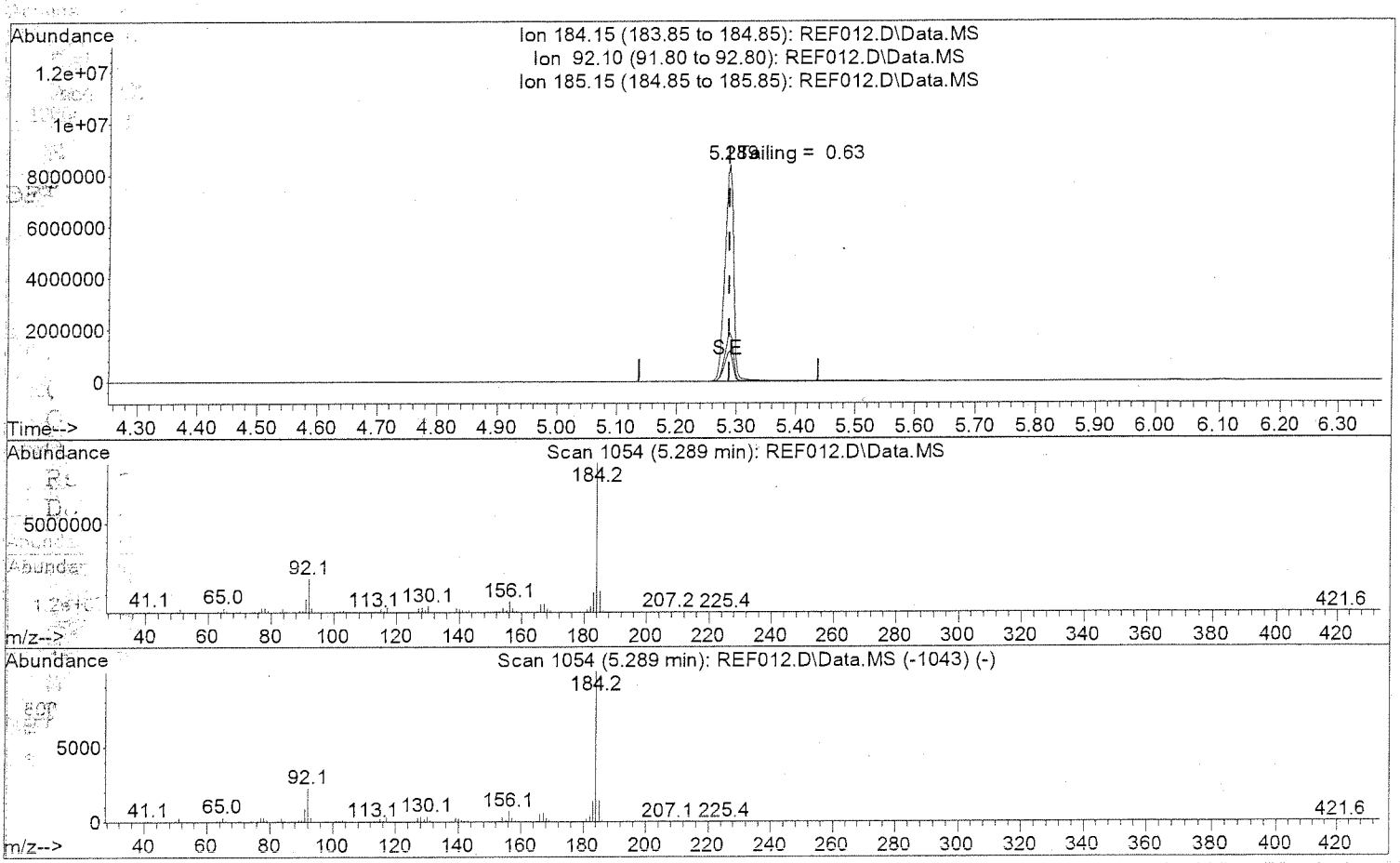
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 61.80 |
| 267.90 | 62.70 | 62.72# |
| 0.00 | 0.00 | 0.00 |

7-11-14

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(3) Benzidine (T)

5.289min (0.000) 50.00 ppm

response 8591117

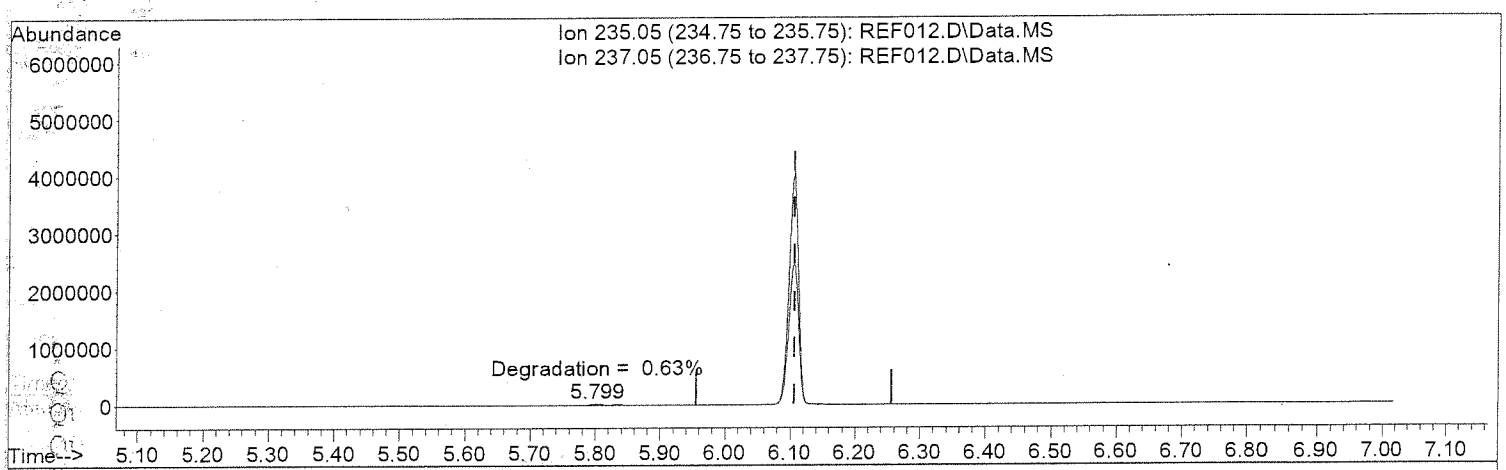
| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.65 |
| 185.15 | 13.30 | 13.29# |
| 0.00 | 0.00 | 0.00 |

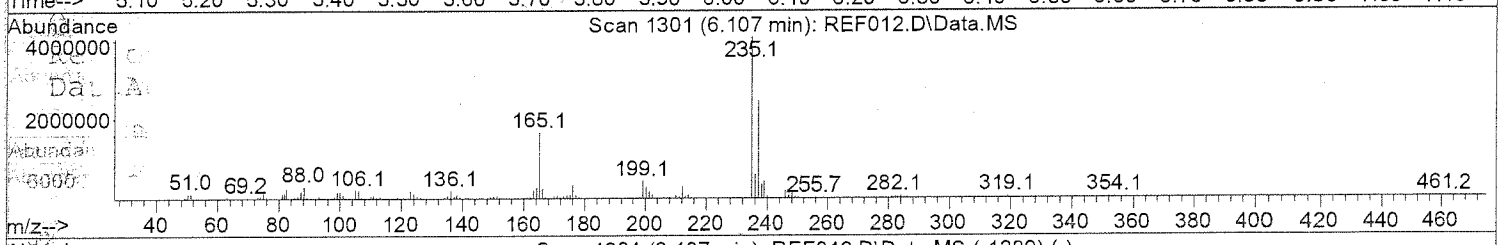
RCL 7-11-14

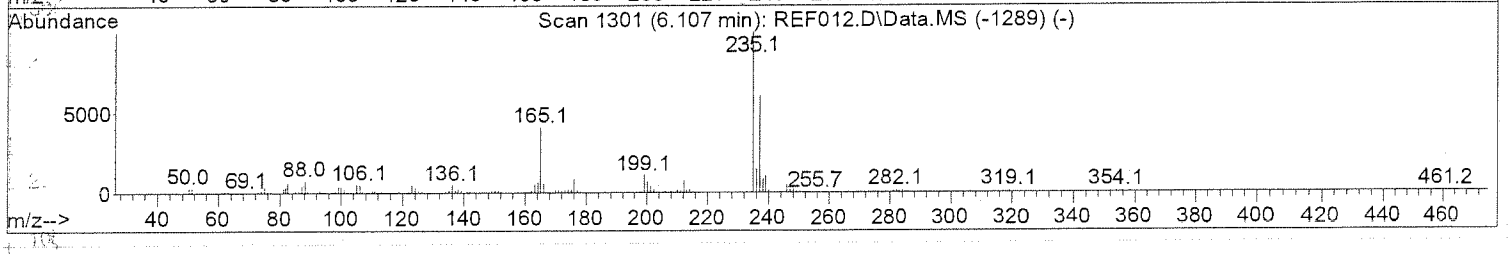
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(6) DDT (T)
6.107min (0.000) 50.00 ppm
response 4079265

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.24 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

RC 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF018.D
Vial: 8
Acq On : 08 May 2014 14:03
Operator: KV
Sample : SVF0E086 20PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:40:04 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

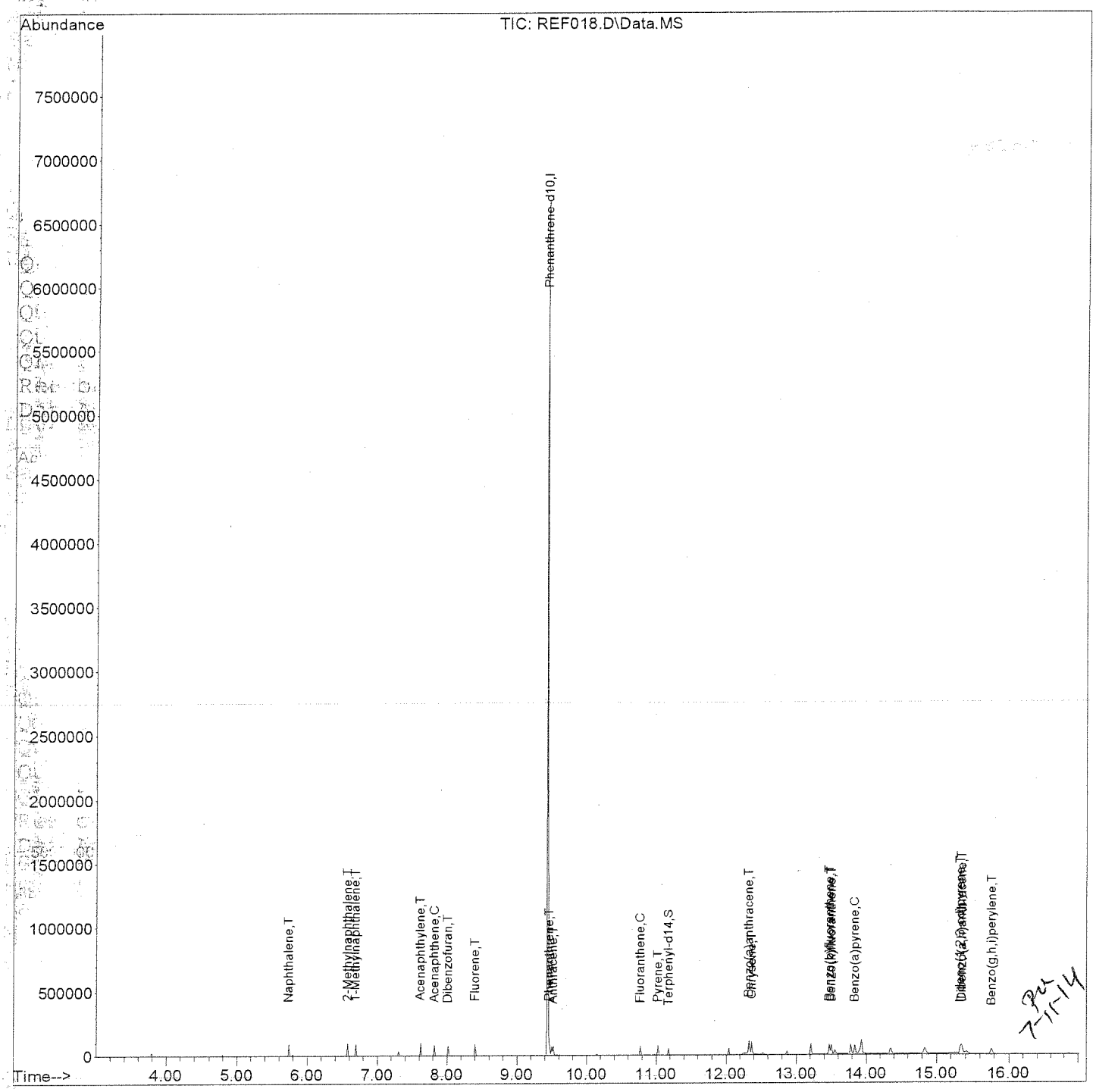
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 4821286 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 42038 | 23.58 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 4.72% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 76370 | 23.15 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 50590 | 22.86 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.693 | 142 | 47155 | 23.21 ppb | 98 |
| 5) Acenaphthylene | 7.623 | 152 | 65214 | 22.19 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 43775 | 22.90 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 55096 | 22.54 ppb | 98 |
| 8) Fluorene | 8.403 | 166 | 43644 | 22.37 ppb | 99 |
| 9) Phenanthrene | 9.469 | 178 | 56274 | 22.51 ppb | 99 |
| 10) Anthracene | 9.524 | 178 | 56170 | 22.37 ppb | 98 |
| 11) Fluoranthene | 10.774 | 202 | 53368 | 23.00 ppb | 98 |
| 12) Pyrene | 11.026 | 202 | 57800 | 23.03 ppb | 96 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 98467 | 20.95 ppb | 96 |
| 15) Chrysene | 12.368 | 228 | 76292 | 23.04 ppb | 50 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 73104 | 22.38 ppb | 95 |
| 17) Benzo(k)fluoranthene | 13.500 | 252 | 72569 | 22.24 ppb | 98 |
| 18) Benzo(a)pyrene | 13.838 | 252 | 68348 | 22.02 ppb | 92 |
| 19) Indeno(1,2,3-cd)pyrene | 15.331 | 276 | 83032 | 21.98 ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.348 | 278 | 70272 | 22.54 ppb | 92 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 67001 | 21.41 ppb | 97 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF018.D
Vial: 8
Acq On : 08 May 2014 14:03
Operator: KV
Sample : SVF0E086 20PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:40:04 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




PJL 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF017.D
Vial: 7
Acq On : 08 May 2014 13:40
Operator: KV
Sample : SVF0E085 40PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:47 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

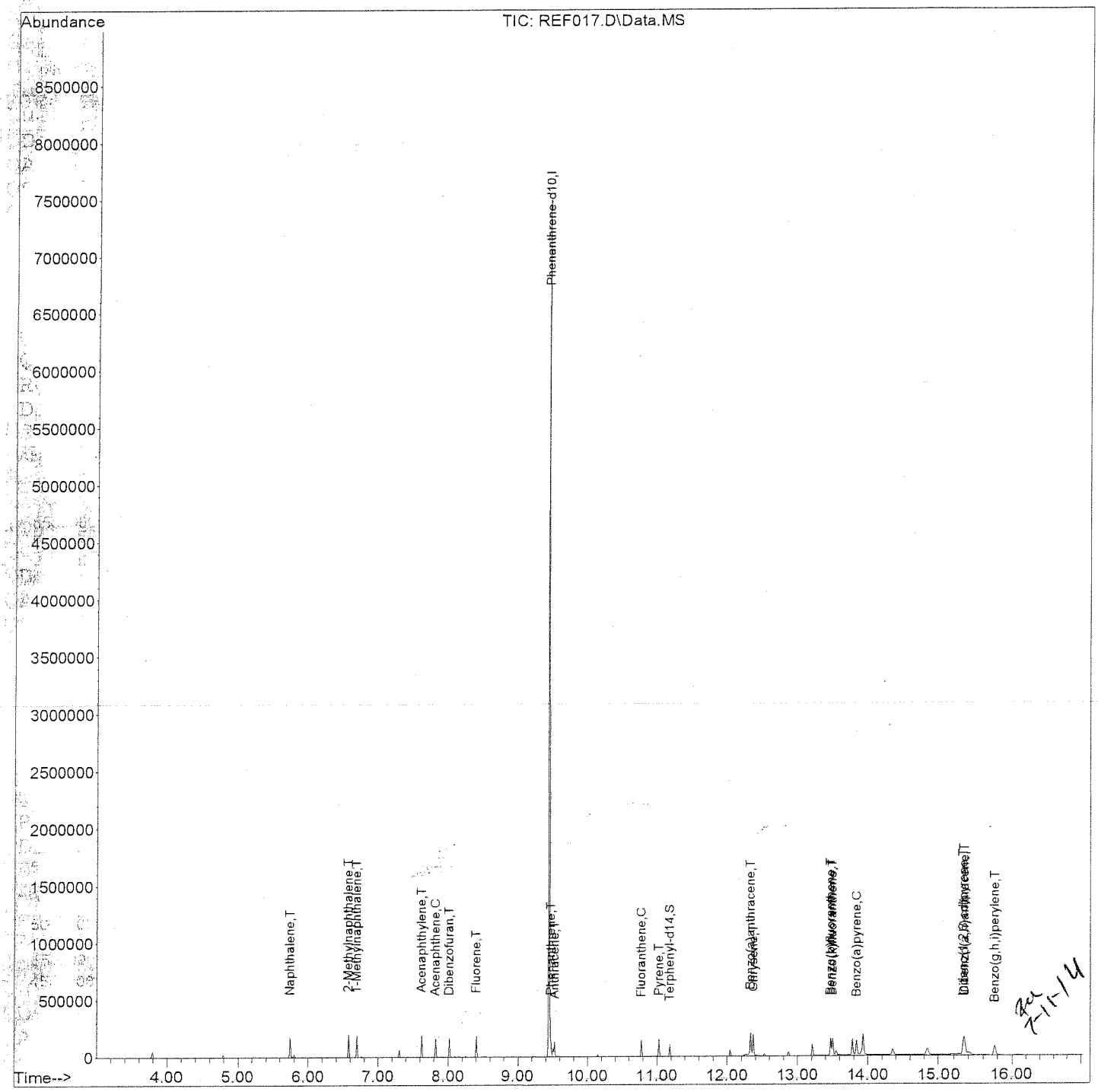
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.443 | 188 | 5477844 | 2000.00 | ppb | 0.00 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.180 | 244 | 83327 | 41.13 | ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = | 8.23% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 152169 | 40.59 | ppb | 99 |
| 3) 2-Methylnaphthalene | 6.578 | 142 | 100467 | 39.96 | ppb | 98 |
| 4) 1-Methylnaphthalene | 6.696 | 142 | 92719 | 40.16 | ppb | 99 |
| 5) Acenaphthylene | 7.625 | 152 | 133087 | 39.85 | ppb | 99 |
| 6) Acenaphthene | 7.823 | 153 | 87608 | 40.34 | ppb | 99 |
| 7) Dibenzofuran | 8.016 | 168 | 112420 | 40.49 | ppb | 99 |
| 8) Fluorene | 8.404 | 166 | 90161 | 40.67 | ppb | 99 |
| 9) Phenanthrene | 9.470 | 178 | 117504 | 41.37 | ppb | 98 |
| 10) Anthracene | 9.526 | 178 | 114777 | 40.22 | ppb | 99 |
| 11) Fluoranthene | 10.775 | 202 | 109222 | 41.42 | ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 115618 | 40.54 | ppb | 98 |
| 14) Benzo(a)anthracene | 12.330 | 228 | 181359 | 39.18 | ppb | 100 |
| 15) Chrysene | 12.369 | 228 | 153818 | 40.88 | ppb | 77 |
| 16) Benzo(b)fluoranthene | 13.472 | 252 | 147590 | 39.76 | ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.501 | 252 | 141499 | 38.17 | ppb | 98 |
| 18) Benzo(a)pyrene | 13.842 | 252 | 136839 | 38.81 | ppb | 95 |
| 19) Indeno(1,2,3-cd)pyrene | 15.333 | 276 | 170119 | 39.64 | ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.349 | 278 | 140943 | 39.79 | ppb | 93 |
| 21) Benzo(g,h,i)perylene | 15.760 | 276 | 139493 | 39.23 | ppb | 99 |

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

PM 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF017.D
Vial: 7
Acq On : 08 May 2014 13:40
Operator: KV
Sample : SVF0E085 40PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:47 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




Rc 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF016.D
Vial: 6
Acq On : 08 May 2014 13:17
Operator: KV
Sample : SVF0E084 80PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 7937548 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 219212 | 74.67 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 14.93% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 401533 | 73.92 ppb | 98 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 271326 | 74.48 ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 250355 | 74.84 ppb | 99 |
| 5) Acenaphthylene | 7.626 | 152 | 359752 | 74.35 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 234592 | 74.54 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 300779 | 74.76 ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 241130 | 75.06 ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 311853 | 75.77 ppb | 100 |
| 10) Anthracene | 9.527 | 178 | 313341 | 75.78 ppb | 99 |
| 11) Fluoranthene | 10.775 | 202 | 288030 | 75.38 ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 312643 | 75.65 ppb | 97 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 462964 | 75.43 ppb | 100 |
| 15) Chrysene | 12.370 | 228 | 410255 | 75.25 ppb | 97 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 403227 | 74.97 ppb | 99 |
| 17) Benzo(k)fluoranthene | 13.502 | 252 | 397711 | 74.04 ppb | 99 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 372463 | 72.90 ppb | 99 |
| 19) Indeno(1,2,3-cd)pyrene | 15.331 | 276 | 459641 | 73.91 ppb | 98 |
| 20) Dibenzo(a,h)anthracene | 15.348 | 278 | 378829 | 73.81 ppb | 99 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 392568 | 76.19 ppb | 98 |

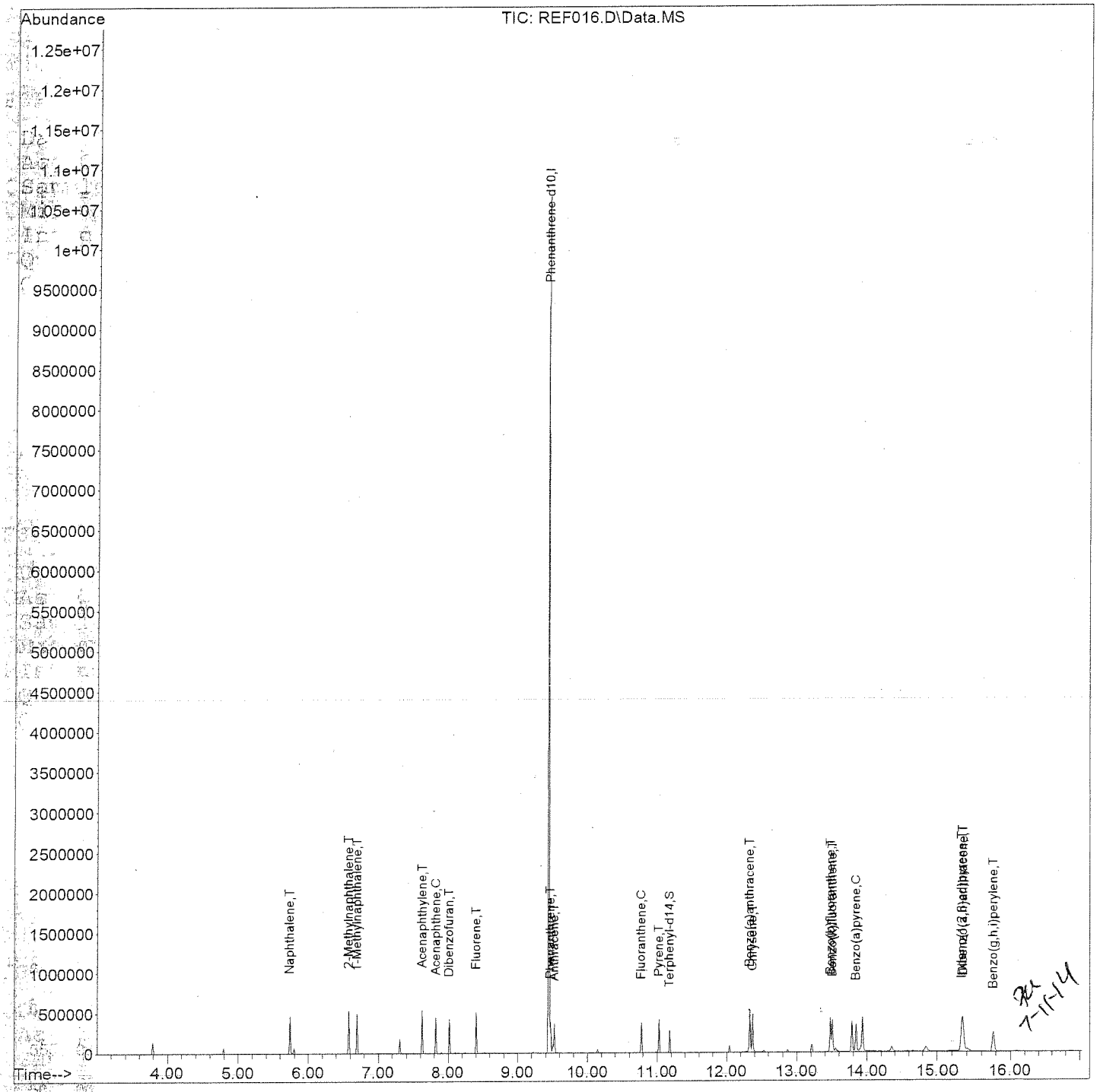
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF016.D
Acq On : 08 May 2014 13:17
Sample : SVF0E084 80PPB
Misc : F0
Integrator: RTE
Quant Time: May 08 14:39:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 6
Operator: KV
Inst : DSQ
Multiplr: 1.00




SVF0E08.M Thu May 08 14:39:44 2014 F0

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF015.D
Vial: 5
Acq On : 08 May 2014 12:54
Operator: KV
Sample : SVF0E083 100PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.444 | 188 | 5327101 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.181 | 244 | 190088 | 96.48 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 19.30% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.742 | 128 | 357872 | 98.17 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 244851 | 100.15 ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 222774 | 99.22 ppb | 99 |
| 5) Acenaphthylene | 7.626 | 152 | 328041 | 101.01 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 213620 | 101.14 ppb | 99 |
| 7) Dibenzofuran | 8.015 | 168 | 270411 | 100.14 ppb | 99 |
| 8) Fluorene | 8.403 | 166 | 218467 | 101.34 ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 278620 | 100.87 ppb | 99 |
| 10) Anthracene | 9.527 | 178 | 278120 | 100.22 ppb | 99 |
| 11) Fluoranthene | 10.777 | 202 | 253501 | 98.86 ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 274024 | 98.80 ppb | 96 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 396477 | 98.57 ppb | 96 |
| 15) Chrysene | 12.370 | 228 | 353201 | 96.53 ppb | 93 |
| 16) Benzo(b)fluoranthene | 13.472 | 252 | 349041 | 96.69 ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.502 | 252 | 359178 | 99.63 ppb | 98 |
| 18) Benzo(a)pyrene | 13.840 | 252 | 333230 | 97.18 ppb | 100 |
| 19) Indeno(1,2,3-cd)pyrene | 15.333 | 276 | 402132 | 96.35 ppb | 98 |
| 20) Dibenzo(a,h)anthracene | 15.350 | 278 | 332039 | 96.40 ppb | 99 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 337001 | 97.45 ppb | 100 |

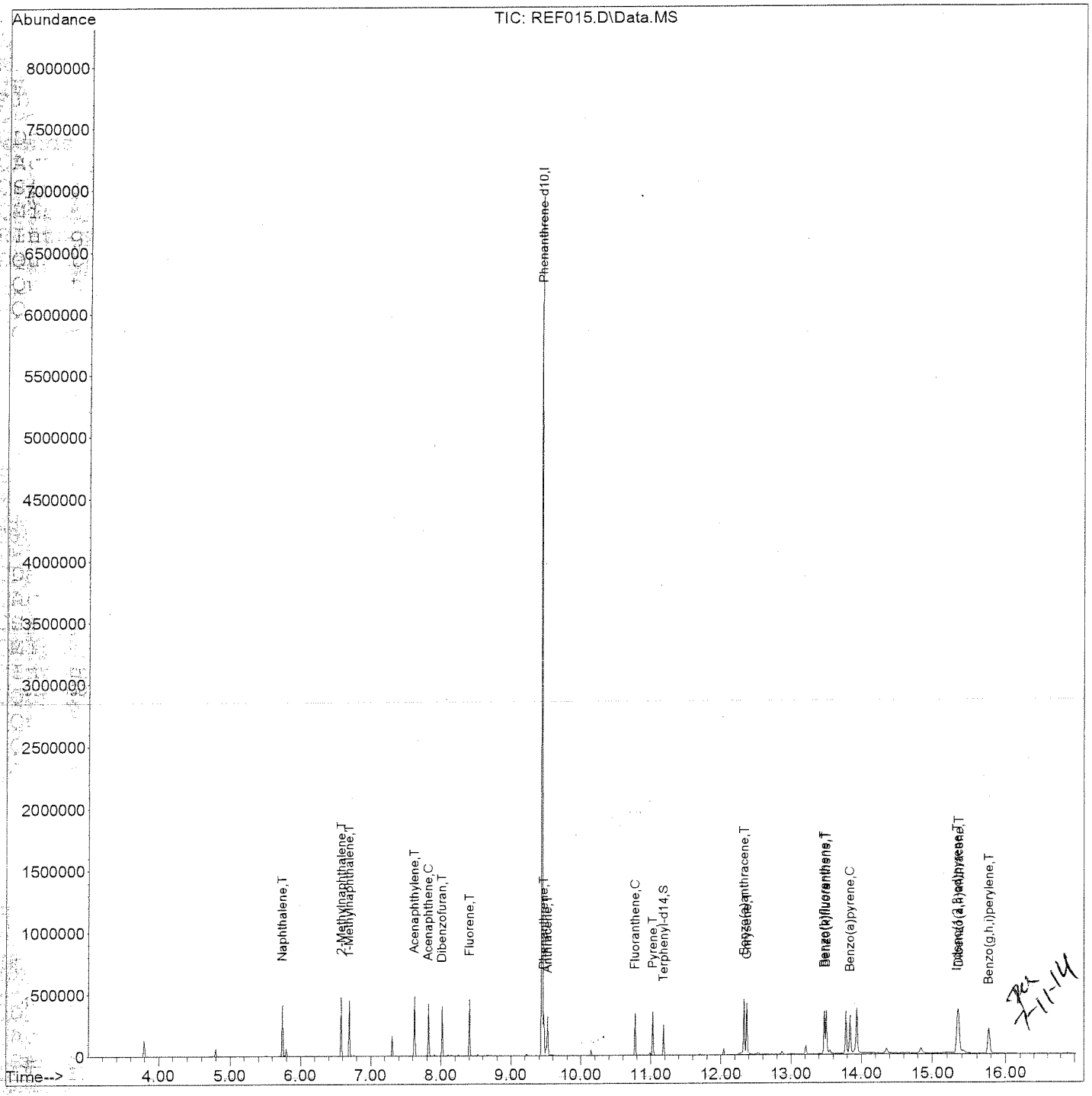
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF015.D
Acq On : 08 May 2014 12:54
Sample : SVF0E083 100PPB
Misc : F0
Integrator: RTE
Quant Time: May 08 14:39:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 5
Operator: KV
Inst : DSQ
Multiplr: 1.00




7-11-14



3046

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF014.D
Vial: 4
Acq On : 08 May 2014 12:31
Operator: KV
Sample : SVF0E082 500PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:00 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

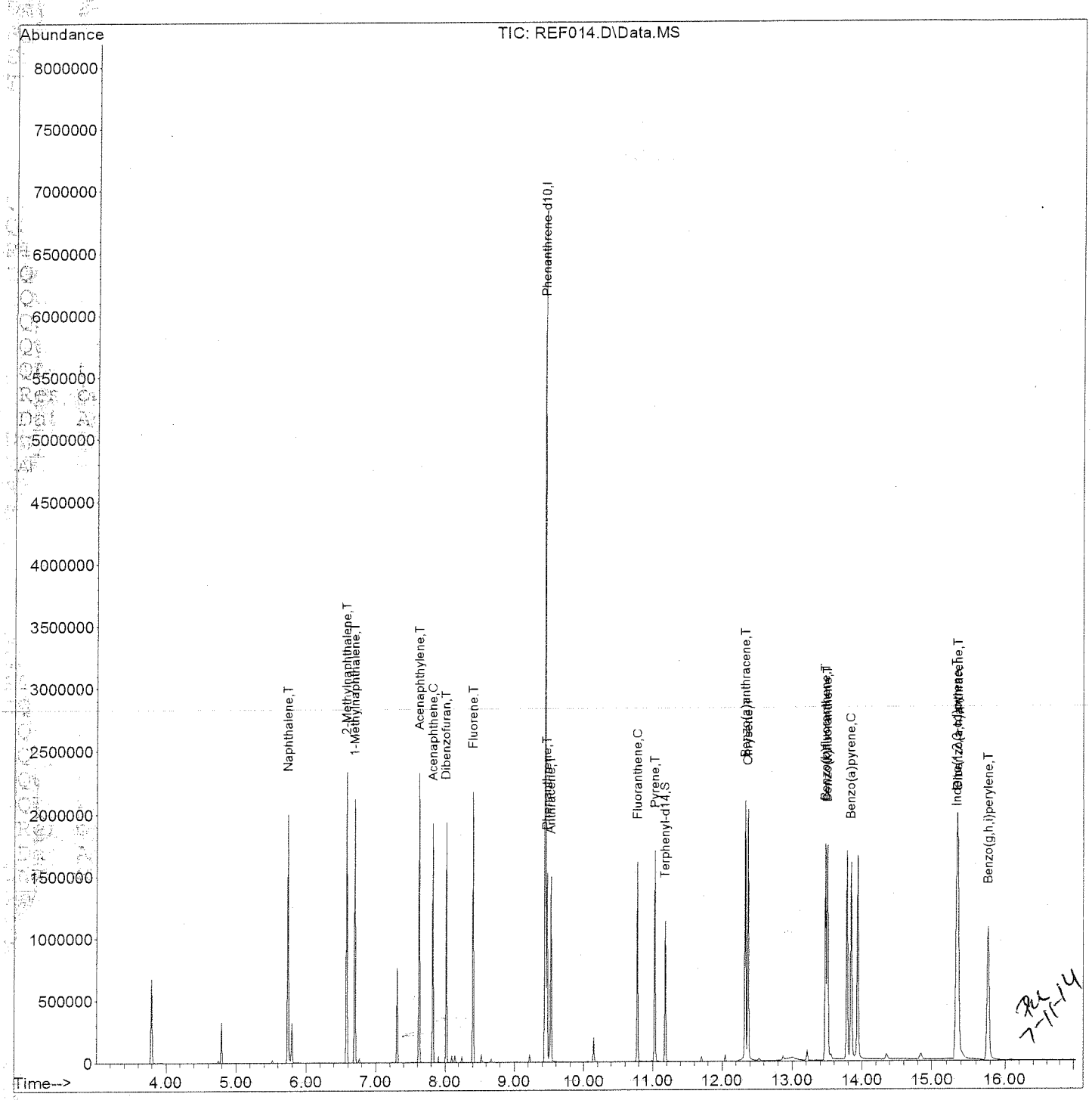
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.444 | 188 | 5005097 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.181 | 244 | 918914 | 496.42 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 99.28% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 1741943 | 508.59 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 1168286 | 508.61 ppb | 100 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 1062669 | 503.76 ppb | 100 |
| 5) Acenaphthylene | 7.626 | 152 | 1557242 | 510.37 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 984537 | 496.11 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 1273461 | 501.94 ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 1006867 | 497.08 ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 1283892 | 494.70 ppb | 100 |
| 10) Anthracene | 9.527 | 178 | 1310366 | 502.58 ppb | 100 |
| 11) Fluoranthene | 10.777 | 202 | 1197242 | 496.93 ppb | 100 |
| 12) Pyrene | 11.029 | 202 | 1289762 | 494.96 ppb | 100 |
| 14) Benzo(a)anthracene | 12.331 | 228 | 1904241 | 538.42 ppb | 100 |
| 15) Chrysene | 12.370 | 228 | 1736704 | 505.18 ppb | 100 |
| 16) Benzo(b)fluoranthene | 13.475 | 252 | 1763855 | 520.06 ppb | 100 |
| 17) Benzo(k)fluoranthene | 13.504 | 252 | 1812490 | 535.08 ppb | 100 |
| 18) Benzo(a)pyrene | 13.842 | 252 | 1724163 | 535.18 ppb | 100 |
| 19) Indeno(1,2,3-cd)pyrene | 15.336 | 276 | 2073112 | 528.68 ppb | 100 |
| 20) Dibenzo(a,h)anthracene | 15.353 | 278 | 1685316 | 520.75 ppb | 100 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 1737462 | 534.77 ppb | 100 |

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

JCC 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF014.D
Vial: 4
Acq On : 08 May 2014 12:31
Operator: KV
Sample : SVF0E082 500PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:00 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




RC 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF013.D
Vial: 3
Acq On : 08 May 2014 12:10
Operator: KV
Sample : SVF0E081 1000PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:38:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 5187965 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 1730433 | 901.87 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 180.37% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 3212458 | 904.87 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 2161799 | 907.96 ppb | 100 |
| 4) 1-Methylnaphthalene | 6.693 | 142 | 1968901 | 900.47 ppb | 100 |
| 5) Acenaphthylene | 7.623 | 152 | 2954163 | 934.07 ppb | 99 |
| 6) Acenaphthene | 7.821 | 153 | 1874579 | 911.31 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 2421617 | 920.85 ppb | 99 |
| 8) Fluorene | 8.403 | 166 | 1929445 | 918.98 ppb | 100 |
| 9) Phenanthrene | 9.469 | 178 | 2407864 | 895.09 ppb | 100 |
| 10) Anthracene | 9.525 | 178 | 2490401 | 921.51 ppb | 100 |
| 11) Fluoranthene | 10.775 | 202 | 2222593 | 889.99 ppb | 100 |
| 12) Pyrene | 11.027 | 202 | 2462047 | 911.53 ppb | 100 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 3522474 | 967.45 ppb | 94 |
| 15) Chrysene | 12.368 | 228 | 3242045 | 909.81 ppb | 99 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 3315418 | 943.07 ppb | 96 |
| 17) Benzo(k)fluoranthene | 13.503 | 252 | 3307129 | 941.91 ppb | 91 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 3256376 | 975.15 ppb | 96 |
| 19) Indeno(1,2,3-cd)pyrene | 15.336 | 276 | 3922801 | 965.12 ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.351 | 278 | 3186834 | 950.01 ppb | 100 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 3207572 | 952.45 ppb | 98 |

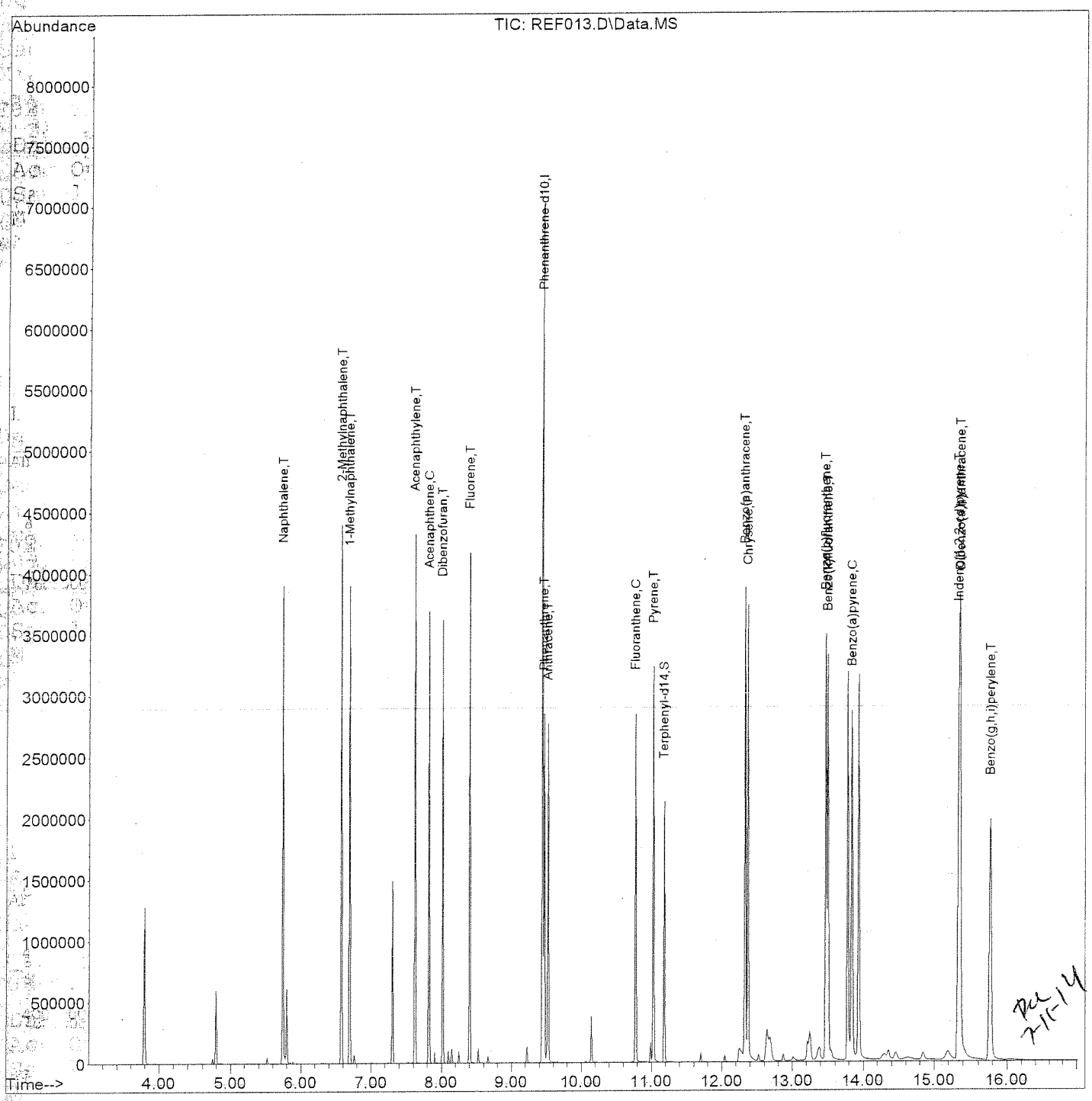
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF013.D
Acq On : 08 May 2014 12:10
Sample : SVF0E081 1000PPB
Misc : F0
Integrator: RTE
Quant Time: May 08 14:38:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 3
Operator: KV
Inst : DSQ
Multiplr: 1.00




pc 7-11-14



3050

# SECOND SOURCE VERIFICATION

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Acq On : 08 May 2014 14:26
Sample : ISVF0E081
Misc : F0
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 9
Operator: KV
Inst : DSQ
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | Amount | Calc. | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 2000.000 | 2000.000 | 0.0 | 126 | 0.00 |
| 2 | T | Naphthalene | 500.000 | 475.713 | 4.9 | 117 | 0.00 |
| 3 | T | 2-Methylnaphthalene | 500.000 | 460.899 | 7.8 | 114 | 0.00 |
| 4 | T | 1-Methylnaphthalene | 500.000 | 479.043 | 4.2 | 119 | 0.00 |
| 5 | T | Acenaphthylene | 500.000 | 469.742 | 6.1 | 116 | 0.00 |
| 6 | C | Acenaphthene | 500.000 | 479.360 | 4.1 | 121 | 0.00 |
| 7 | T | Dibenzofuran | 500.000 | 455.746 | 8.9 | 114 | 0.00 |
| 8 | T | Fluorene | 500.000 | 469.595 | 6.1 | 119 | 0.00 |
| 9 | T | Phenanthrene | 500.000 | 470.736 | 5.9 | 119 | 0.00 |
| 10 | T | Anthracene | 500.000 | 464.238 | 7.2 | 116 | 0.00 |
| 11 | C | Fluoranthene | 500.000 | 488.088 | 2.4 | 123 | 0.00 |
| 12 | T | Pyrene | 500.000 | 471.132 | 5.8 | 120 | 0.00 |
| 13 | S | Terphenyl-d14 | 500.000 | 0.000 | 100.0# | 0 | -11.18# |
| 14 | T | Benzo(a)anthracene | 500.000 | 513.537 | -2.7 | 120 | 0.00 |
| 15 | T | Chrysene | 500.000 | 482.748 | 3.5 | 120 | 0.00 |
| 16 | T | Benzo(b)fluoranthene | 500.000 | 496.628 | 0.7 | 120 | 0.00 |
| 17 | T | Benzo(k)fluoranthene | 500.000 | 494.243 | 1.2 | 116 | 0.00 |
| 18 | C | Benzo(a)pyrene | 500.000 | 494.774 | 1.0 | 116 | 0.00 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 500.000 | 490.776 | 1.8 | 117 | 0.00 |
| 20 | T | Dibenzo(a,h)anthracene | 500.000 | 488.185 | 2.4 | 118 | 0.00 |
| 21 | T | Benzo(g,h,i)perylene | 500.000 | 490.934 | 1.8 | 115 | 0.00 |

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

7-11-14

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Vial: 9
Acq On : 08 May 2014 14:26
Operator: KV
Sample : ISVF0E081
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 126 | 0.00 |
| 2 | T | Naphthalene | 1.369 | 1.302 | 4.9 | 117 | 0.00 |
| 3 | T | 2-Methylnaphthalene | 0.918 | 0.846 | 7.8 | 114 | 0.00 |
| 4 | T | 1-Methylnaphthalene | 0.843 | 0.808 | 4.2 | 119 | 0.00 |
| 5 | T | Acenaphthylene | 1.219 | 1.145 | 6.1 | 116 | 0.00 |
| 6 | C | Acenaphthene | 0.793 | 0.760 | 4.2 | 121 | 0.00 |
| 7 | T | Dibenzofuran | 1.014 | 0.924 | 8.9 | 114 | 0.00 |
| 8 | T | Fluorene | 0.809 | 0.760 | 6.1 | 119 | 0.00 |
| 9 | T | Phenanthrene | 1.037 | 0.976 | 5.9 | 119 | 0.00 |
| 10 | T | Anthracene | 1.042 | 0.967 | 7.2 | 116 | 0.00 |
| 11 | C | Fluoranthene | 0.963 | 0.940 | 2.4 | 123 | 0.00 |
| 12 | T | Pyrene | 1.041 | 0.981 | 5.8 | 120 | 0.00 |
| 13 | S | Terphenyl-d14 | 0.740 | 0.000# | 100.0# | 0# | -11.18# |
| 14 | T | Benzo(a)anthracene | 1.587 | 1.453 | 8.4 | 120 | 0.00 |
| 15 | T | Chrysene | 1.374 | 1.326 | 3.5 | 120 | 0.00 |
| 16 | T | Benzo(b)fluoranthene | 1.355 | 1.346 | 0.7 | 120 | 0.00 |
| 17 | T | Benzo(k)fluoranthene | 1.354 | 1.338 | 1.2 | 116 | 0.00 |
| 18 | C | Benzo(a)pyrene | 1.287 | 1.274 | 1.0 | 116 | 0.00 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 1.567 | 1.538 | 1.9 | 117 | 0.00 |
| 20 | T | Dibenzo(a,h)anthracene | 1.293 | 1.263 | 2.3 | 118 | 0.00 |
| 21 | T | Benzo(g,h,i)perylene | 1.298 | 1.275 | 1.8 | 115 | 0.00 |

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

RW 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Vial: 9
Acq On : 08 May 2014 14:26
Operator: KV
Sample : ISVF0E081
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
Last Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

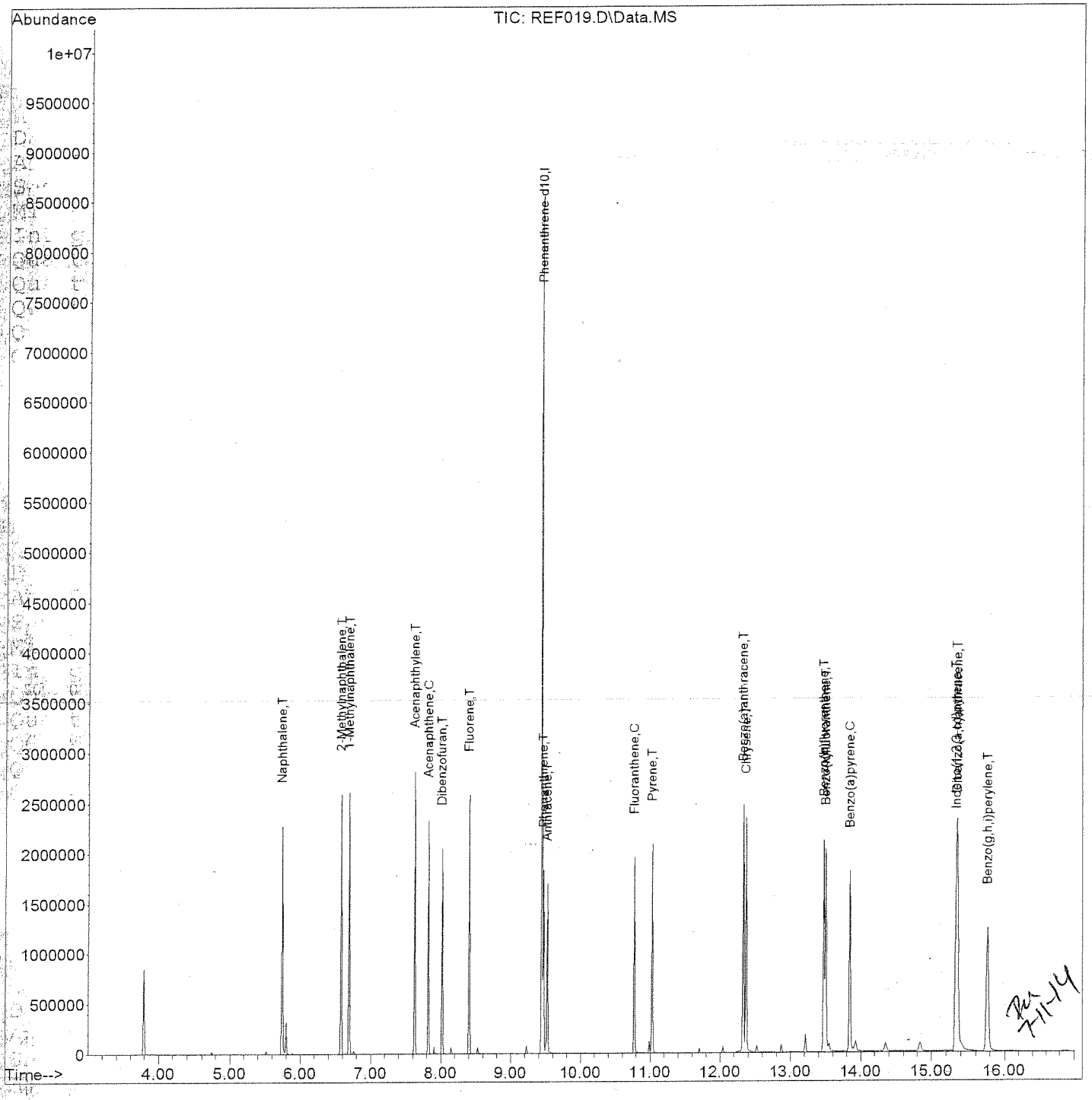
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 6284290 | 2000.00 ppb | 0.00 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 0.000 | 244 | 0d | 0.00 ppb | |
| Spiked Amount 500.000 | | | Recovery | = 0.00% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 2045775 | 475.71 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 1329272 | 460.90 ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 1268792 | 479.04 ppb | 100 |
| 5) Acenaphthylene | 7.626 | 152 | 1799597 | 469.74 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 1194428 | 479.36 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 1451767 | 455.75 ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 1194287 | 469.59 ppb | 100 |
| 9) Phenanthrene | 9.469 | 178 | 1533926 | 470.74 ppb | 100 |
| 10) Anthracene | 9.525 | 178 | 1519738 | 464.24 ppb | 100 |
| 11) Fluoranthene | 10.775 | 202 | 1476496 | 488.09 ppb | 100 |
| 12) Pyrene | 11.027 | 202 | 1541444 | 471.13 ppb | 97 |
| 14) Benzo(a)anthracene | 12.330 | 228 | 2282138 | 513.54 ppb | 94 |
| 15) Chrysene | 12.368 | 228 | 2083761 | 482.75 ppb | 98 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 2114870 | 496.63 ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.501 | 252 | 2102041 | 494.24 ppb | 100 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 2001383 | 494.77 ppb | 99 |
| 19) Indeno(1,2,3-cd)pyrene | 15.332 | 276 | 2416327 | 490.78 ppb | 97 |
| 20) Dibenzo(a,h)anthracene | 15.349 | 278 | 1983704 | 488.19 ppb | 97 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 2002714 | 490.93 ppb | 99 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Vial: 9
Acq On : 08 May 2014 14:26
Operator: KV
Sample : ISVF0E081
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




SVF0E08.M Thu May 08 14:52:17 2014 F0



3055

# DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RJF031
Instrument ID: TOF0

Project: RED HILL PHASE 1B
SDG No.: 14J144
DFTPP Injection Date: 10/28/14
DFTPP Injection Time: 09:33

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 40.81 |
| 68 | Less than 2% of mass 69 | 0.25( 1.1)1 |
| 69 | Relative abundance of mass 198 | 22.34 |
| 70 | Less than 2.0% of mass 69 | 0.06( 0.3)1 |
| 127 | 40.0 - 60.0% of mass 198 | 44.74 |
| 197 | Less than 1.0% of mass 198 | 0.36 |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 199 | 5.0 - 9.0% of mass 198 | 6.52 |
| 275 | 10.0 - 30.0% of mass 198 | 28.77 |
| 365 | Greater than 1.00% of mass 198 | 2.00 |
| 441 | Present, but less than mass 443 | 13.28( 84.6)3 |
| 442 | Greater than 40.0% of mass 198 | 86.46 |
| 443 | 17.0 - 23.0% of mass 442 | 15.69( 18.2)2 |

1-Value is % mass 69 2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 1 | SSTD500 | CSVF0E0807 | RJF032 | 10/28/14 | 09:48 |
| 2 | MBLK1W | SVJ034WB | RJF033 | 10/28/14 | 10:13 |
| 3 | LCS1W | SVJ034WL | RJF034 | 10/28/14 | 10:41 |
| 4 | LCD1W | SVJ034WC | RJF035 | 10/28/14 | 11:08 |
| 5 | RHMW06-GW-01 | J144-01 | RJF038 | 10/28/14 | 12:26 |
| 6 | RHMW06-GW-01MS | J144-01M | RJF039 | 10/28/14 | 13:52 |
| 7 | RHMW06-GW-01MSD | J144-01S | RJF040 | 10/28/14 | 14:22 |

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF014
Instrument ID: TOF0

Project:RED HILL PHASE 1B
SDG No.: 14J144
Date Analyzed: 05/08/14
Time Analyzed: 12:31

| | | IS4(PHN) AREA # | RT # | IS5(CRY) AREA # | RT # | IS6(PRY) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 5005097 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| | UPPER LIMIT | 10010194 | 9.94 | 0 | 0.50 | 0 | 0.50 |
| | LOWER LIMIT | 2502549 | 8.94 | 0 | -0.50 | 0 | -0.50 |
| | SAMPLE ID | | | | | | |
| 1 | SSTD500 | 5332031 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 2 | MBLK1W | 4529029 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 3 | LCS1W | 4565409 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 4 | LCD1W | 4726800 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 5 | RHMW06-GW-01 | 4445779 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 6 | RHMW06-GW-01MS | 5148446 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 7 | RHMW06-GW-01MSD | 5072301 | 9.47 | 0 | 0.00 | 0 | 0.00 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :DSQ
IC_Beginning DateTime :05/08/14 12:10
Spike Amount :500 PPB
CC/CV File :RJF032
IC File :REF014

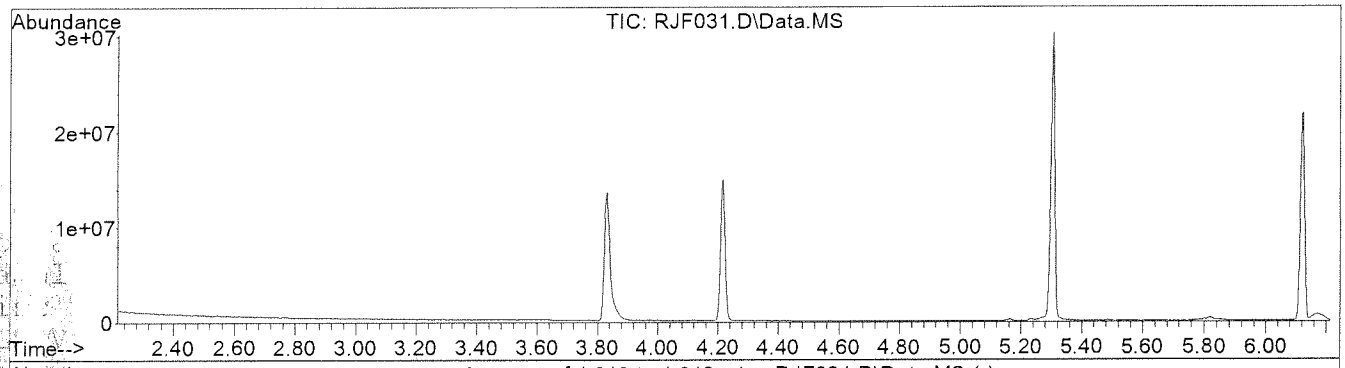
Column Spec :ZB-SEMIVOA ID:0.25MM
IC_Ending DateTime :05/08/14 14:03
HPChem Method :SVF0E08
Date_Time :10/28/14 09:48

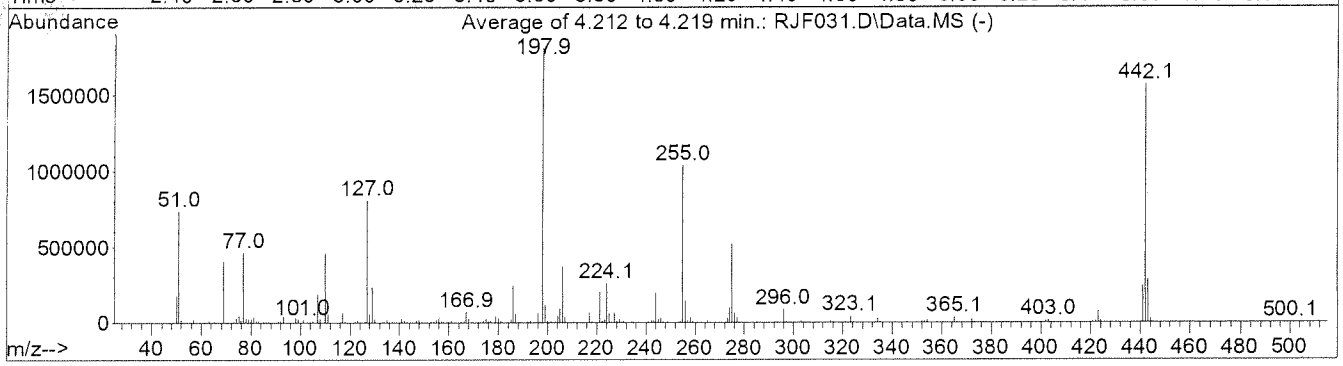
| M IDX | Parameters | CC_Con | CC%_D | CC_Resp | CCRRF | AvRRF | CC_Rtm | AvRtm | %_RSD | Co_X0 | Co_X1 | Co_X2 | Co_Cor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 2000.00 | 0 | 5332031 | 1 | 1 | 9.466 | 9.443 | 0 | | | | |
| 2 | Naphthalene | 412.934 | -17.4 | 1506711 | 1.130 | 1.369 | 5.764 | 5.740 | 8.99 | | | | |
| 3 | 2-Methylnaphthalene | 511.352 | 2.3 | 1251309 | 0.939 | 0.918 | 6.604 | 6.577 | 8.25 | | | | |
| 4 | 1-Methylnaphthalene | 498.046 | -0.4 | 1119237 | 0.840 | 0.843 | 6.722 | 6.694 | 8.93 | | | | |
| 5 | Acenaphthylene | 478.943 | -4.2 | 1556810 | 1.168 | 1.219 | 7.655 | 7.625 | 6.61 | | | | |
| 6 | Acenaphthene | 482.818 | -3.4 | 1020745 | 0.766 | 0.793 | 7.851 | 7.821 | 8.22 | | | | |
| 7 | Dibenzofuran | 441.904 | -11.6 | 1194370 | 0.896 | 1.014 | 8.044 | 8.015 | 7.34 | | | | |
| 8 | Fluorene | 436.932 | -12.6 | 942836 | 0.707 | 0.809 | 8.428 | 8.403 | 7.05 | | | | |
| 9 | Phenanthrene | 427.129 | -14.6 | 1180924 | 0.886 | 1.037 | 9.493 | 9.470 | 7.86 | | | | |
| 10 | Anthracene | 440.114 | -12.0 | 1222445 | 0.917 | 1.042 | 9.549 | 9.526 | 6.78 | | | | |
| 11 | Fluoranthene | 434.145 | -13.2 | 1114309 | 0.836 | 0.963 | 10.800 | 10.776 | 8.86 | | | | |
| 12 | Pyrene | 425.750 | -14.9 | 1181887 | 0.887 | 1.041 | 11.051 | 11.027 | 8.26 | | | | |
| 13 | Terphenyl-d14 | 498.345 | -0.3 | 982735 | 0.737 | 0.740 | 11.201 | 11.179 | 9.81 | | | | |
| 14 | Benzo(a)anthracene | 519.124 | 3.8 | 1957052 | 1.468 | 1.587 | 12.354 | 12.330 | 15.30 | 0.0058 | 1.3915 | | 0.9984 |
| 15 | Chrysene | 480.578 | -3.9 | 1760060 | 1.320 | 1.374 | 12.395 | 12.369 | 8.55 | | | | |
| 16 | Benzo(b)fluoranthene | 479.119 | -4.2 | 1731142 | 1.299 | 1.355 | 13.502 | 13.473 | 6.94 | | | | |
| 17 | Benzo(k)fluoranthene | 500.066 | 0.0 | 1804529 | 1.354 | 1.354 | 13.529 | 13.502 | 7.55 | | | | |
| 18 | Benzo(a)pyrene | 484.697 | -3.1 | 1663528 | 1.248 | 1.287 | 13.875 | 13.841 | 7.12 | | | | |
| 19 | Indeno(1,2,3-cd)pyrene | 493.208 | -1.4 | 2060337 | 1.546 | 1.567 | 15.390 | 15.333 | 6.56 | | | | |
| 20 | Dibenzo(a,h)anthracene | 495.927 | -0.8 | 1709806 | 1.283 | 1.293 | 15.407 | 15.350 | 7.44 | | | | |
| 21 | Benzo(g,h,i)perylene | 506.285 | 1.3 | 1752374 | 1.315 | 1.298 | 15.824 | 15.762 | 5.54 | | | | |

Data Path : C:\msdchem\1\DATA\14J28\
Data File : RJF031.D
Acq On : 28 Oct 2014 09:33
Operator : KVu
Sample : DFTF0E0807
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Fri May 09 13:48:37 2014



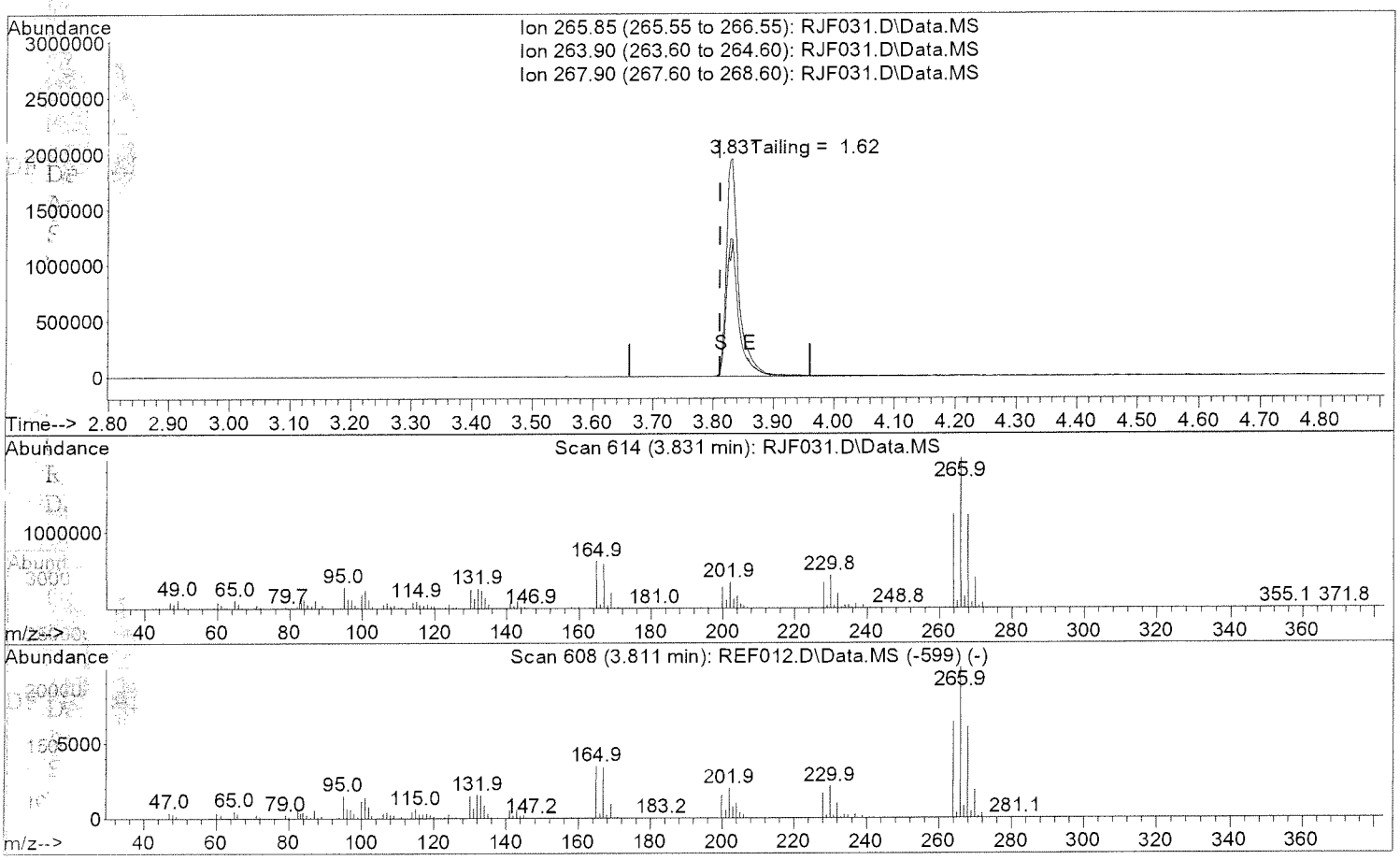

AutoFind: Scans 729, 730, 731; Background Corrected with Scan 720

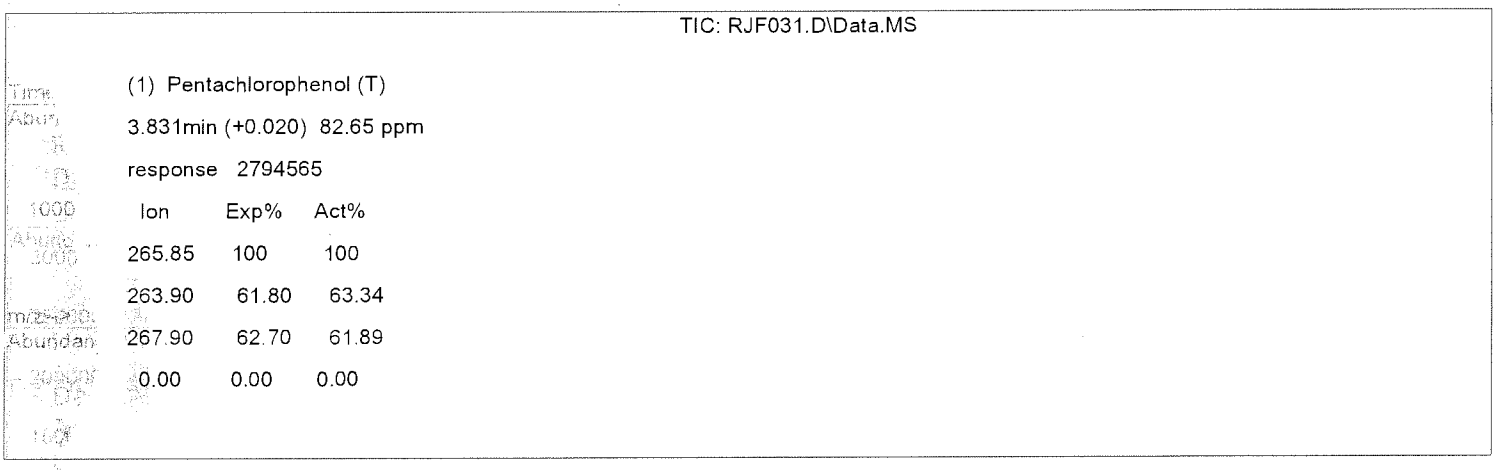
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 30 | 60 | 40.8 | 739293 | PASS |
| 68 | 69 | 0.00 | 2 | 1.1 | 4595 | PASS |
| 69 | 198 | 0.00 | 100 | 22.3 | 404669 | PASS |
| 70 | 69 | 0.00 | 2 | 0.3 | 1081 | PASS |
| 127 | 198 | 40 | 60 | 44.7 | 810475 | PASS |
| 197 | 198 | 0.00 | 1 | 0.4 | 6471 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1811627 | PASS |
| 199 | 198 | 5 | 9 | 6.5 | 118181 | PASS |
| 275 | 198 | 10 | 30 | 28.8 | 521152 | PASS |
| 365 | 198 | 1 | 100 | 2.0 | 36144 | PASS |
| 441 | 443 | 0.01 | 100 | 84.6 | 240512 | PASS |
| 442 | 198 | 40 | 100 | 86.5 | 1566379 | PASS |
| 443 | 442 | 17 | 23 | 18.2 | 284331 | PASS |

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14J28\RJF031.D
Acq On : 28 Oct 2014 09:33
Sample : DFTF0E0807
Misc : F0
Integrator: RTE
Quant Time: Oct 28 09:47:23 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




(1) Pentachlorophenol (T)

3.831min (+0.020) 82.65 ppm

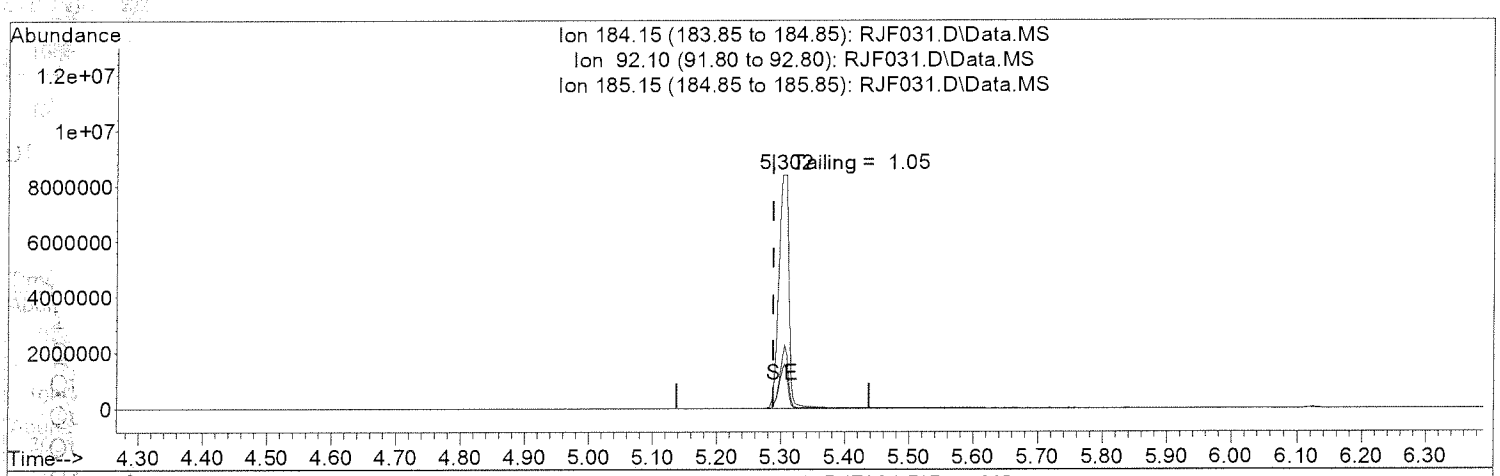
response 2794565

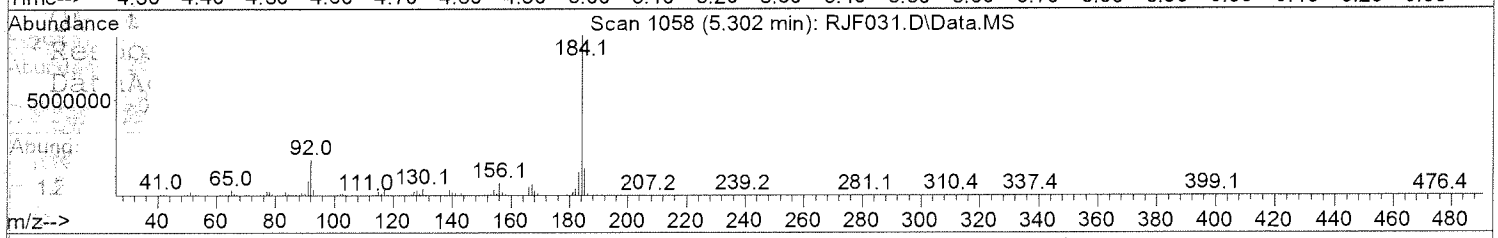
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 63.34 |
| 267.90 | 62.70 | 61.89 |
| 0.00 | 0.00 | 0.00 |

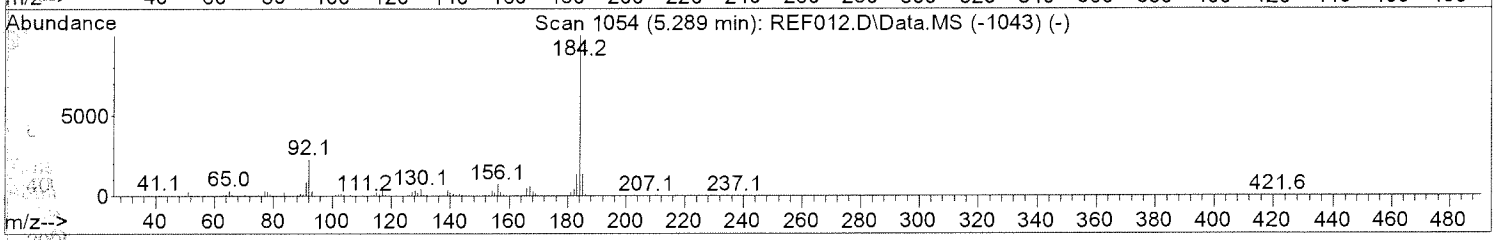
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14J28\RJF031.D
Acq On : 28 Oct 2014 09:33
Sample : DFTF0E0807
Misc : F0
Integrator: RTE
Quant Time: Oct 28 09:47:23 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RJF031.D\Data.MS

(3) Benzidine (T)

5.302min (+0.014) 54.51 ppm

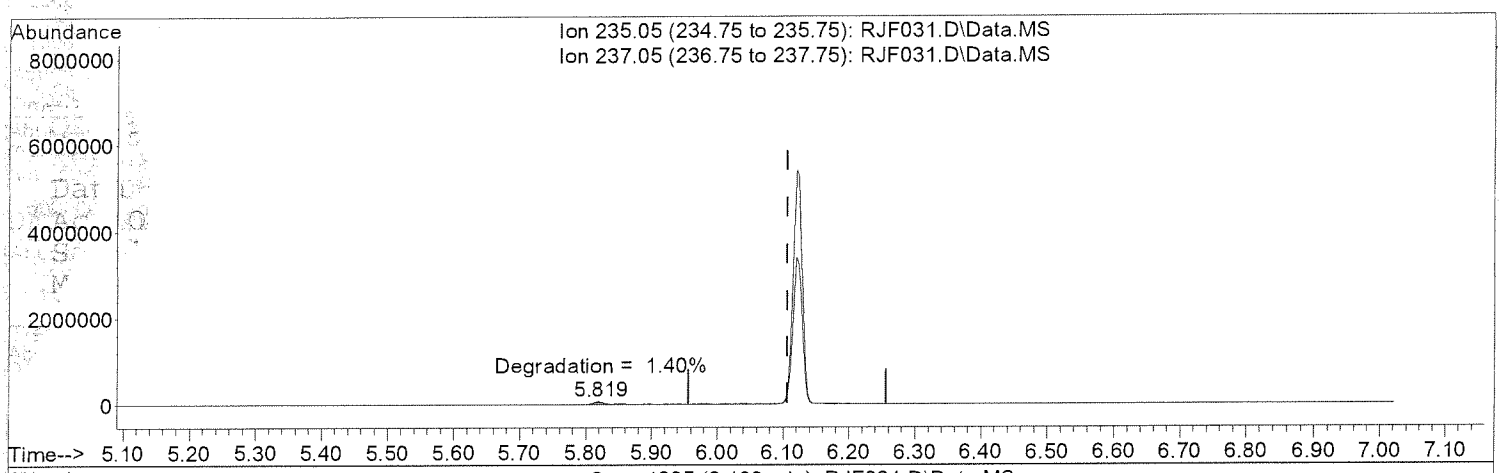
response 9366019

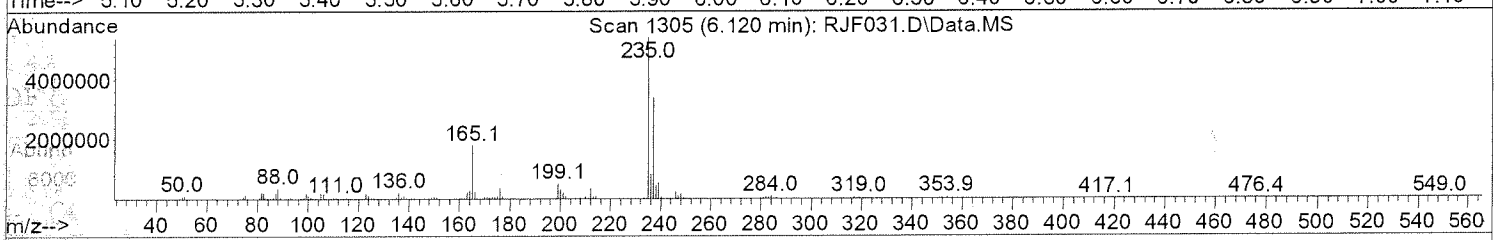
| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.69 |
| 185.15 | 13.30 | 15.56 |
| 0.00 | 0.00 | 0.00 |

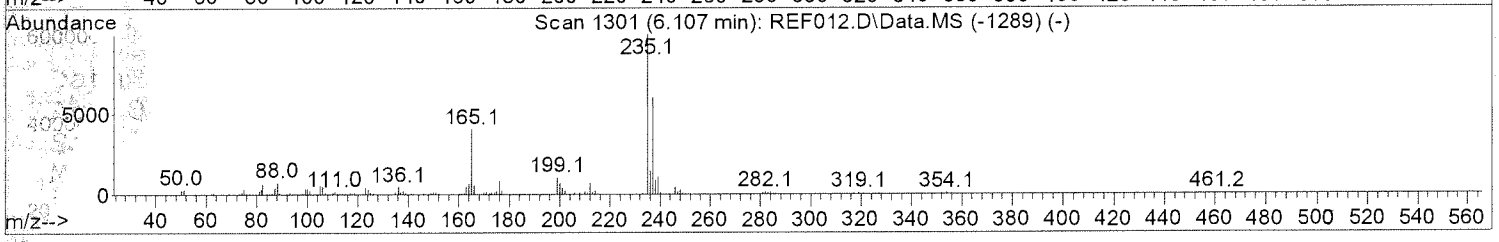
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14J28\RJF031.D
Acq On : 28 Oct 2014 09:33
Sample : DFTF0E0807
Misc : F0
Integrator: RTE
Quant Time: Oct 28 09:47:23 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RJF031.D\Data.MS

(6) DDT (T)

6.120min (+0.014) 64.15 ppm

response 5233404

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.58 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14J28\RJF032.D  Vial: 3
Acq On : 28 Oct 2014 09:48  Operator: KVu
Sample : CSVF0E0807  Inst : DSQ
Misc : F0  Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | Amount | Calc. | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 2000.000 | 2000.000 | 0.0 | 107 | 0.02 |
| 2 | T | Naphthalene | 500.000 | 412.934 | 17.4 | 86 | 0.02 |
| 3 | T | 2-Methylnaphthalene | 500.000 | 511.352 | -2.3 | 107 | 0.03 |
| 4 | T | 1-Methylnaphthalene | 500.000 | 498.046 | 0.4 | 105 | 0.03 |
| 5 | T | Acenaphthylene | 500.000 | 478.943 | 4.2 | 100 | 0.03 |
| 6 | C | Acenaphthene | 500.000 | 482.817 | 3.4 | 104 | 0.03 |
| 7 | T | Dibenzofuran | 500.000 | 441.904 | 11.6 | 94 | 0.03 |
| 8 | T | Fluorene | 500.000 | 436.932 | 12.6 | 94 | 0.02 |
| 9 | T | Phenanthrene | 500.000 | 427.129 | 14.6 | 92 | 0.02 |
| 10 | T | Anthracene | 500.000 | 440.114 | 12.0 | 93 | 0.02 |
| 11 | C | Fluoranthene | 500.000 | 434.145 | 13.2 | 93 | 0.02 |
| 12 | T | Pyrene | 500.000 | 425.749 | 14.9 | 92 | 0.02 |
| 13 | S | Terphenyl-d14 | 500.000 | 498.345 | 0.3 | 107 | 0.02 |
| 14 | T | Benzo(a)anthracene | 500.000 | 519.124 | -3.8 | 103 | 0.02 |
| 15 | T | Chrysene | 500.000 | 480.578 | 3.9 | 101 | 0.02 |
| 16 | T | Benzo(b)fluoranthene | 500.000 | 479.119 | 4.2 | 98 | 0.03 |
| 17 | T | Benzo(k)fluoranthene | 500.000 | 500.066 | -0.0 | 100 | 0.03 |
| 18 | C | Benzo(a)pyrene | 500.000 | 484.697 | 3.1 | 96 | 0.03 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 500.000 | 493.208 | 1.4 | 99 | 0.05 |
| 20 | T | Dibenzo(a,h)anthracene | 500.000 | 495.927 | 0.8 | 101 | 0.05 |
| 21 | T | Benzo(g,h,i)perylene | 500.000 | 506.285 | -1.3 | 101 | 0.06 |

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

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14J28\RJF032.D  Vial: 3
Acq On : 28 Oct 2014 09:48  Operator: KVu
Sample : CSVF0E0807  Inst : DSQ
Misc : F0  Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 107 | 0.02 |
| 2 | T | Naphthalene | 1.369 | 1.130 | 17.5 | 86 | 0.02 |
| 3 | T | 2-Methylnaphthalene | 0.918 | 0.939 | -2.3 | 107 | 0.03 |
| 4 | T | 1-Methylnaphthalene | 0.843 | 0.840 | 0.4 | 105 | 0.03 |
| 5 | T | Acenaphthylene | 1.219 | 1.168 | 4.2 | 100 | 0.03 |
| 6 | C | Acenaphthene | 0.793 | 0.766 | 3.4 | 104 | 0.03 |
| 7 | T | Dibenzofuran | 1.014 | 0.896 | 11.6 | 94 | 0.03 |
| 8 | T | Fluorene | 0.809 | 0.707 | 12.6 | 94 | 0.02 |
| 9 | T | Phenanthrene | 1.037 | 0.886 | 14.6 | 92 | 0.02 |
| 10 | T | Anthracene | 1.042 | 0.917 | 12.0 | 93 | 0.02 |
| 11 | C | Fluoranthene | 0.963 | 0.836 | 13.2 | 93 | 0.02 |
| 12 | T | Pyrene | 1.041 | 0.887 | 14.8 | 92 | 0.02 |
| 13 | S | Terphenyl-d14 | 0.740 | 0.737 | 0.4 | 107 | 0.02 |
| 14 | T | Benzo(a)anthracene | 1.587 | 1.468 | 7.5 | 103 | 0.02 |
| 15 | T | Chrysene | 1.374 | 1.320 | 3.9 | 101 | 0.02 |
| 16 | T | Benzo(b)fluoranthene | 1.355 | 1.299 | 4.1 | 98 | 0.03 |
| 17 | T | Benzo(k)fluoranthene | 1.354 | 1.354 | 0.0 | 100 | 0.03 |
| 18 | C | Benzo(a)pyrene | 1.287 | 1.248 | 3.0 | 96 | 0.03 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 1.567 | 1.546 | 1.3 | 99 | 0.05 |
| 20 | T | Dibenzo(a,h)anthracene | 1.293 | 1.283 | 0.8 | 101 | 0.05 |
| 21 | T | Benzo(g,h,i)perylene | 1.298 | 1.315 | -1.3 | 101 | 0.06 |

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

Quantitation Report (QT Reviewed)

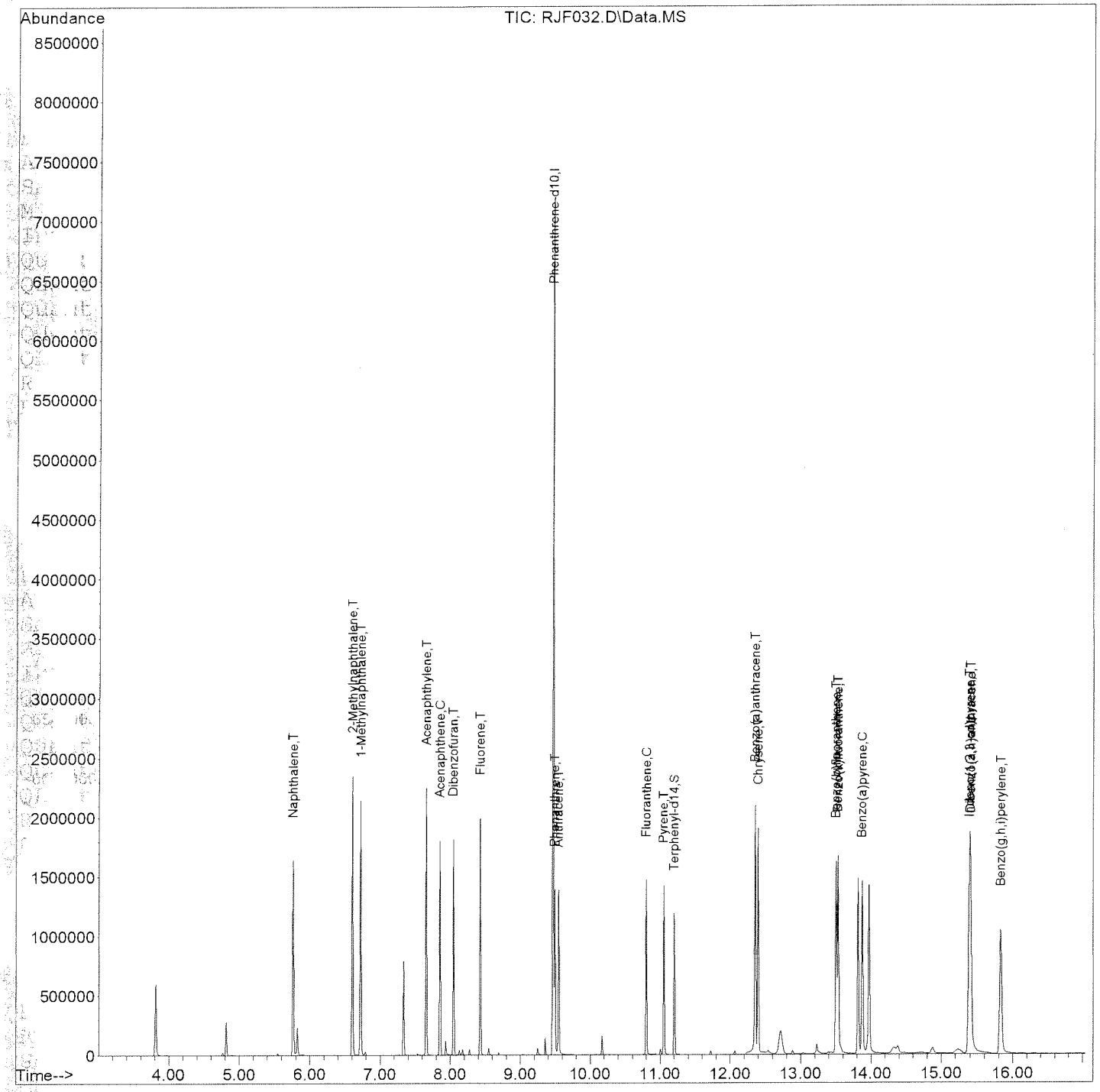
Data File : C:\msdchem\1\DATA\14J28\RJF032.D
Vial: 3
Acq On : 28 Oct 2014 09:48
Operator: KVu
Sample : CSVF0E0807
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.466 | 188 | 5332031 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.201 | 244 | 982735 | 498.35 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery = | 99.67% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.764 | 128 | 1506711 | 412.93 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.604 | 142 | 1251309 | 511.35 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.722 | 142 | 1119237 | 498.05 ppb | 99 |
| 5) Acenaphthylene | 7.655 | 152 | 1556810 | 478.94 ppb | 100 |
| 6) Acenaphthene | 7.851 | 153 | 1020745 | 482.82 ppb | 100 |
| 7) Dibenzofuran | 8.044 | 168 | 1194370 | 441.90 ppb | 98 |
| 8) Fluorene | 8.428 | 166 | 942836 | 436.93 ppb | 99 |
| 9) Phenanthrene | 9.493 | 178 | 1180924 | 427.13 ppb | 100 |
| 10) Anthracene | 9.549 | 178 | 1222445 | 440.11 ppb | 100 |
| 11) Fluoranthene | 10.799 | 202 | 1114309 | 434.14 ppb | 84 |
| 12) Pyrene | 11.051 | 202 | 1181887 | 425.75 ppb | 83 |
| 14) Benzo(a)anthracene | 12.354 | 228 | 1957052 | 519.12 ppb | 85 |
| 15) Chrysene | 12.395 | 228 | 1760060 | 480.58 ppb | 81 |
| 16) Benzo(b)fluoranthene | 13.502 | 252 | 1731142 | 479.12 ppb | 95 |
| 17) Benzo(k)fluoranthene | 13.529 | 252 | 1804529 | 500.07 ppb | 90 |
| 18) Benzo(a)pyrene | 13.874 | 252 | 1663528 | 484.70 ppb | 84 |
| 19) Indeno(1,2,3-cd)pyrene | 15.390 | 276 | 2060337 | 493.21 ppb | 81 |
| 20) Dibenzo(a,h)anthracene | 15.407 | 278 | 1709806 | 495.93 ppb | 86 |
| 21) Benzo(g,h,i)perylene | 15.824 | 276 | 1752374 | 506.28 ppb | 84 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14J28\RJF032.D
Vial: 3
Acq On : 28 Oct 2014 09:48
Operator: KVu
Sample : CSVF0E0807
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Oct 28 10:12:27 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 5 ☑ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #AF0-002

Method File: SVF0 E08 Tune File: LOW SIM Start Date/Time: 5/8/14 11:44 End Date/Time: 5/8/14 15:36

ANALYTICAL BATCH: SVF0 E08 2

| Preparative Batch | Data File Name | Run ID | DF | Matrix S | Matrix W | Notes |
|---|---|---|---|---|---|---|
| NA | REF 011 | IBF0E0801 | 1 | | | |
| | 12 | DFTF0E0801 | | | | |
| | 13 | SVF0 E08 1 | | | | 1000ppb |
| | 14 | 2 | | | | 500 |
| | 15 | 3 | | | | 100 |
| | 16 | 4 | | | | 80 |
| | 17 | 5 | | | | 40 |
| | 18 | 6 | | | | 20 |
| | 19 | ISVF0E081 | | | | ICV |
| SVD013LW | 20 | LOQ -11 | 1 | | X | |
| | 21 | LOD -11 | | | | |
| | 22 | SVD013WB | | | | |
| | 23 | D146 - 01 | 2 | | | Cyfluthrin 8310 |
| | 24 | 02 | 2 | | | |
| | 25 | 03 | 2 | | | |
| | | KV 5/8/14 | | | | |

| Instrument No: | F0 |
|---|---|
| INITIAL CALIBRATION REFERENCE | |
| Date | 5/8/14 |
| ICAL ID | SVF0 E08 |

| Standards | | |
|---|---|---|
| Name | ID | Conc. (mg/L) |
| DFTPP | SS2C-11-15-01 | 50 |
| INT. STD. | SS2B-10-37-03 | 2000 |
| ICV | SS2C-11-18-02 | 0.5 |
| DCC | SS2C-11-18-01 | 0.25-1 |
| BENZIDINE | 01 | |
| APP 9 | KV 5/8/14 | |
| APP 9 ADD | | |

| Solvent | ID |
|---|---|
| $CH_2Cl_2$ | |

| DATA FILE | 14 E08 |
|---|---|

| Electronic Data Archival | |
|---|---|
| Location | Date |
| HPCHEM_SVOA/TOF0 | |

Comments:

Analyzed By: KV

Date Disposed: 5/9/14

Disposed By: KV

This page is checked during data review.

EMAX LABORATORIES, INC.

# ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 5 ☐ EMAX-8270D Rev. No. 1 ☑ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AF0-003

Method File: SVF0 E08 Tune File: Low Sim Start Date/Time: 10/28/14 9:33 End Date/Time: 10/28/14 14:22

ANALYTICAL BATCH: CSVF0E0807

| Preparative Batch | Data File Name | Run ID | DF | Matrix S | Matrix W | Notes |
|---|---|---|---|---|---|---|
| | RJF030 | IBF0E0807 | | | | |
| | 031 | DFTF0E0807 | | | | |
| | 032 | CSVF0E0807 | | | | |
| SVJ034W | 033 | SVJ034WB | 1 | | X | |
| | 034 | WL | | | | |
| | 035 | WC | | | | |
| | 036 | 14J130-01 | | | | |
| | 037 | 02 | | | | |
| | 038 | 14J144-01 | | | | |
| | 039 | 01M | | | | |
| | 040 | 01S | | | | |
| | | | | | | DJ 10/28/14 |

| Instrument No: | F0 |
|---|---|
| INITIAL CALIBRATION REFERENCE | |
| Date | 5/8/14 |
| ICAL ID | SVF0 E08 |
| Standards | |
| Name | ID | Conc. (mg/L) |
| DFTPP | SS2C-11-25-03 | 50 |
| INT. STD. | SS2B-10-47-02 | 2000 |
| ICV | | |
| DCC | SS2C-11-28-01 | 0.5 |
| BENZIDINE | | |
| APP 9 | | |
| APP 9 ADD | | |
| | | |
| | | |
| Solvent | ID | |
| $CH_2Cl_2$ | 54184 | |
| DATA FILE | 14J28 | |
| Electronic Data Archival | | |
| Location | Date | |
| HPCHEM_SVOA/TOF0 | | |

Micropipette ID: ☑ PO97A-~~02~~ 01 KV 10/28/14
☐ PO97A-03
☐ PO00-01

Comments: Naphthalene 15 ppb

Syringe ID: 499766-1
Analyzed By: KV
Date Disposed: 10/29/14
Disposed By: DJ

This page is checked during data review.

30070

# EXTRACTION LOGS

EMAX LABORATORIES, INC.

# EXTRACTION LOG
*for*
# SEMIVOLATILES

| SOP | Rev. # |
|---|---|
| ☑ EMAX-3520 | 5 |
| ☐ EMAX-3540 | 2 |
| ☐ EMAX-3546 | 0 |
| ☐ EMAX-3550 | 4 |
| ☐ EMAX-3580 | 2 |
| ☐ EMAX-625 | 1 |

**Note:** For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

**Comments:**

**Book #:** ESV-082
**Preparation Batch:** SVJ034W
**Matrix:** WATER
**Micropipette ID:** 1000µl: PE00-04
**Micropipette ID:** 100µl: PE97C-03

| Standards | ID | Amount Added (ml) |
|---|---|---|
| Surrogate | SS2A-06-348 | 0.010 |
| LCS/MS (25ppm Sim ultralow) | SS2A-06-347 | 0.25 |
| LCS/MS | | |
| LCS/MS | | |
| LCS/MS | | |

| Reagent | Lot# / ID |
|---|---|
| $CH_2Cl_2$ | 54154 |
| $Na_2SO_4$ | SWIB-002-02-14 |
| $H_2SO_4$ | — |
| NaOH | SPIB-06-77-04 |
| Silica Sand | |
| Silica Gel | |
| Reagent Water | SWIA-005-08-22 |
| Residual Chlorine Strip | 40719 |
| pH Strip | HC421273 |
| Filter Paper | 45873228 |

| Lab Sample ID | Sonicator # | Cell # | Concentrator # |
|---|---|---|---|
| SVJ034WB | | | 1 |
| WL | | | 1 |
| WC | | | 1 |
| J130-01 | 10/23/14 | | 1 |
| -02 | | | 1 |
| J144-01 | | | 1 |
| ~~-01D~~ | | | 1 |
| -01M | | | 1 |
| -01S | | | 1 |

| TUNING | |
|---|---|
| Sonicator # | Reading |
| | |
| | |
| | |
| | |

| Concentrator | Water Bath Temperature Setting (°C) | Thermometer Reading (°C) |
|---|---|---|
| 1 | 35 | 35 |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |

Thermometer ID = SVOC-T1

Prepared By: JM  Witnessed By: MJ
Standard Added By: JM  Checked By: ML
Extract Received By: DJ 10/24/14  Location: VED3-01
Disposed By:  Disposed On:

FileID: SVJ034W

EMAX LABORATORIES, INC.

# EXTRACTION LOG FOR SEMIVOLATILES

| PrepBatchID | LabSampleID | Aliquot | Unit | DateTime | Ve(ml) | ExpAmt | ExpVe(ml) | PrepFctr | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 14SVJ034W01 | SVJ034WB | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | |
| 14SVJ034W02 | SVJ034WL | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | SIM ULTRA LOW |
| 14SVJ034W03 | SVJ034WC | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | SIM ULTRA LOW |
| 14SVJ034W04 | J130-01 | 1040 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 0.96 | |
| 14SVJ034W05 | J130-02 | 1000 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1 | |
| 14SVJ034W06 | J144-01 | 940 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1.06 | |
| 14SVJ034W07 | J144-01M | 900 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 1.11 | SIM ULTRA LOW |
| 14SVJ034W08 | J144-01S | 1020 | ml | 10/23/14 10:00 | 1 | 1000 | 1 | 0.98 | SIM ULTRA LOW |

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 10/23/14 10:00 ☐ pHAdj(≤2) @

Prepared By: JMuert

☑ Extraction Ended @ 10/24/14 5:00 ☑ pHAdj(≥11) @ 10/23/14 15:00

Checked By: ML

Date 10/24/14

Comments:

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 14J144

CASE NARRATIVE

Client : BATTELLE

Project : RED HILL PHASE 1B

SDG : 14J144

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of two (2) water samples were received on 10/22/14 for TPH Gasoline analysis, Method SW5030B/8015B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 and project SAP August 2014.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for VG39J13L/C were all within QC limits.

Matrix QC Sample
A set of MS/MSD was analyzed with the samples in this SDG.
Percent recoveries for J144-01M/S were within project QC limits.

Surrogate
Surrogate was added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : BATTELLE
Project : RED HILL PHASE 1B
SDG NO. : 14J144
Instrument ID : GCT039

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | WATER Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | VG39J13B | 1 | NA | 10/22/1420:07 | 10/22/1420:07 | EJ22007A | EJ22003A | VG39J13 | Method Blank |
| LCS1W | VG39J13L | 1 | NA | 10/22/1418:10 | 10/22/1418:10 | EJ22004A | EJ22003A | VG39J13 | Lab Control Sample (LCS) |
| LCD1W | VG39J13C | 1 | NA | 10/22/1418:49 | 10/22/1418:49 | EJ22005A | EJ22003A | VG39J13 | LCS Duplicate |
| RHMW06-GW-01 | J144-01 | 1 | NA | 10/22/1422:43 | 10/22/1422:43 | EJ22011A | EJ22003A | VG39J13 | Field Sample |
| TB102114 | J144-02 | 1 | NA | 10/22/1422:04 | 10/22/1422:04 | EJ22010A | EJ22003A | VG39J13 | Field Sample |
| RHMW06-GW-01MS | J144-01M | 1 | NA | 10/22/1423:22 | 10/22/1423:22 | EJ22012A | EJ22003A | VG39J13 | Matrix Spike Sample (MS) |
| RHMW06-GW-01MSD | J144-01S | 1 | NA | 10/23/1400:01 | 10/23/1400:01 | EJ22013A | EJ22003A | VG39J13 | MS Duplicate (MSD) |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/21/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/22/14 |
| Batch No. | : 14J144 | Date Extracted: | 10/22/14 22:43 |
| Sample ID: | RHMW06-GW-01 | Date Analyzed: | 10/22/14 22:43 |
| Lab Samp ID: | J144-01 | Dilution Factor: | 1 |
| Lab File ID: | EJ22011A | Matrix : | WATER |
| Ext Btch ID: | VG39J13 | % Moisture : | NA |
| Calib. Ref.: | EJ22003A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0309 | 0.04000 | 77.2 | 70-130 |

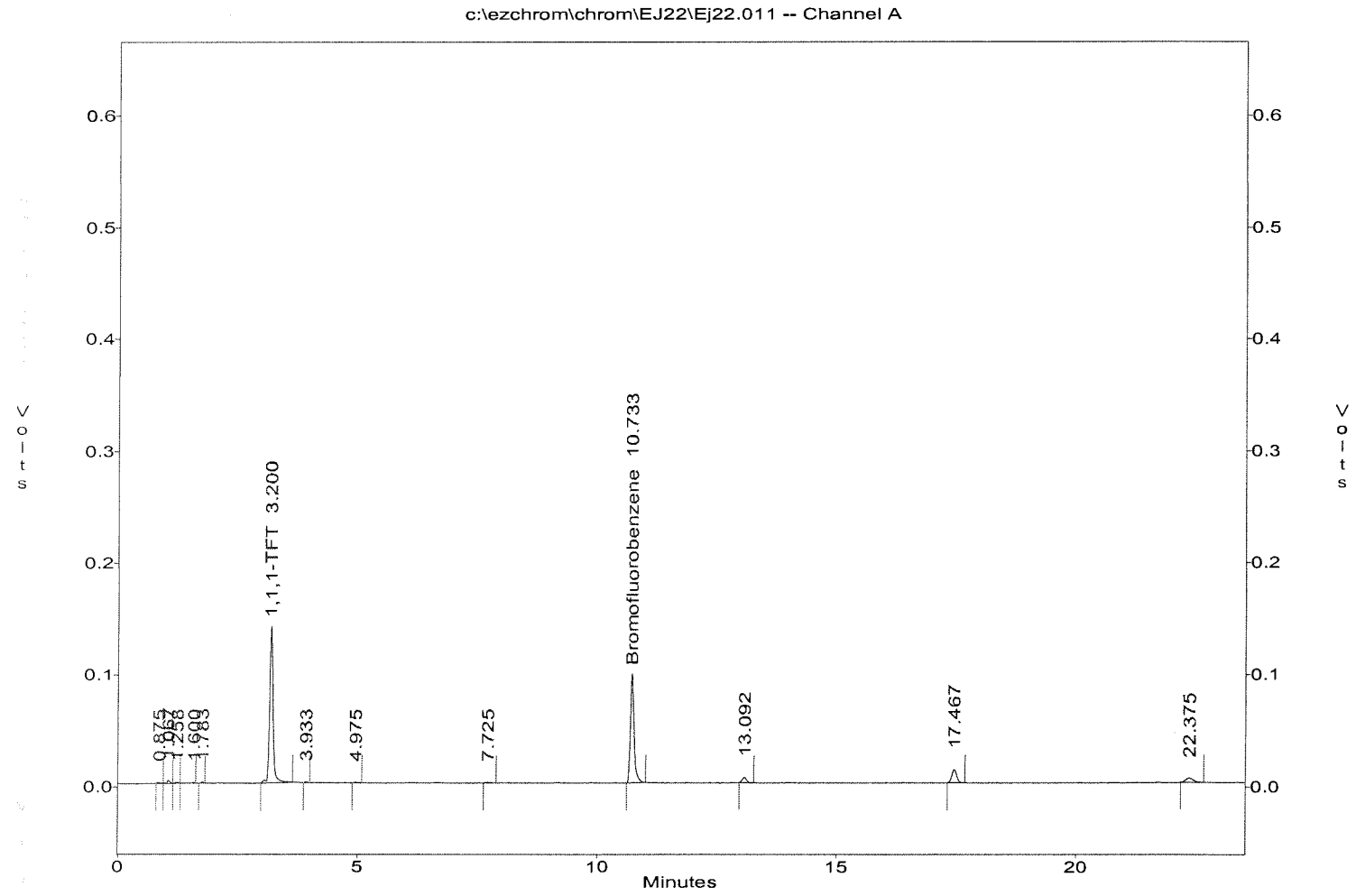
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.011
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14J144-01 5.0ML W
Acquired : Oct 22, 2014 22:43:17
Printed : Oct 22, 2014 23:06:49
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.200 | 706392.0 | 21400.0 | 33.01 |
| 10 | Bromofluorobenzene | 10.733 | 516719.0 | 16725.9 | 30.89 |
| G1 | GASOLINE(TOTAL) | | 184582.0 | 28261.9 | 6.53 |
| G2 | GRO(C6-C10) | | 12778.0 | 21355.4 | 0.60 |
| G3 | GRO(2MP-124TMB) | | 16487.0 | 21297.0 | 0.77 |
| G4 | GRO(C5-C12) | | 133325.0 | 27928.9 | 4.77 |
| G5 | GRO(C6-C12) | | 125362.0 | 27890.2 | 4.49 |
| G6 | GRO(C5-C10) | | 20741.0 | 21396.8 | 0.97 |



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/21/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/22/14 |
| Batch No. | : 14J144 | Date Extracted: | 10/22/14 22:04 |
| Sample ID: | TB102114 | Date Analyzed: | 10/22/14 22:04 |
| Lab Samp ID: | J144-02 | Dilution Factor: | 1 |
| Lab File ID: | EJ22010A | Matrix : | WATER |
| Ext Btch ID: | VG39J13 | % Moisture : | NA |
| Calib. Ref.: | EJ22003A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0307 | 0.04000 | 76.9 | 70-130 |

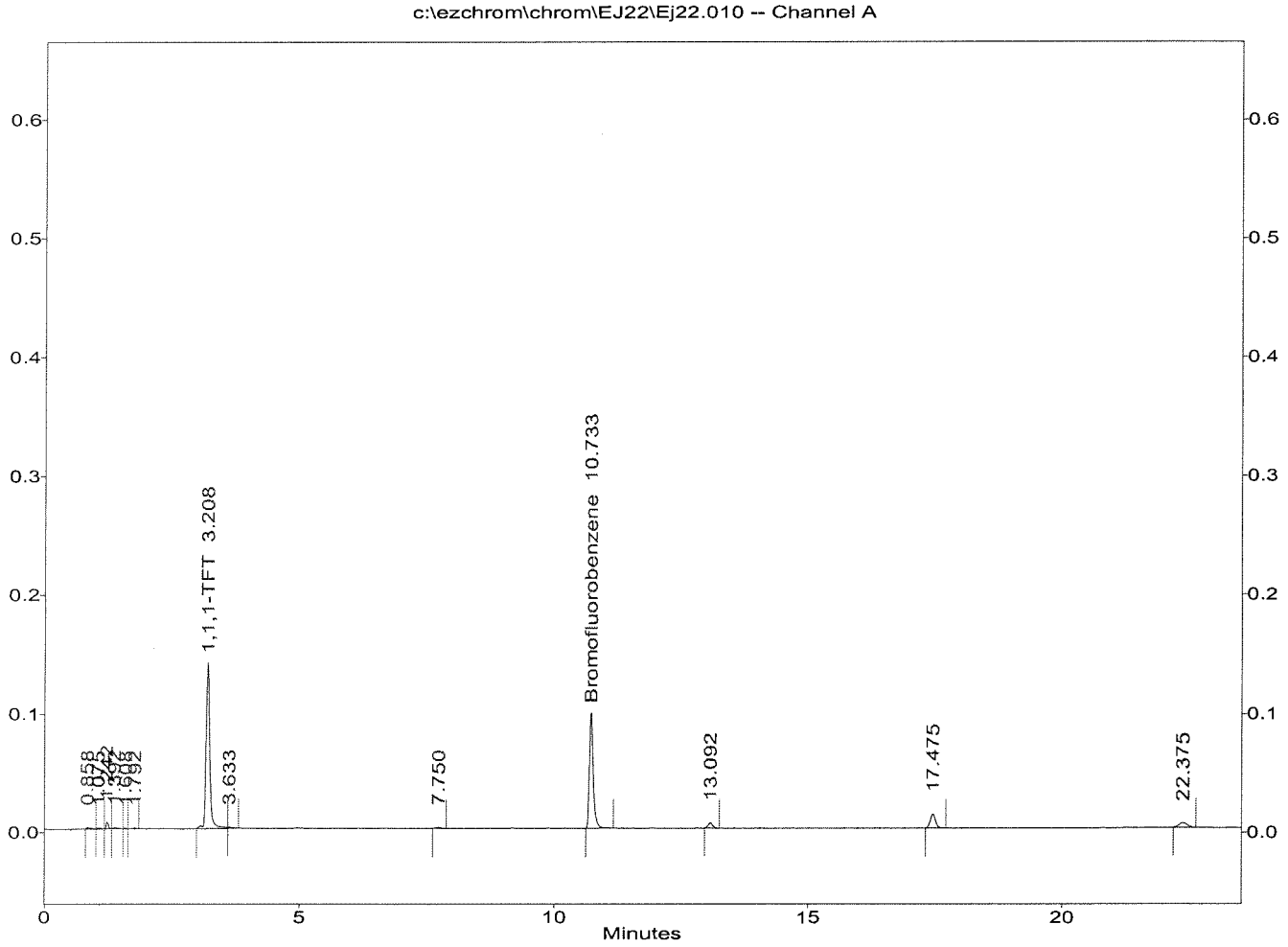
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.010
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14J144-02 5.0ML W
Acquired : Oct 22, 2014 22:04:23
Printed : Oct 22, 2014 22:27:56
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.208 | 710071.0 | 21400.0 | 33.18 |
| 10 | Bromofluorobenzene | 10.733 | 514173.0 | 16725.9 | 30.74 |
| G1 | GASOLINE(TOTAL) | | 195828.0 | 28261.9 | 6.93 |
| G2 | GRO(C6-C10) | | 13891.0 | 21355.4 | 0.65 |
| G3 | GRO(2MP-124TMB) | | 15657.0 | 21297.0 | 0.74 |
| G4 | GRO(C5-C12) | | 151037.0 | 27928.9 | 5.41 |
| G5 | GRO(C6-C12) | | 124829.0 | 27890.2 | 4.48 |
| G6 | GRO(C5-C10) | | 40099.0 | 21396.8 | 1.87 |



# QC SUMMARIES

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 10/22/14 |
| Batch No. | : 14J144 | Date Extracted: | 10/22/14 20:07 |
| Sample ID: | MBLK1W | Date Analyzed: | 10/22/14 20:07 |
| Lab Samp ID: | VG39J13B | Dilution Factor: | 1 |
| Lab File ID: | EJ22007A | Matrix : | WATER |
| Ext Btch ID: | VG39J13 | % Moisture : | NA |
| Calib. Ref.: | EJ22003A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0320 | 0.04000 | 79.9 | 70-130 |

| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J144
METHOD: SW5030B/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | VG39J13B | VG39J13L | VG39J13C | | |
| LAB FILE ID: | EJ22007A | EJ22004A | EJ22005A | | |
| DATE EXTRACTED: | 10/22/1420:07 | 10/22/1418:10 | 10/22/1418:49 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 10/22/1420:07 | 10/22/1418:10 | 10/22/1418:49 | DATE RECEIVED: | 10/22/14 |
| PREP. BATCH: | VG39J13 | VG39J13 | VG39J13 | | |
| CALIB. REF: | EJ22003A | EJ22003A | EJ22003A | | |

ACCESSION:

| PARAMETER | BLNK RSLT (mg/L) | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO | ND | 0.500 | 0.407 | 81 | 0.500 | 0.420 | 84 | 3 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 0.0400 | 0.0358 | 89 | 0.0400 | 0.0383 | 96 | 70-130 |

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J144
METHOD: SW5030B/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | RHMW06-GW-01 | | | | |
| LAB SAMP ID: | J144-01 | J144-01M | J144-01S | | |
| LAB FILE ID: | EJ22011A | EJ22012A | EJ22013A | | |
| DATE EXTRACTED: | 10/22/1422:43 | 10/22/1423:22 | 10/23/1400:01 | DATE COLLECTED: | 10/21/14 |
| DATE ANALYZED: | 10/22/1422:43 | 10/22/1423:22 | 10/23/1400:01 | DATE RECEIVED: | 10/22/14 |
| PREP. BATCH: | VG39J13 | VG39J13 | VG39J13 | | |
| CALIB. REF: | EJ22003A | EJ22003A | EJ22003A | | |

ACCESSION:

| PARAMETER | SMPL RSLT (mg/L) | SPIKE AMT (mg/L) | MS RSLT (mg/L) | MS % REC | SPIKE AMT (mg/L) | MSD RSLT (mg/L) | MSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO | ND | 0.500 | 0.396 | 79 | 0.500 | 0.403 | 81 | 2 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | MS RSLT (mg/L) | MS % REC | SPIKE AMT (mg/L) | MSD RSLT (mg/L) | MSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 0.0400 | 0.0359 | 90 | 0.0400 | 0.0360 | 90 | 70-130 |

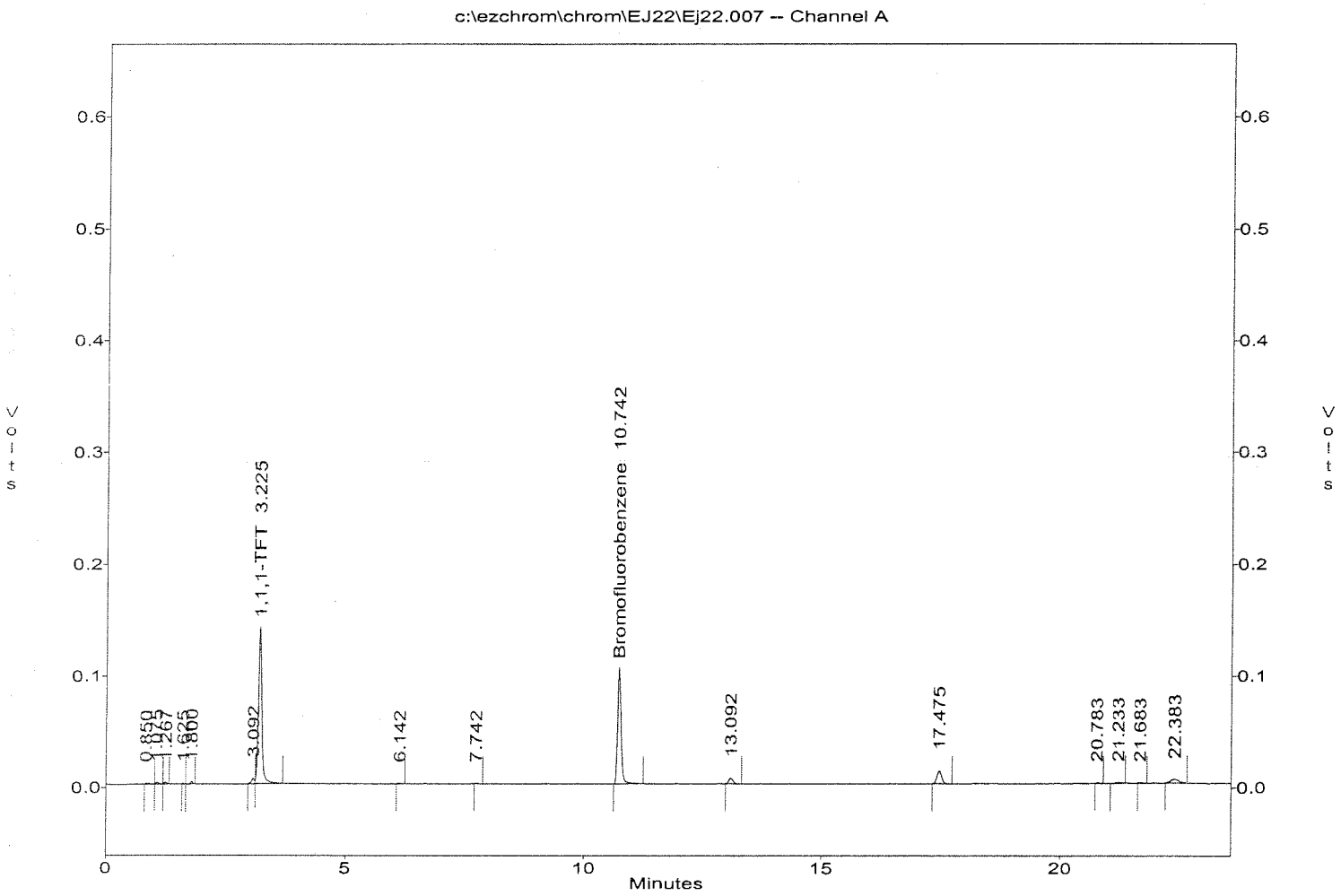
# QC DATA

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.007
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : VG39J13B 5.0ML W
Acquired : Oct 22, 2014 20:07:27
Printed : Oct 22, 2014 20:31:00
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.225 | 717036.0 | 21400.0 | 33.51 |
| 10 | Bromofluorobenzene | 10.742 | 534533.0 | 16725.9 | 31.96 |
| G1 | GASOLINE(TOTAL) | | 207731.0 | 28261.9 | 7.35 |
| G2 | GRO(C6-C10) | | 33285.0 | 21355.4 | 1.56 |
| G3 | GRO(2MP-124TMB) | | 33285.0 | 21297.0 | 1.56 |
| G4 | GRO(C5-C12) | | 153804.0 | 27928.9 | 5.51 |
| G5 | GRO(C6-C12) | | 147049.0 | 27890.2 | 5.27 |
| G6 | GRO(C5-C10) | | 40040.0 | 21396.8 | 1.87 |



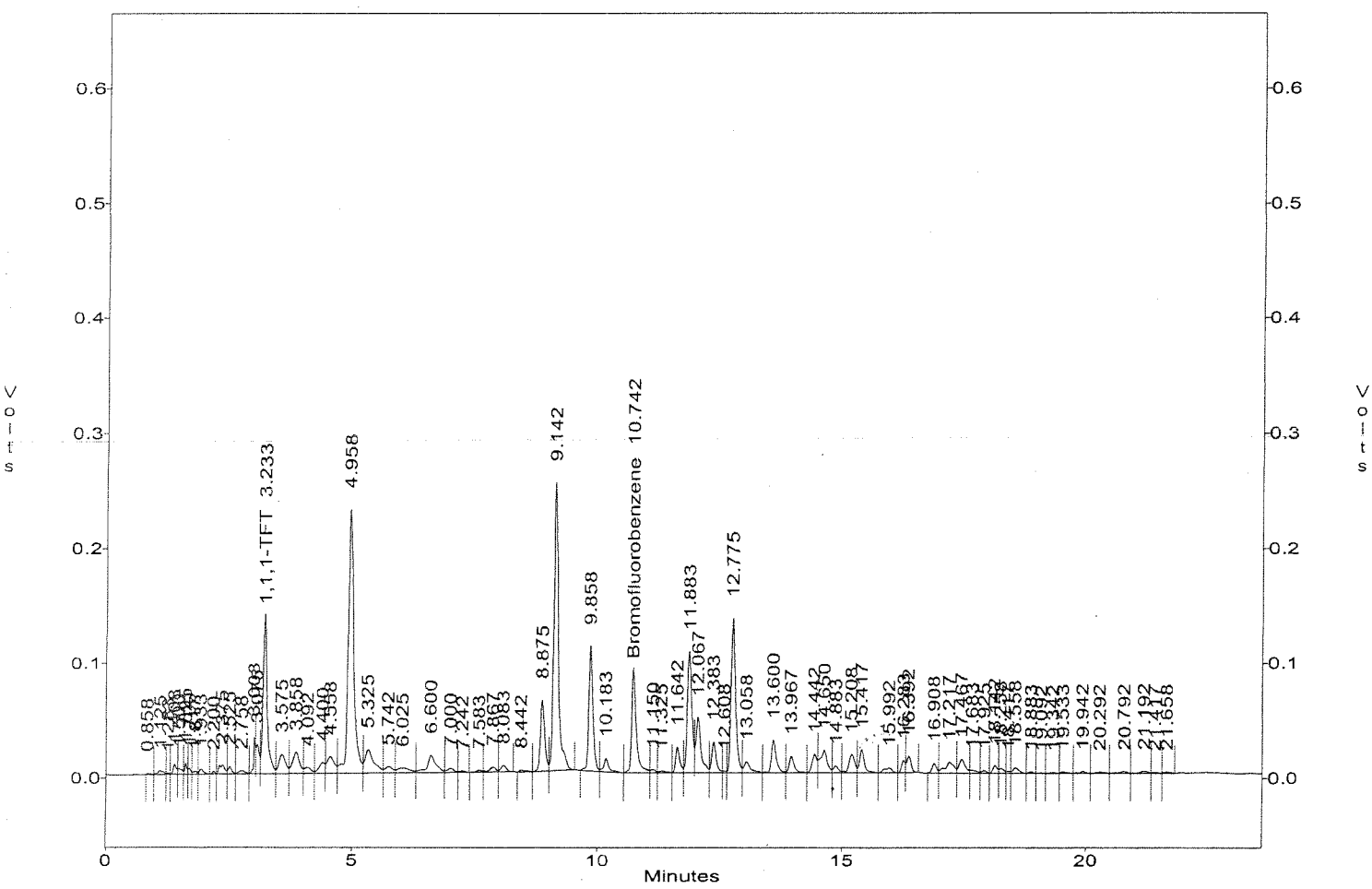
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.004
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : VG39J13L 5.0ML W
Acquired : Oct 22, 2014 18:10:23
Printed : Oct 22, 2014 18:33:55
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 16 | 1,1,1-TFT | 3.233 | 808778.0 | 21400.0 | 37.79 |
| 37 | Bromofluorobenzene | 10.742 | 598164.0 | 16725.9 | 35.76 |
| G1 | GASOLINE(TOTAL) | | 10545995.0 | 28261.9 | 373.15 |
| G2 | GRO(C6-C10) | | 8692438.0 | 21355.4 | 407.04 |
| G3 | GRO(2MP-124TMB) | | 8758383.0 | 21297.0 | 411.25 |
| G4 | GRO(C5-C12) | | 10449204.0 | 27928.9 | 374.14 |
| G5 | GRO(C6-C12) | | 10351497.0 | 27890.2 | 371.15 |
| G6 | GRO(C5-C10) | | 8790145.0 | 21396.8 | 410.82 |

c:\ezchrom\chrom\EJ22\Ej22.004 -- Channel A

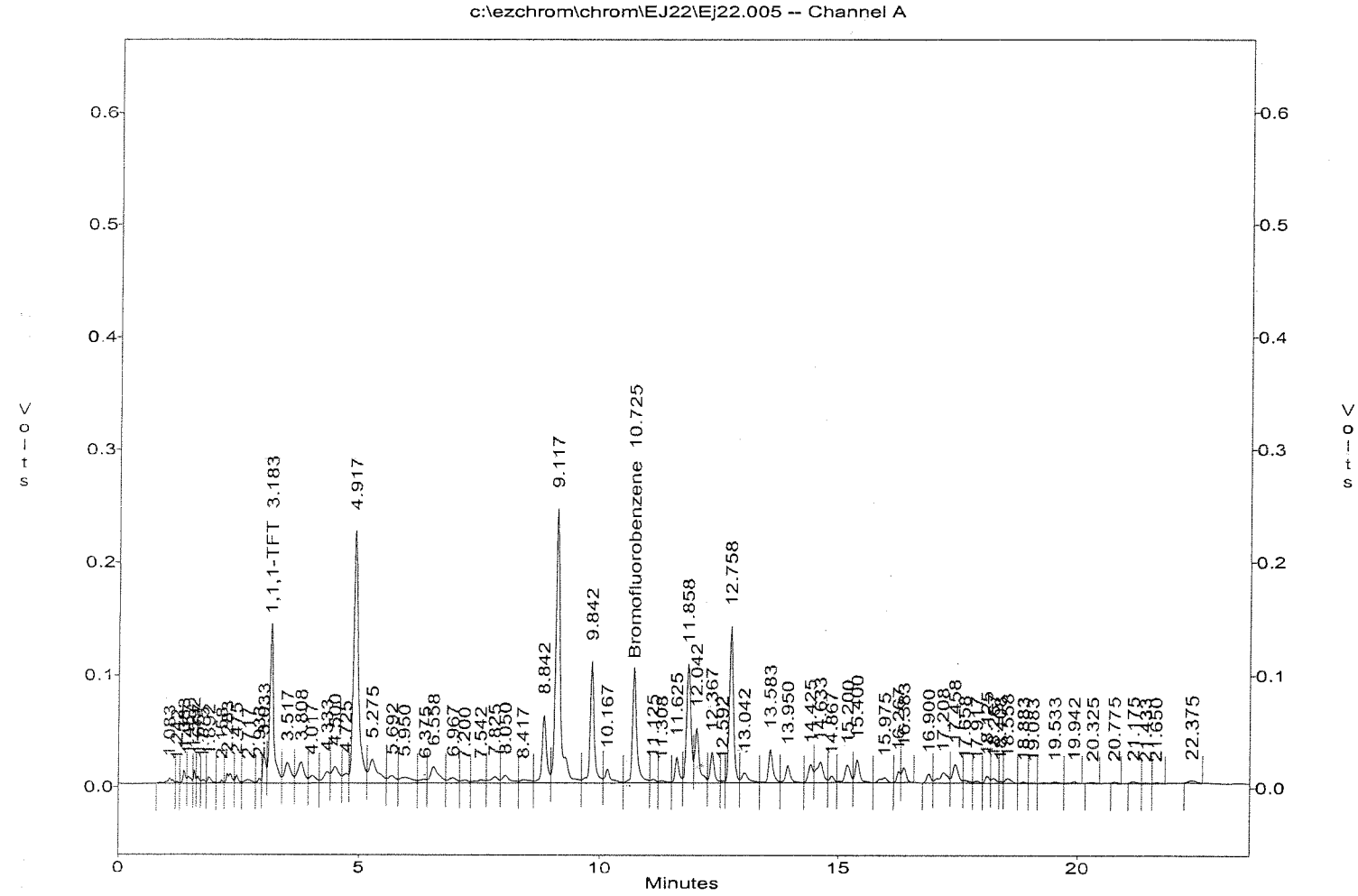


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.005
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : VG39J13C 5.0ML W
Acquired : Oct 22, 2014 18:49:27
Printed : Oct 22, 2014 19:13:00
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 15 | 1,1,1-TFT | 3.183 | 805462.0 | 21400.0 | 37.64 |
| 38 | Bromofluorobenzene | 10.725 | 640482.0 | 16725.9 | 38.29 |
| G1 | GASOLINE(TOTAL) | | 10773542.0 | 28261.9 | 381.20 |
| G2 | GRO(C6-C10) | | 8968812.0 | 21355.4 | 419.98 |
| G3 | GRO(2MP-124TMB) | | 8938144.0 | 21297.0 | 419.69 |
| G4 | GRO(C5-C12) | | 10630718.0 | 27928.9 | 380.64 |
| G5 | GRO(C6-C12) | | 10521932.0 | 27890.2 | 377.26 |
| G6 | GRO(C5-C10) | | 9077598.0 | 21396.8 | 424.25 |



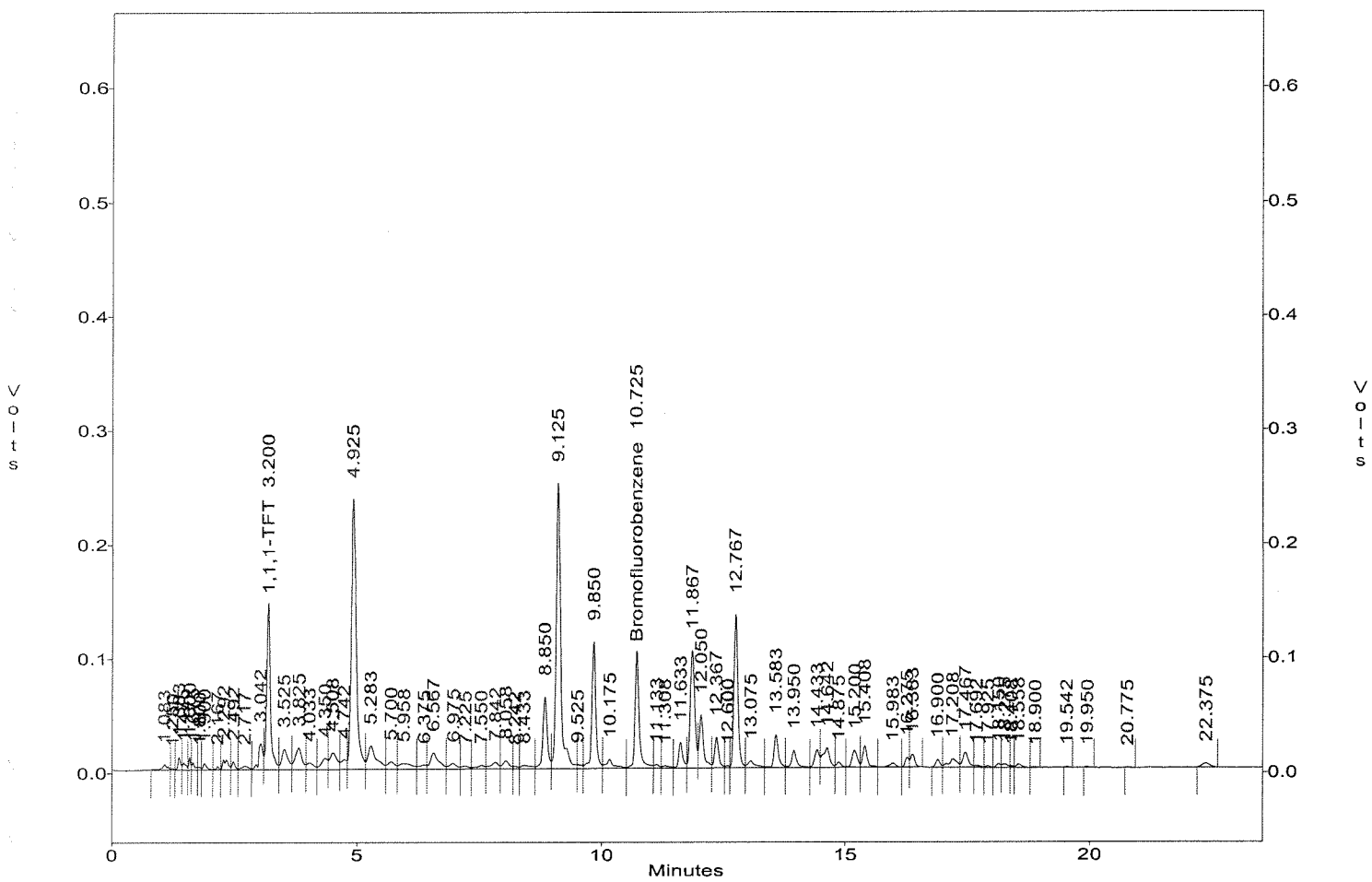
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.012
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14J144-01M 5.0ML W
Acquired : Oct 22, 2014 23:22:25
Printed : Oct 22, 2014 23:45:57
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 14 | 1,1,1-TFT | 3.200 | 777770.0 | 21400.0 | 36.34 |
| 39 | Bromofluorobenzene | 10.725 | 601202.0 | 16725.9 | 35.94 |
| G1 | GASOLINE(TOTAL) | | 10003344.0 | 28261.9 | 353.95 |
| G2 | GRO(C6-C10) | | 8454938.0 | 21355.4 | 395.91 |
| G3 | GRO(2MP-124TMB) | | 8513027.0 | 21297.0 | 399.73 |
| G4 | GRO(C5-C12) | | 9915987.0 | 27928.9 | 355.04 |
| G5 | GRO(C6-C12) | | 9810818.0 | 27890.2 | 351.77 |
| G6 | GRO(C5-C10) | | 8560107.0 | 21396.8 | 400.06 |

c:\ezchrom\chrom\EJ22\Ej22.012 -- Channel A



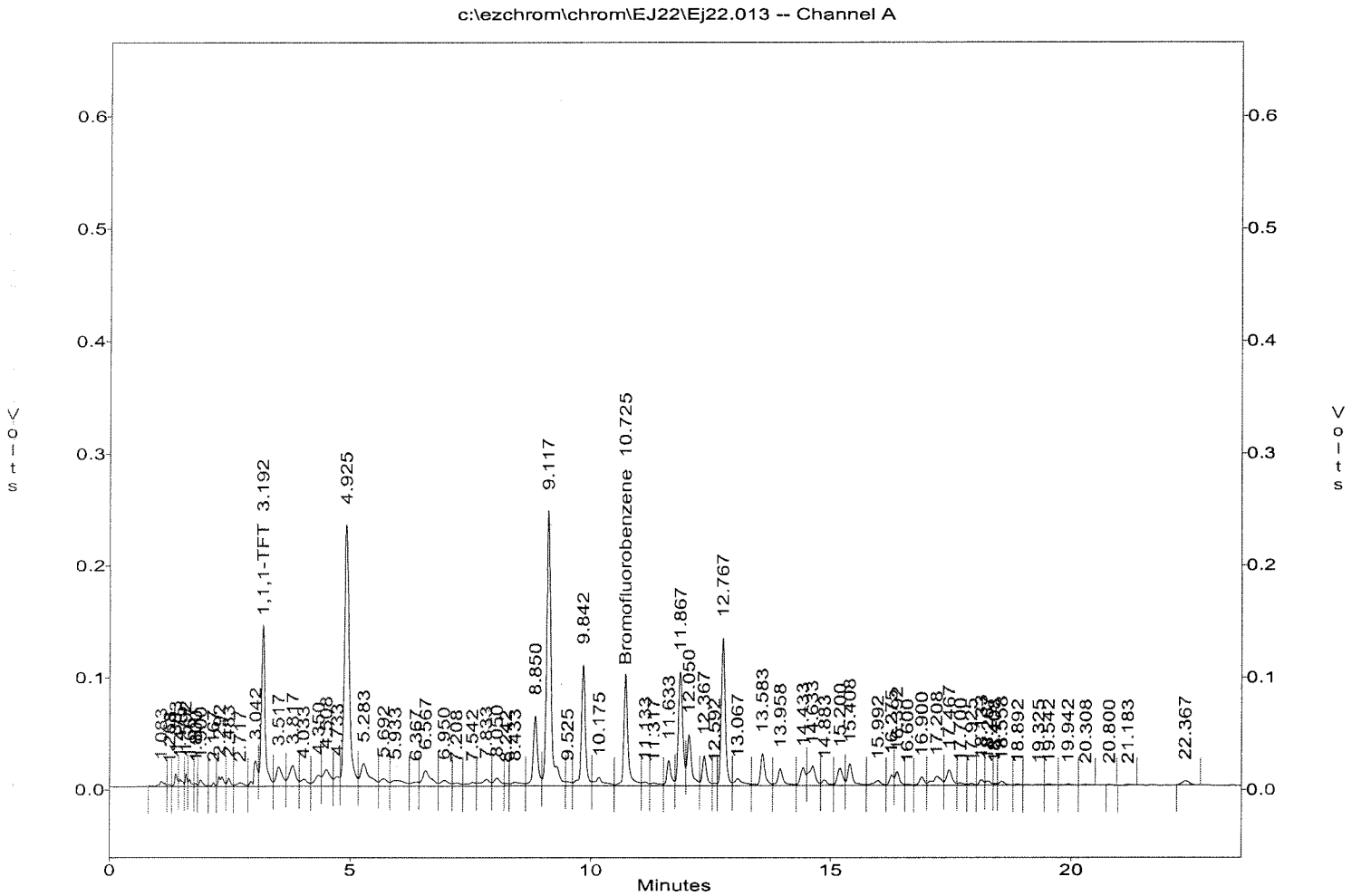

4015

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.013
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14J144-01S 5.0ML W
Acquired : Oct 23, 2014 00:01:35
Printed : Oct 23, 2014 00:25:07
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 14 | 1,1,1-TFT | 3.192 | 771099.0 | 21400.0 | 36.03 |
| 39 | Bromofluorobenzene | 10.725 | 601753.0 | 16725.9 | 35.98 |
| G1 | GASOLINE(TOTAL) | | 10438165.0 | 28261.9 | 369.34 |
| G2 | GRO(C6-C10) | | 8605738.0 | 21355.4 | 402.98 |
| G3 | GRO(2MP-124TMB) | | 8667136.0 | 21297.0 | 406.97 |
| G4 | GRO(C5-C12) | | 10308761.0 | 27928.9 | 369.11 |
| G5 | GRO(C6-C12) | | 10197948.0 | 27890.2 | 365.65 |
| G6 | GRO(C5-C10) | | 8716551.0 | 21396.8 | 407.38 |




4017

# INITIAL CALIBRATIONS

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EE02002A 05/02/14 11:39
LFID & Datetime: EE02003A 05/02/14 12:18
LFID & Datetime: EE02004A 05/02/14 12:57
LFID & Datetime: EE02005A 05/02/14 13:36
LFID & Datetime: EE02006A 05/02/14 14:15
LFID & Datetime: EE02007A 05/02/14 14:54
CONC UNIT: ppb

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 1.00X | 2.50X | 5.00X | 25.00X | 50.00X | 75.00X | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | 20.00 | 27801 | 27719 | 28723 | 28893 | 27835 | 28600 | 28261.9 | 1.9 |
| GRO(C6-C10) | 20.00 | 21440 | 21614 | 22072 | 21470 | 20441 | 21095 | 21355.4 | 2.6 |
| GRO(2MP-124TMB) | 20.00 | 21440 | 21614 | 21962 | 21379 | 20360 | 21028 | 21297.0 | 2.6 |
| GRO(C5-C12) | 20.00 | 27412 | 27451 | 28534 | 28563 | 27415 | 28199 | 27928.9 | 2.0 |
| GRO(C6-C12) | 20.00 | 27293 | 27392 | 28506 | 28556 | 27411 | 28184 | 27890.2 | 2.1 |
| GRO(C5-C10) | 20.00 | 21558 | 21673 | 22100 | 21481 | 20451 | 21117 | 21396.8 | 2.6 |
| **SURROGATE** | **X** | **1.00X** | **2.00X** | **3.00X** | **4.00X** | **5.00X** | **8.00X** | **MEAN** | **%RSD** |
| Bromofluorobenzene | 10.00 | 14346 | 14383 | 15057 | 18957 | 18920 | 18692 | 16725.9 | 14.0 |
| 1,1,1-Trifluorotoluene | 10.00 | 21580 | 20507 | 21018 | 21584 | 21776 | 21933 | 21400.0 | 2.5 |

VG39E02.MET

AA 05/05/14

FORM VI 8015P -2 1/96

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EE02002A 05/02/14 11:39
LFID & Datetime: EE02003A 05/02/14 12:18
LFID & Datetime: EE02004A 05/02/14 12:57
LFID & Datetime: EE02005A 05/02/14 13:36
LFID & Datetime: EE02006A 05/02/14 14:15
LFID & Datetime: EE02007A 05/02/14 14:54

| COMPOUND | RT OF STANDARDS (MIN) 1.0X | 2.5X | 5.0X | 25.0X | 50.0X | 75.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C6-C10) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(2MP-124TMB) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C5-C12) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C6-C12) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C5-C10) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **SURROGATE** | **1.0X** | **2.0X** | **3.0X** | **4.0X** | **5.0X** | **8.0X** | **RT** | **FROM** | **TO** | **WIDTH** |
| Bromofluorobenzene | 10.733 | 10.725 | 10.725 | 10.725 | 10.725 | 10.717 | 10.725 | 10.682 | 10.768 | 0.043 |
| 1,1,1-Trifluorotoluene | 3.217 | 3.217 | 3.217 | 3.208 | 3.208 | 3.208 | 3.212 | 3.088 | 3.336 | 0.124 |

VG39E02.MET

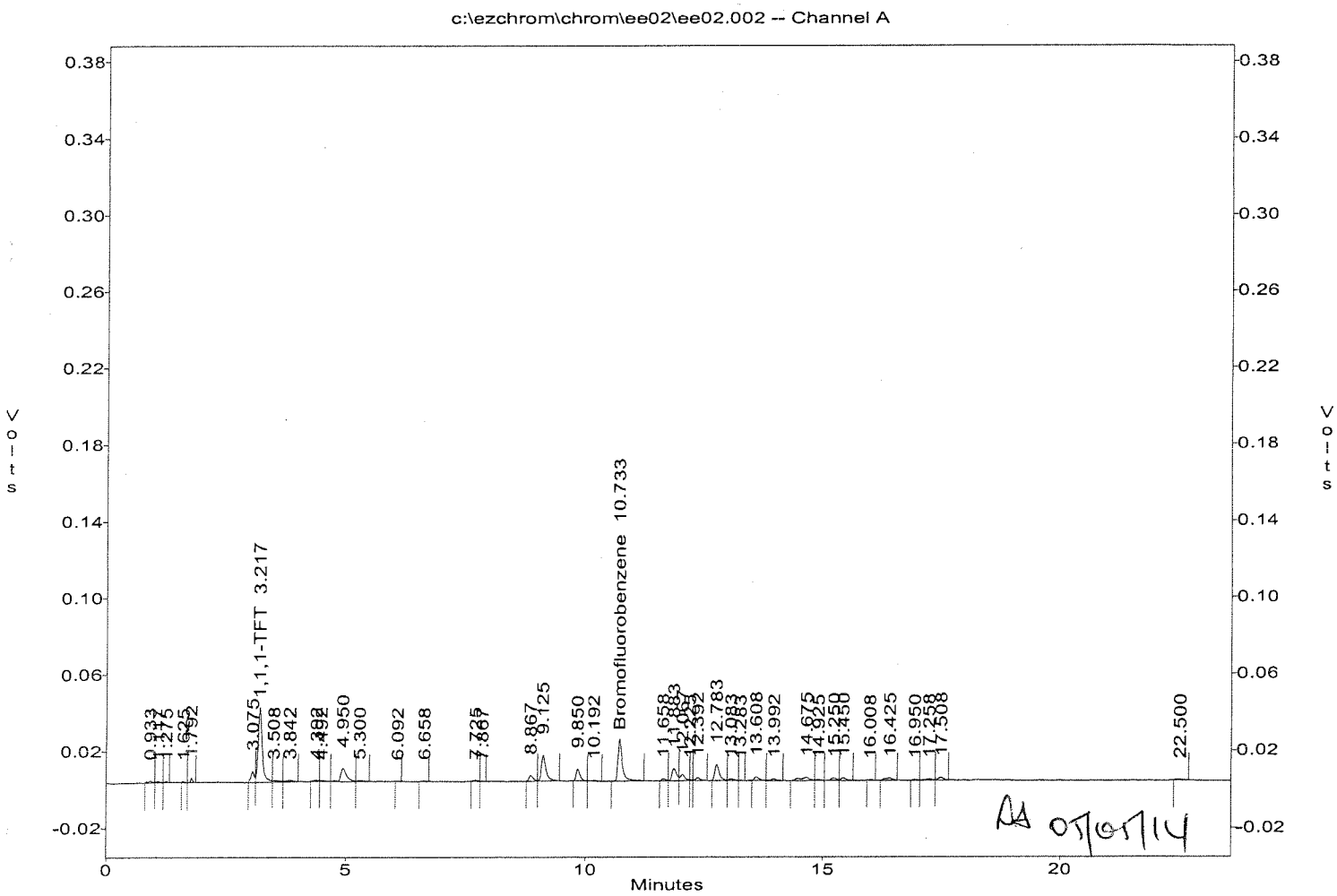
AA
05/05/12

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.002
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0201 20/10
Acquired : May 02, 2014 11:39:55
Printed : May 05, 2014 09:31:15
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.217 | 215802.0 ✓ | 21400.0 | 10.00 |
| 22 | Bromofluorobenzene | 10.733 | 143459.0 ✓ | 16725.9 | 10.00 |
| G1 | GASOLINE(TOTAL) | | 556018.0 ✓ | 28261.9 | 20.00 |
| G2 | GRO(C6-C10) | | 428798.0 ✓ | 21355.4 | 20.00 |
| G3 | GRO(2MP-124TMB) | | 428798.0 ✓ | 21297.0 | 20.00 |
| G4 | GRO(C5-C12) | | 548233.0 ✓ | 27928.9 | 20.00 |
| G5 | GRO(C6-C12) | | 545864.0 ✓ | 27890.2 | 20.00 |
| G6 | GRO(C5-C10) | | 431167.0 ✓ | 21396.8 | 20.00 |

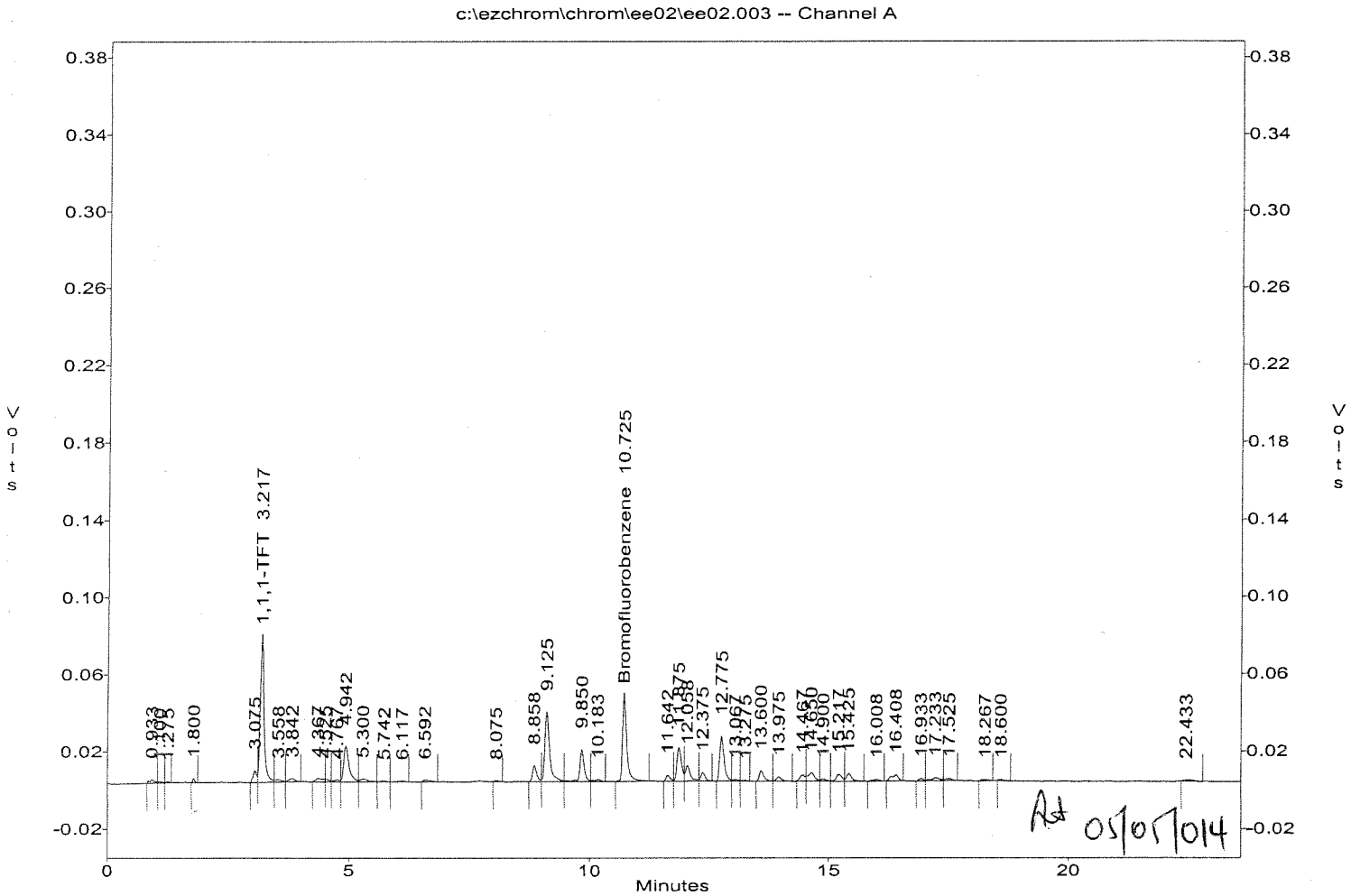


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.003
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0202 50/20
Acquired : May 02, 2014 12:18:52
Printed : May 05, 2014 09:31:23
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.217 | 410145.0 | 21400.0 | 20.00 |
| 22 | Bromofluorobenzene | 10.725 | 287659.0 | 16725.9 | 20.00 |
| G1 | GASOLINE(TOTAL) | | 1385955.0 | 28261.9 | 50.00 |
| G2 | GRO(C6-C10) | | 1080683.0 | 21355.4 | 50.00 |
| G3 | GRO(2MP-124TMB) | | 1080683.0 | 21297.0 | 50.00 |
| G4 | GRO(C5-C12) | | 1372563.0 | 27928.9 | 50.00 |
| G5 | GRO(C6-C12) | | 1369606.0 | 27890.2 | 50.00 |
| G6 | GRO(C5-C10) | | 1083640.0 | 21396.8 | 50.00 |

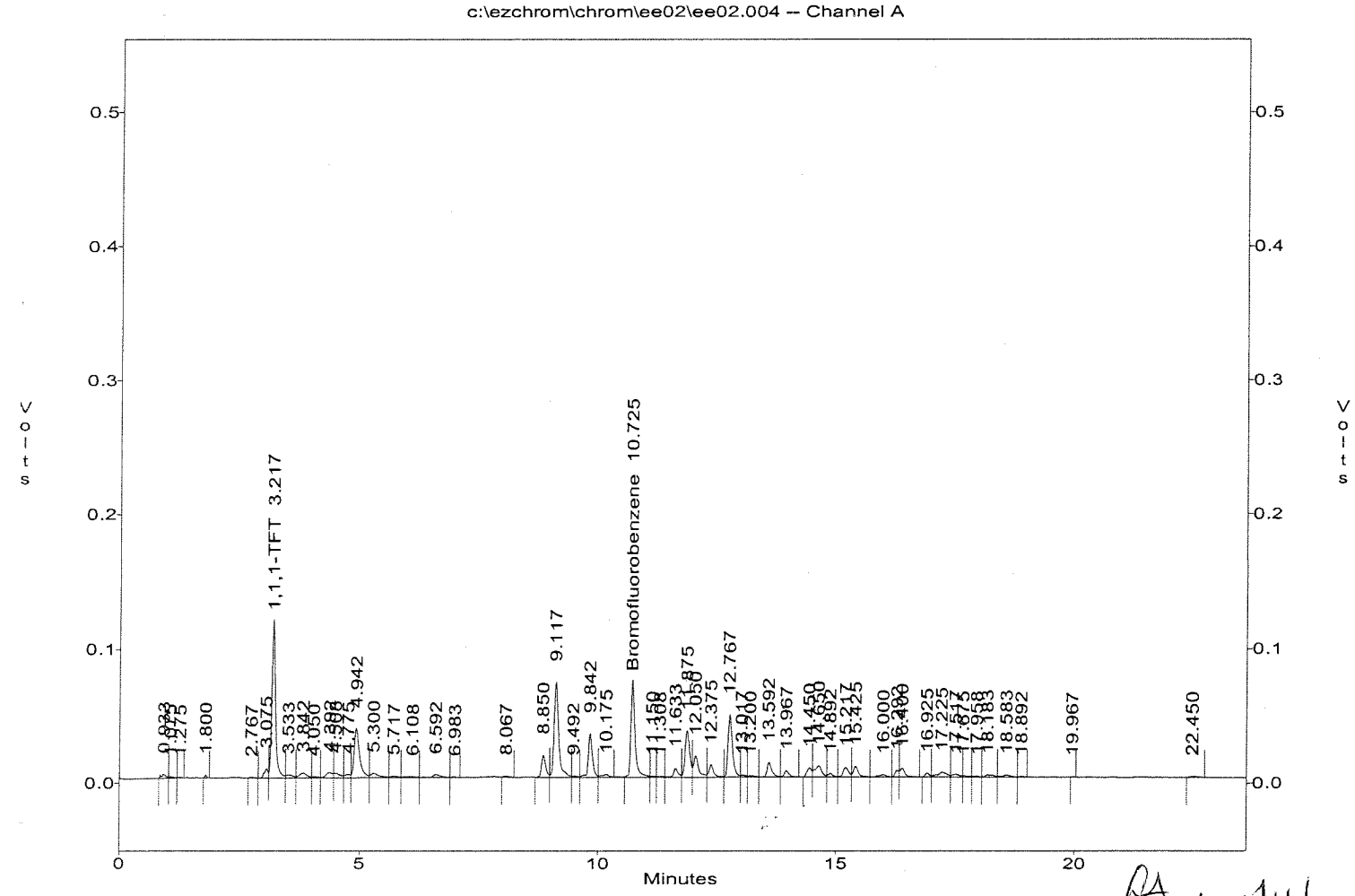


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.004
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0203 100/30
Acquired : May 02, 2014 12:57:53
Printed : May 05, 2014 09:31:56
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.217 | 630554.0 | 21400.0 | 30.00 |
| 26 | Bromofluorobenzene | 10.725 | 451712.0 | 16725.9 | 30.00 |
| G1 | GASOLINE(TOTAL) | | 2872293.0 | 28261.9 | 100.00 |
| G2 | GRO(C6-C10) | | 2207233.0 | 21355.4 | 100.00 |
| G3 | GRO(2MP-124TMB) | | 2196184.0 | 21297.0 | 100.00 |
| G4 | GRO(C5-C12) | | 2853376.0 | 27928.9 | 100.00 |
| G5 | GRO(C6-C12) | | 2850571.0 | 27890.2 | 100.00 |
| G6 | GRO(C5-C10) | | 2210038.0 | 21396.8 | 100.00 |




RS 05/05/14

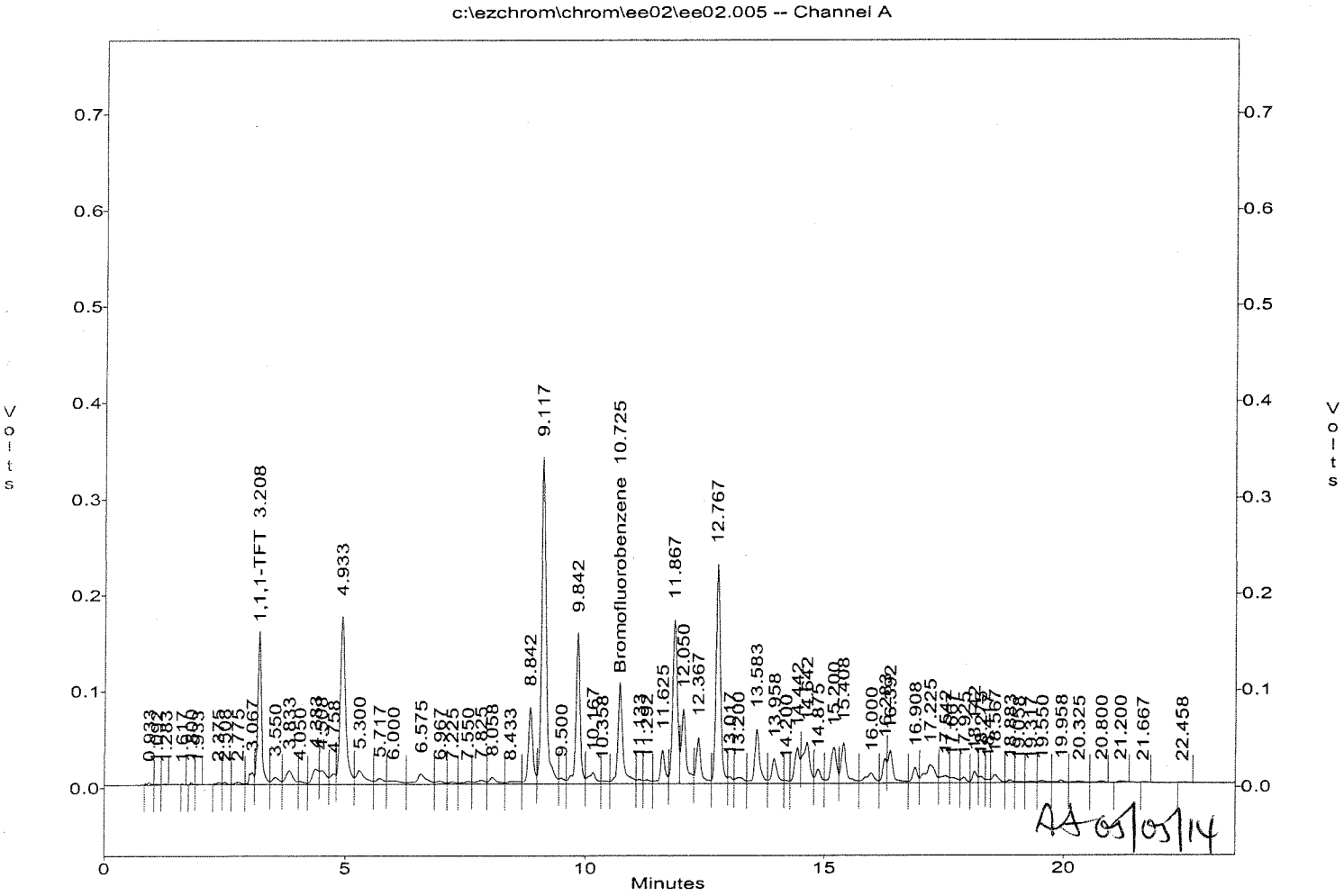
4023

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.005
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0204 500/40
Acquired : May 02, 2014 13:36:49
Printed : May 05, 2014 09:32:30
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.208 | 863365.0 | 21400.0 | 40.00 |
| 35 | Bromofluorobenzene | 10.725 | 758288.0 | 16725.9 | 40.00 |
| G1 | GASOLINE(TOTAL) | | 14446530.0 | 28261.9 | 500.00 |
| G2 | GRO(C6-C10) | | 10735124.0 | 21355.4 | 500.00 |
| G3 | GRO(2MP-124TMB) | | 10689338.0 | 21297.0 | 500.00 |
| G4 | GRO(C5-C12) | | 14281643.0 | 27928.9 | 500.00 |
| G5 | GRO(C6-C12) | | 14278004.0 | 27890.2 | 500.00 |
| G6 | GRO(C5-C10) | | 10740735.0 | 21396.8 | 500.00 |



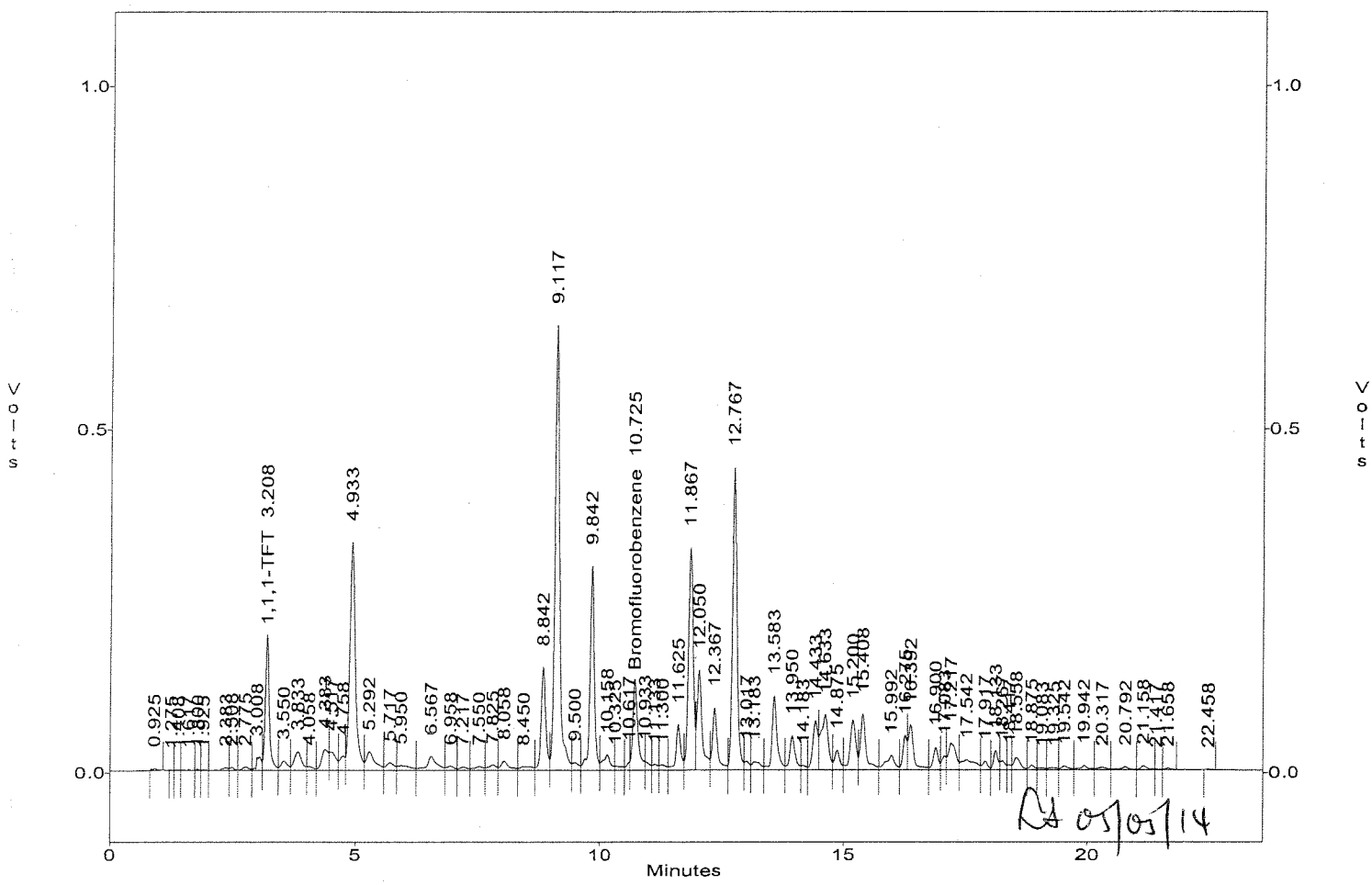
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.006
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0205 1000/50
Acquired : May 02, 2014 14:15:41
Printed : May 05, 2014 09:34:01
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.208 | 1088814.0 | 21400.0 | 50.00 |
| 36 | Bromofluorobenzene | 10.725 | 946013.0 | 16725.9 | 50.00 |
| G1 | GASOLINE(TOTAL) | | 27834716.0 | 28261.9 | 1000.00 |
| G2 | GRO(C6-C10) | | 20441208.0 | 21355.4 | 1000.00 |
| G3 | GRO(2MP-124TMB) | | 20359526.0 | 21297.0 | 1000.00 |
| G4 | GRO(C5-C12) | | 27414706.0 | 27928.9 | 1000.00 |
| G5 | GRO(C6-C12) | | 27410822.0 | 27890.2 | 1000.00 |
| G6 | GRO(C5-C10) | | 20451276.0 | 21396.8 | 1000.00 |

c:\ezchrom\chrom\ee02\ee02.006 -- Channel A



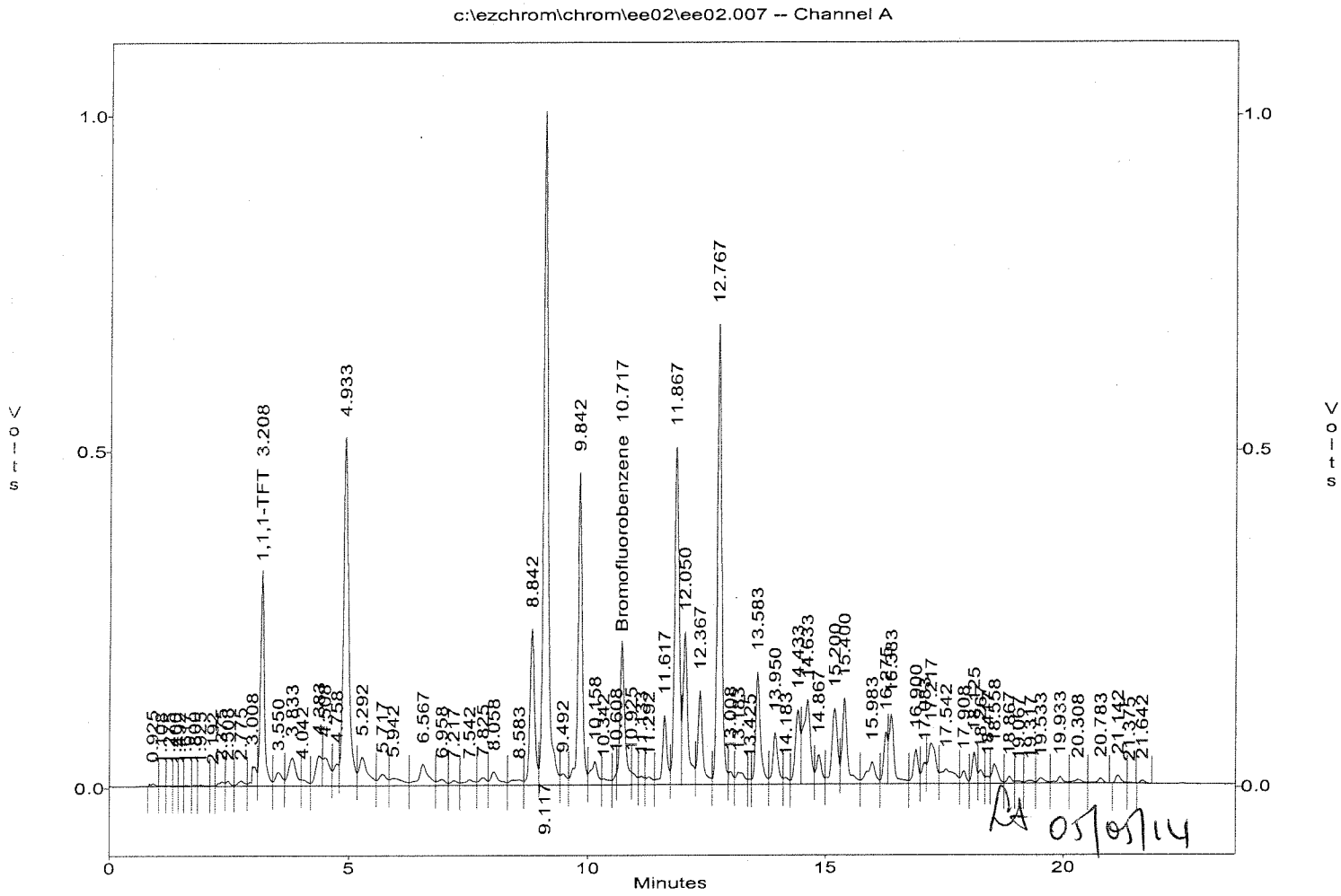

05/05/14

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.007
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0206 1500/80
Acquired : May 02, 2014 14:54:32
Printed : May 05, 2014 09:34:29
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 14 | 1,1,1-TFT | 3.208 | 1754672.0 | 21400.0 | 80.00 |
| 39 | Bromofluorobenzene | 10.717 | 1495364.0 | 16725.9 | 80.00 |
| G1 | GASOLINE(TOTAL) | | 42900720.0 | 28261.9 | 1500.00 |
| G2 | GRO(C6-C10) | | 31643026.0 | 21355.4 | 1500.00 |
| G3 | GRO(2MP-124TMB) | | 31542302.0 | 21297.0 | 1500.00 |
| G4 | GRO(C5-C12) | | 42297752.0 | 27928.9 | 1500.00 |
| G5 | GRO(C6-C12) | | 42275336.0 | 27890.2 | 1500.00 |
| G6 | GRO(C5-C10) | | 31675030.0 | 21396.8 | 1500.00 |



# SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EE02008A 05/02/2014 15:33
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 13053470 | 461.88 | -8 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10134937 | 474.58 | -5 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10247177 | 481.16 | -4 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 12590737 | 450.82 | -10 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 12493550 | 447.95 | -10 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10304659 | 481.60 | -4 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.717 | 10.674 | 10.760 | 40.0 | 16725.9 | 696321 | 41.63 | 4 | | 20 |
| 1,1,1-Trifluorotoluene | 3.208 | 3.084 | 3.332 | 40.0 | 21400.0 | 954586 | 44.61 | 12 | | 20 |

VG39E02.MET

AS
05/05/14

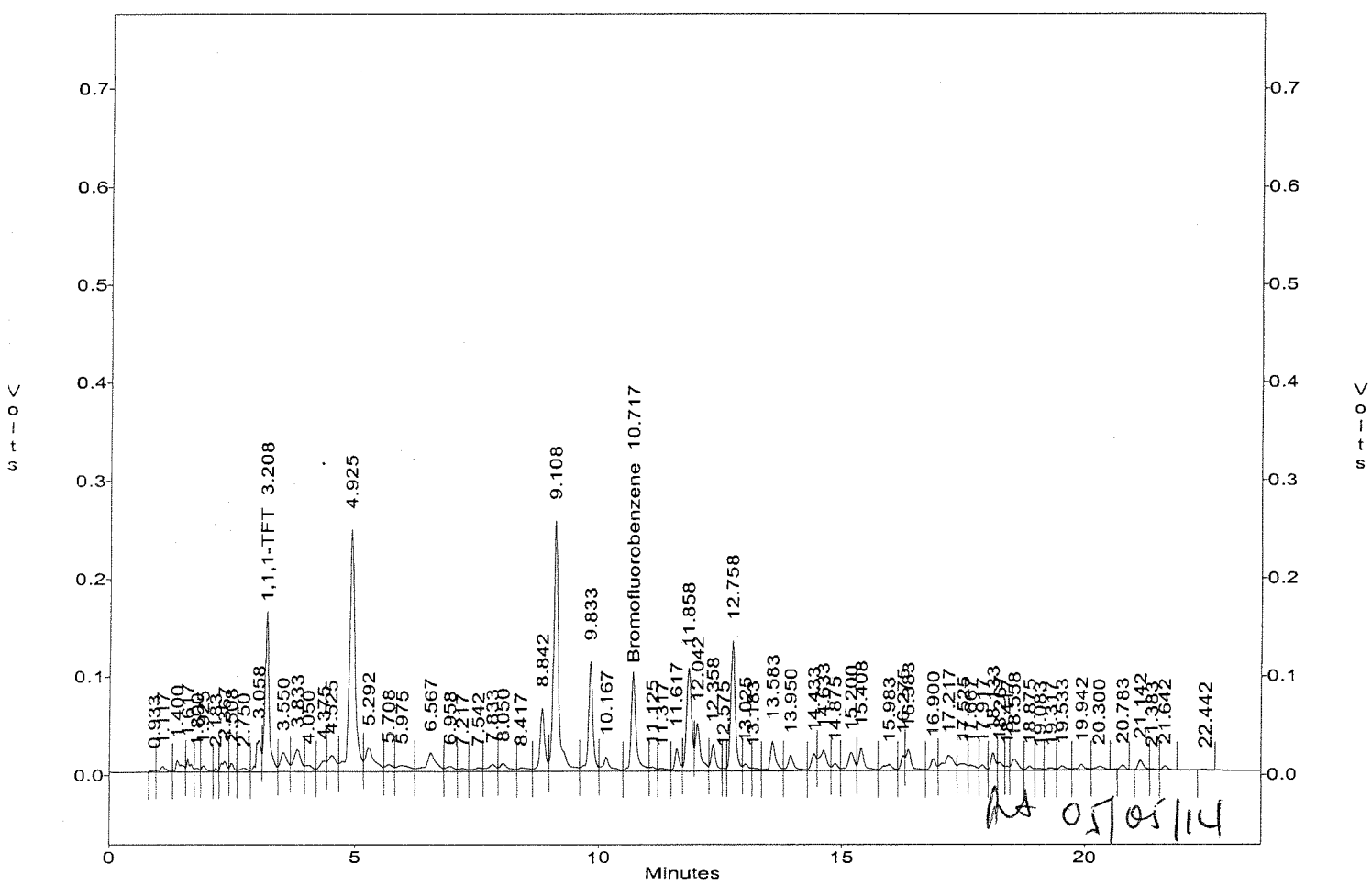
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.008
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : IVG39E02001 500/40
Acquired : May 02, 2014 15:33:24
Printed : May 05, 2014 09:35:55
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 12 | 1,1,1-TFT | 3.208 | 954586.0 | 21400.0 | 44.61 |
| 33 | Bromofluorobenzene | 10.717 | 696321.0 | 16725.9 | 41.63 |
| G1 | GASOLINE(TOTAL) | | 13053470.0 | 28261.9 | 461.88 |
| G2 | GRO(C6-C10) | | 10134937.0 | 21355.4 | 474.58 |
| G3 | GRO(2MP-124TMB) | | 10247177.0 | 21297.0 | 481.16 |
| G4 | GRO(C5-C12) | | 12590737.0 | 27928.9 | 450.81 |
| G5 | GRO(C6-C12) | | 12493550.0 | 27890.2 | 447.95 |
| G6 | GRO(C5-C10) | | 10304659.0 | 21396.8 | 481.60 |

c:\ezchrom\chrom\ee02\ee02.008 -- Channel A



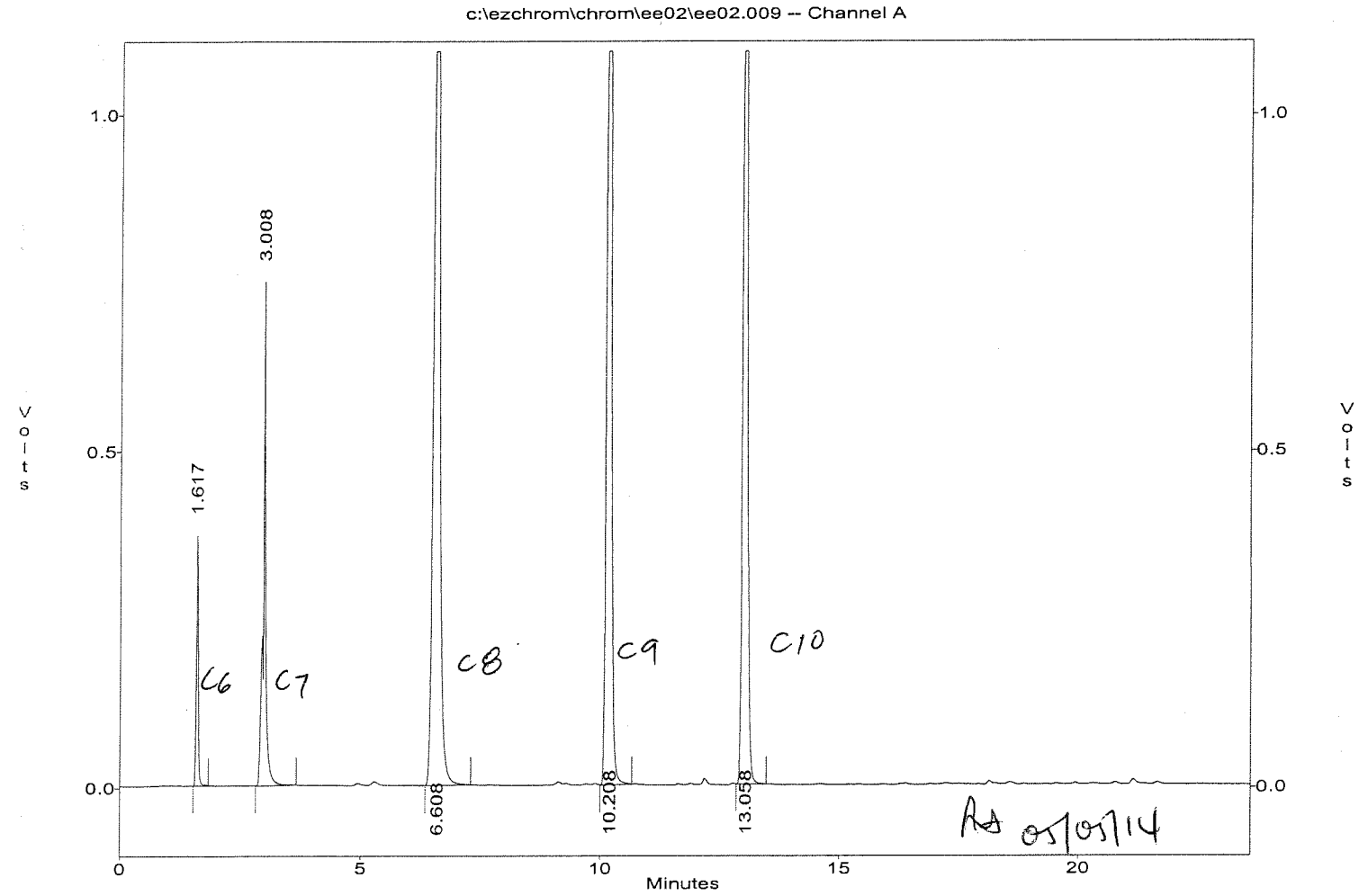

4629

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.009
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : GRO 1UL
Acquired : May 02, 2014 16:12:18
Printed : May 05, 2014 09:36:36
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 32746974.0 | 28261.9 | 1158.70 |
| G2 | GRO(C6-C10) | | 22835384.0 | 21355.4 | 1069.30 |
| G3 | GRO(2MP-124TMB) | | 23874628.0 | 21297.0 | 1121.03 |
| G4 | GRO(C5-C12) | | 32746974.0 | 27928.9 | 1172.51 |
| G5 | GRO(C6-C12) | | 32746974.0 | 27890.2 | 1174.14 |
| G6 | GRO(C5-C10) | | 23874628.0 | 21396.8 | 1115.80 |

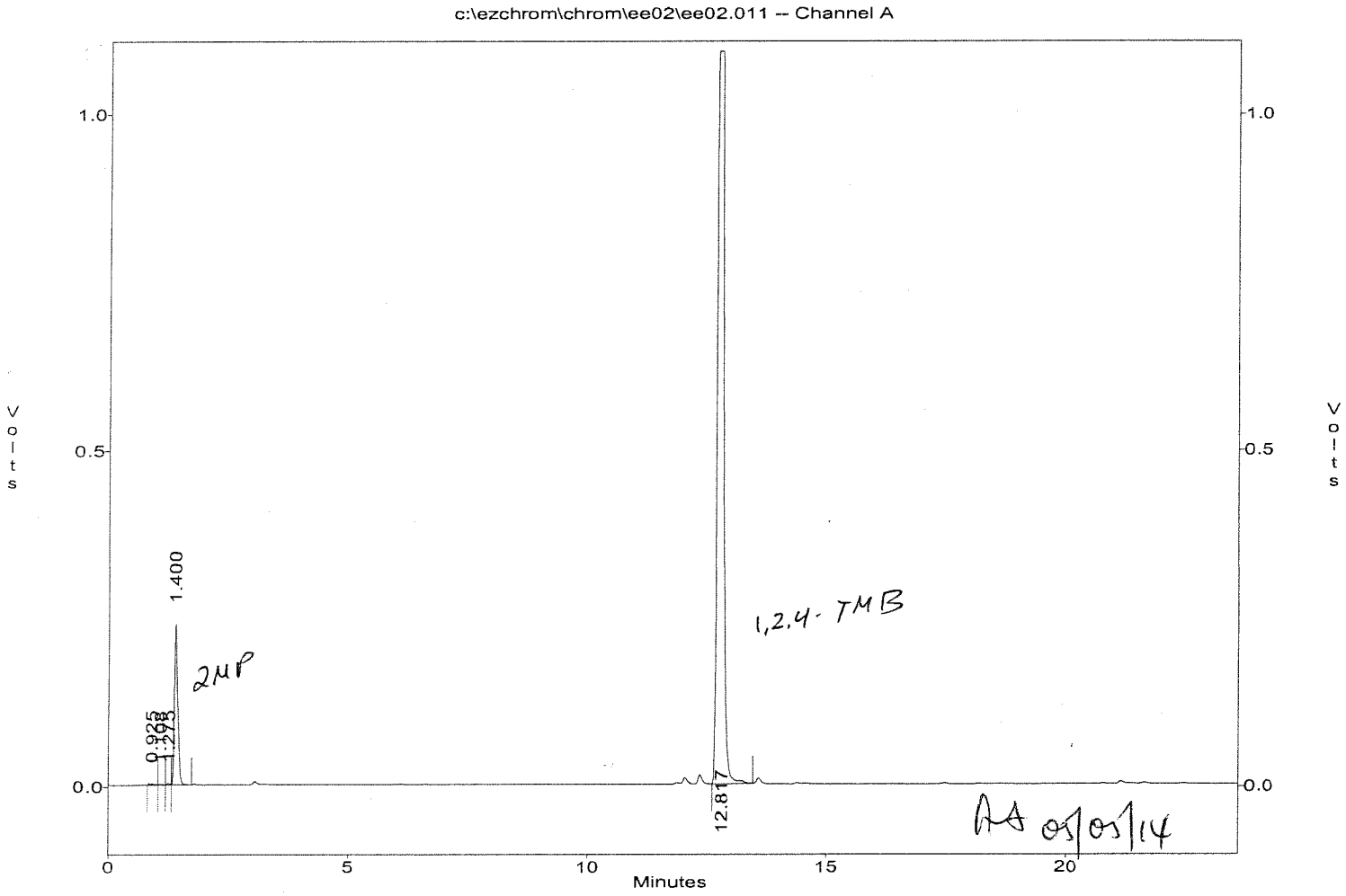


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.011
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : 2MP/1,2,4-TMB
Acquired : May 02, 2014 17:30:38
Printed : May 05, 2014 09:36:43
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 11435951.0 | 28261.9 | 404.64 |
| G2 | GRO(C6-C10) | | 10280670.0 | 21355.4 | 481.41 |
| G3 | GRO(2MP-124TMB) | | 11417507.0 | 21297.0 | 536.11 |
| G4 | GRO(C5-C12) | | 11428096.0 | 27928.9 | 409.19 |
| G5 | GRO(C6-C12) | | 10280670.0 | 27890.2 | 368.61 |
| G6 | GRO(C5-C10) | | 11428096.0 | 21396.8 | 534.10 |



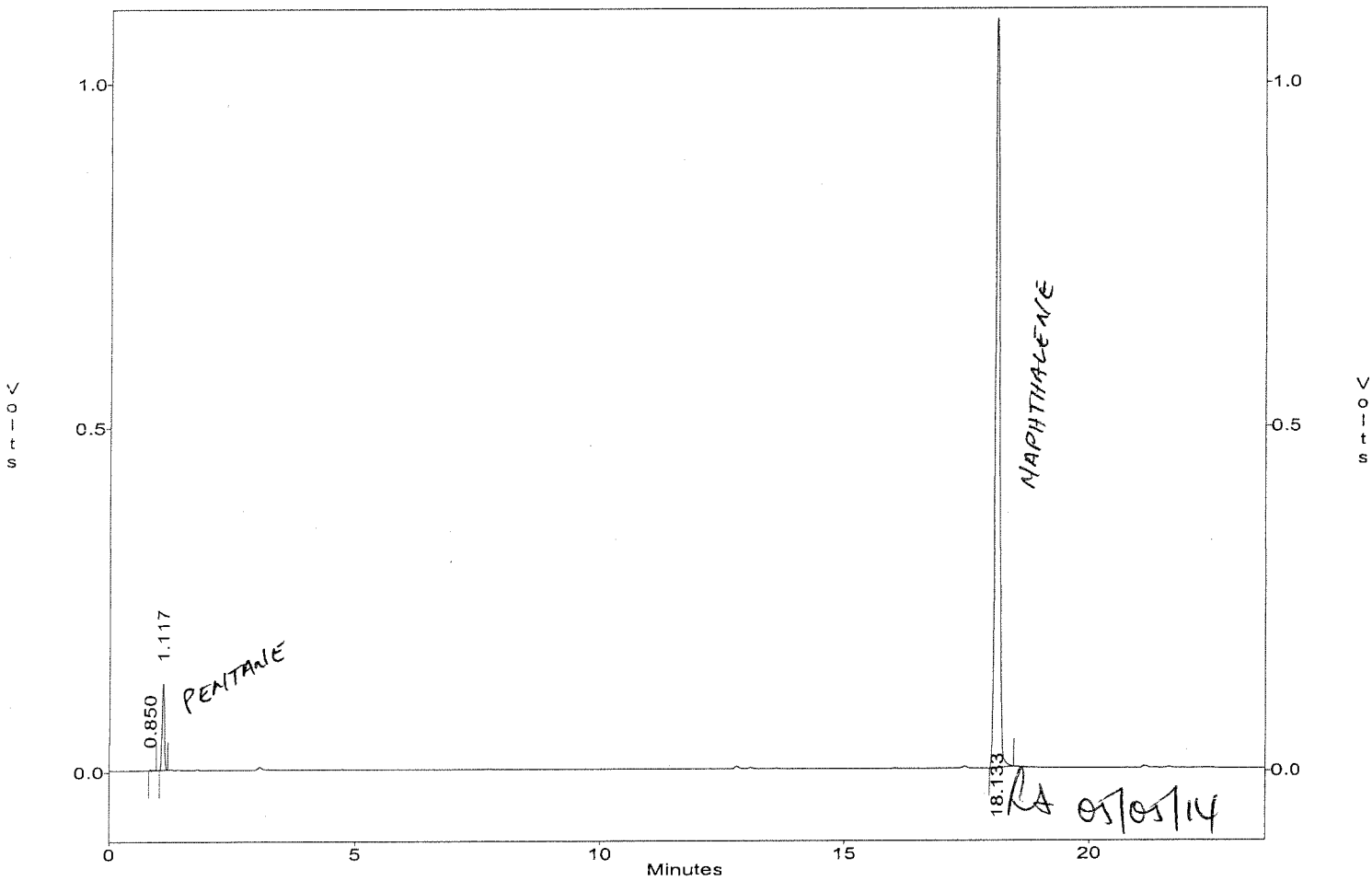
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.013
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : PENTANE/NAPHTHALENE
Acquired : May 02, 2014 18:48:50
Printed : May 05, 2014 09:37:29
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 7086992.0 | 28261.9 | 250.76 |
| G2 | GRO(C6-C10) | | 0.0 | 21355.4 | 0.00 |
| G3 | GRO(2MP-124TMB) | | 0.0 | 21297.0 | 0.00 |
| G4 | GRO(C5-C12) | | 6645801.0 | 27928.9 | 237.95 |
| G5 | GRO(C6-C12) | | 6645801.0 | 27890.2 | 238.28 |
| G6 | GRO(C5-C10) | | 0.0 | 21396.8 | 0.00 |

c:\ezchrom\chrom\ee02\ee02.013 -- Channel A



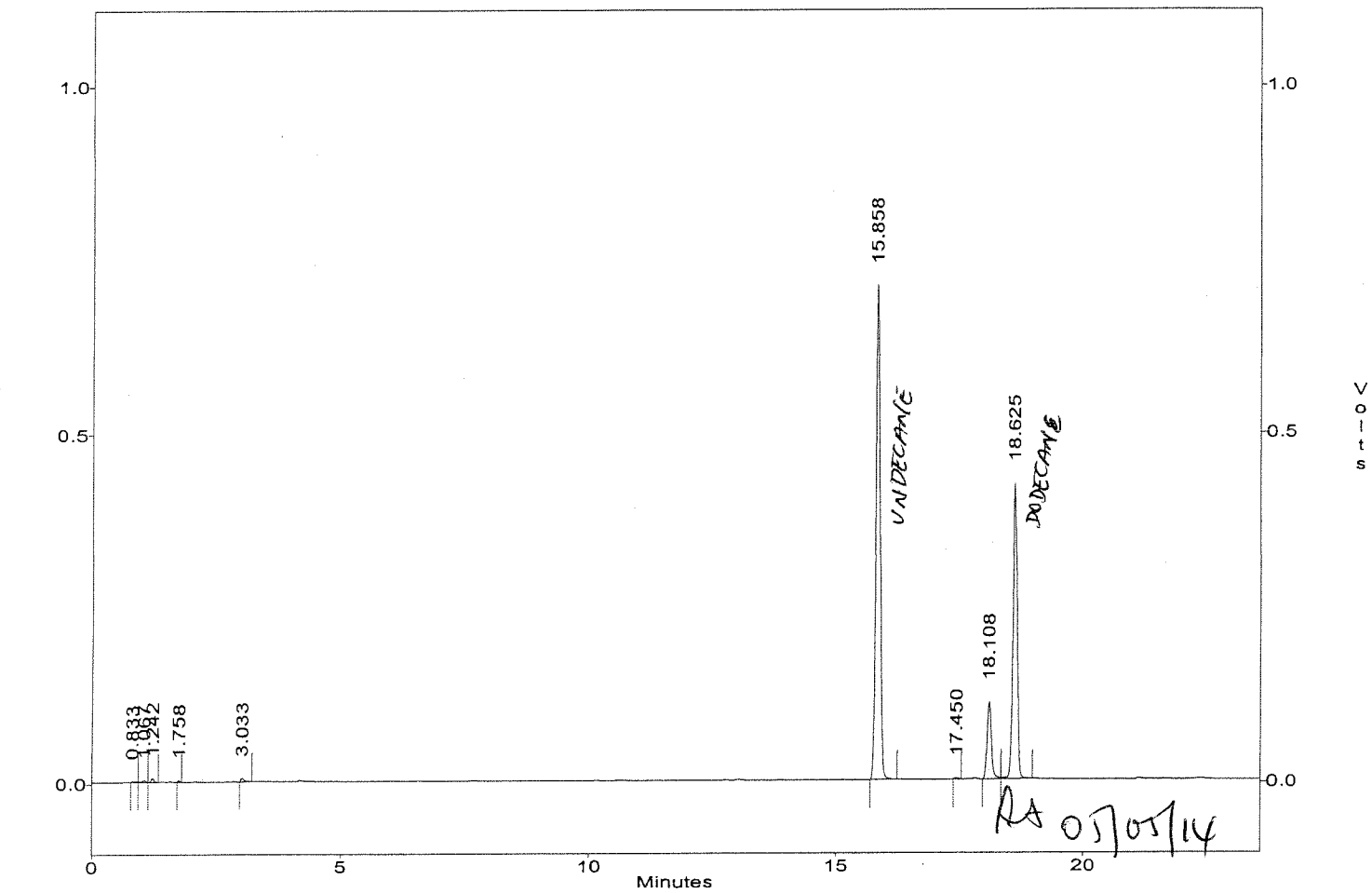
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.015
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : UNDECANE/DODECANE
Acquired : May 02, 2014 20:06:47
Printed : May 05, 2014 09:38:16
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 7612846.0 | 28261.9 | 269.37 |
| G2 | GRO(C6-C10) | | 30808.0 | 21355.4 | 1.44 |
| G3 | GRO(2MP-124TMB) | | 30808.0 | 21297.0 | 1.45 |
| G4 | GRO(C5-C12) | | 7599145.0 | 27928.9 | 272.09 |
| G5 | GRO(C6-C12) | | 7579660.0 | 27890.2 | 271.77 |
| G6 | GRO(C5-C10) | | 50293.0 | 21396.8 | 2.35 |

c:\ezchrom\chrom\ee02\ee02.015 -- Channel A




RA 05/05/14

4033

# DAILY CALIBRATIONS

CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EJ22003A 10/22/2014 17:31
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 13407721 | 474.41 | -5 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10217129 | 478.43 | -4 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10072458 | 472.95 | -5 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 13288121 | 475.79 | -5 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 13275053 | 475.98 | -5 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10230197 | 478.12 | -4 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.742 | 10.699 | 10.785 | 40.0 | 16725.9 | 737748 | 44.11 | 10 | | 20 |
| 1,1,1-Trifluorotoluene | 3.233 | 3.109 | 3.357 | 40.0 | 21400.0 | 867309 | 40.53 | 1 | | 20 |

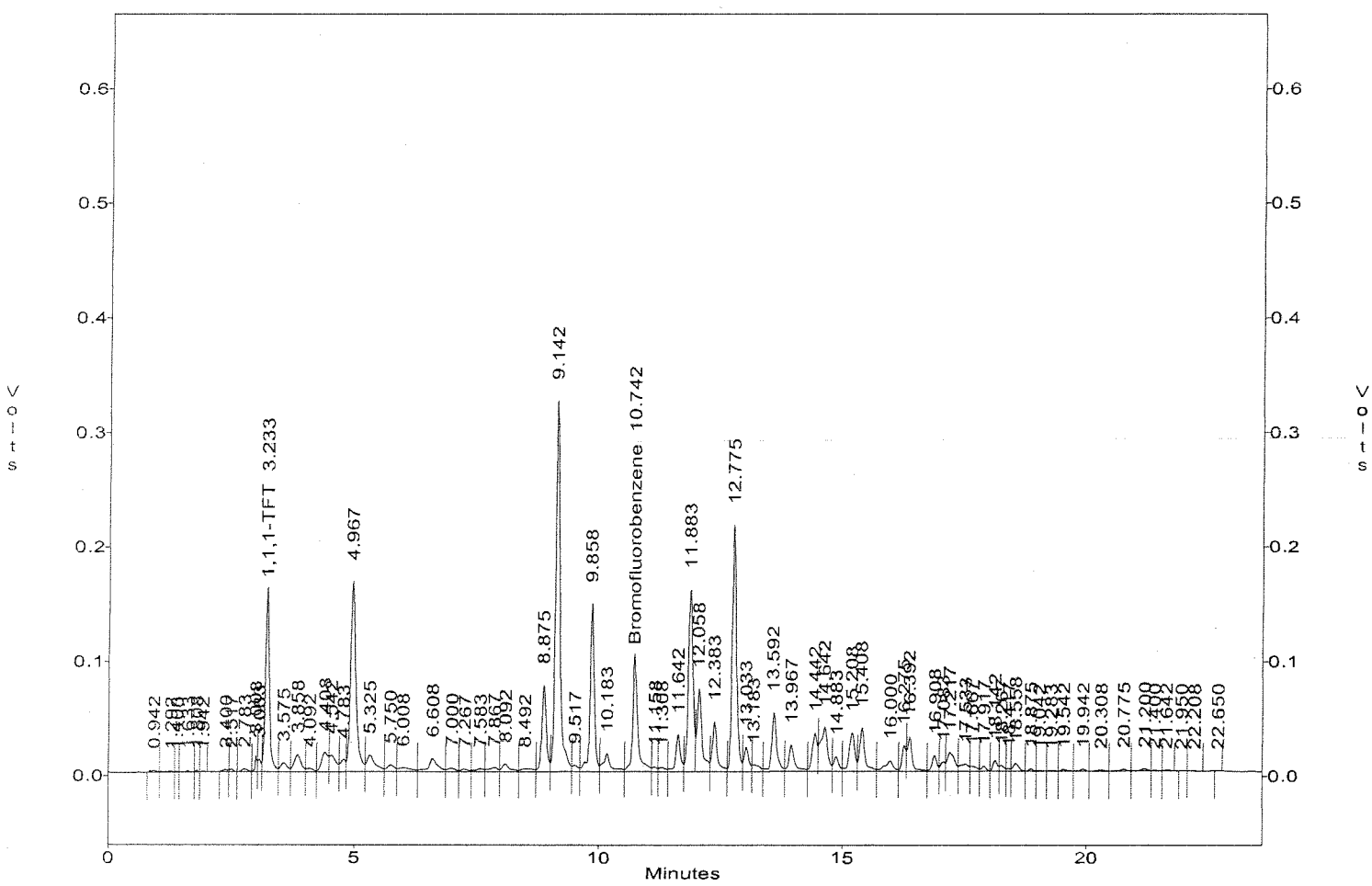
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.003
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : CVG39E02738 500/40
Acquired : Oct 22, 2014 17:31:21
Printed : Oct 22, 2014 17:54:53
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 12 | 1,1,1-TFT | 3.233 | 867309.0 | 21400.0 | 40.53 |
| 35 | Bromofluorobenzene | 10.742 | 737748.0 | 16725.9 | 44.11 |
| G1 | GASOLINE(TOTAL) | | 13407721.0 | 28261.9 | 474.41 |
| G2 | GRO(C6-C10) | | 10217129.0 | 21355.4 | 478.43 |
| G3 | GRO(2MP-124TMB) | | 10072458.0 | 21297.0 | 472.95 |
| G4 | GRO(C5-C12) | | 13288121.0 | 27928.9 | 475.78 |
| G5 | GRO(C6-C12) | | 13275053.0 | 27890.2 | 475.97 |
| G6 | GRO(C5-C10) | | 10230197.0 | 21396.8 | 478.12 |

c:\ezchrom\chrom\EJ22\Ej22.003 -- Channel A




4036

CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EJ22014A 10/23/2014 00:40
CONC UNIT : ppb

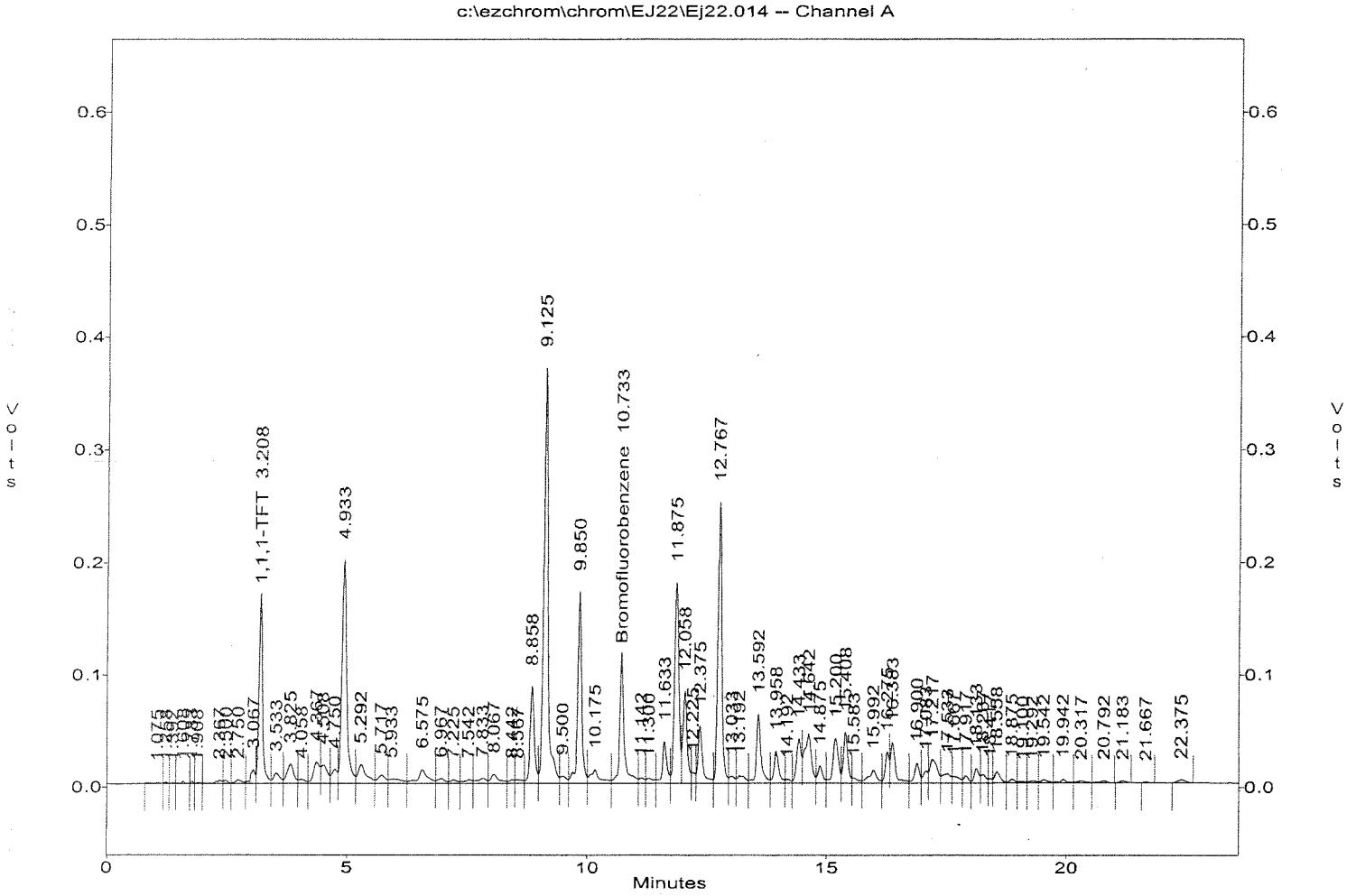
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 14971278 | 529.73 | 6 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 11114302 | 520.44 | 4 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 11074576 | 520.01 | 4 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 14750493 | 528.15 | 6 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 14731066 | 528.18 | 6 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 11133729 | 520.34 | 4 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.733 | 10.690 | 10.776 | 40.0 | 16725.9 | 769700 | 46.02 | 15 | | 20 |
| 1,1,1-Trifluorotoluene | 3.208 | 3.084 | 3.332 | 40.0 | 21400.0 | 850608 | 39.75 | -1 | | 20 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ22\Ej22.014
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : CVG39E02739 500/40
Acquired : Oct 23, 2014 00:40:42
Printed : Oct 23, 2014 01:04:14
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.208 | 850608.0 | 21400.0 | 39.75 |
| 35 | Bromofluorobenzene | 10.733 | 769700.0 | 16725.9 | 46.02 |
| G1 | GASOLINE(TOTAL) | | 14971278.0 | 28261.9 | 529.73 |
| G2 | GRO(C6-C10) | | 11114302.0 | 21355.4 | 520.44 |
| G3 | GRO(2MP-124TMB) | | 11074576.0 | 21297.0 | 520.01 |
| G4 | GRO(C5-C12) | | 14750493.0 | 27928.9 | 528.15 |
| G5 | GRO(C6-C12) | | 14731066.0 | 27890.2 | 528.18 |
| G6 | GRO(C5-C10) | | 11133729.0 | 21396.8 | 520.34 |



# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# PURGEABLE TPH

**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

Purge Volume = 5 ml

GASOLINE ICAL

GRO - SV2-07-02-13
2MP - SV2-09-06-01
TMB - SV2-05-23
PENTANE - SV2-07-01-03
NAPHTHALENE - SV2-05-24
UNDECANE - SV2-07-01-02
DODECANE - SV2-07-01-06

| | |
|---|---|
| Book #: | A39-047 |
| Instrument No.: | 39 |
| Analytical Sequence: | EE02 |
| Method File: | ☑ VG39E02 |
| | ☐ |
| | ☐ |
| Analytical Batch: | N/A |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-5030B | 3 |
| ☐ EMAX-BTEXM | 1 |
| ☑ EMAX-8015G | 4 |
| ☐ EMAX-AK101 | 2 |
| ☐ EMAX- | |

| STANDARDS ID | | Amt Added (µL) | Conc. (mg/L) |
|---|---|---|---|
| ICAL | — | — | — |
| ICAL | SV2-07-02-06 | See Analysis Run logbook | 5000 |
| ICV | SV2-07-02-04 | 0.5ml | 5000 |
| ICV | — | — | — |
| DCC GAS | — | — | — |
| DCC BTEX | — | — | — |
| DCC | — | — | — |
| BFB/TFT | SV2-09-08-03 (~~Sample~~) (~~DCC~~) | SC 5/02/14 See Analysis Run Logbook | 100 |
| LCS/LCSD | — | — | — |
| MS/MSD | — | — | — |
| GRO (HC-Chain) | SV2-07-02-13 | 1ml | 2000 |
| | | | |

| Solvent | ID/Lot # |
|---|---|
| Methanol | |
| Reagent Water | RW2-12-001 |
| | Lot # |
| pH strip | — |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZC-3-BTEX SC | 5/05/14 |

Analyzed By: SC

Date: 5/02/14

Method: Vg39e02.met Batch: Ee02.seq Data: Ee02.030 - [Batch: ee02.seq]

File Edit Method Batch Options Analysis Control Window Help

Method | Data | Batch | Setup | Batch | Preview | Single | STOP | Recalib | Analyze | Reports

| Run | Sample ID | Method | Filename | Description |
|---|---|---|---|---|
| 1 | IB39E0201 | vg39e02.met | EE02.001 | |
| 2 | VG39E0201 20/10 0.02ul GAS ICAL STD / 0.5ul SUW | vg39e02.met | EE02.002 | |
| 3 | VG39E0202 50/20 0.05ul / 1ul | vg39e02.met | EE02.003 | |
| 4 | VG39E0203 100/30 0.1ul / 1.5ul | vg39e02.met | EE02.004 | |
| 5 | VG39E0204 500/40 0.5ul / 2ul | vg39e02.met | EE02.005 | GASOLINE ICAL |
| 6 | VG39E0205 1000/50 1ul / 2.5ul | vg39e02.met | EE02.006 | |
| 7 | VG39E0206 1500/80 1.5ul / 4ul | vg39e02.met | EE02.007 | |
| 8 | IVG39E02001 500/40 0.5ul GAS ICV STD / 2ul SUW | vg39e02.met | EE02.008 | GASOLINE ICV |
| 9 | GRO 1UL | vg39e02.met | EE02.009 | |
| 10 | RINSE | vg39e02.met | EE02.010 | |
| 11 | 2MP/1,2,4-TMB | vg39e02.met | EE02.011 | |
| 12 | RINSE | vg39e02.met | EE02.012 | |
| 13 | PENTANE/NAPHTHALENE | vg39e02.met | EE02.013 | FINAL |
| 14 | RINSE | vg39e02.met | EE02.014 | |
| 15 | UNDECANE/DODECANE | vg39e02.met | EE02.015 | |
| 16 | RINSE | vg39e02.met | EE02.016 | |
| 17 | IB | vg39e02.met | EE02.017 | |
| 18 | IB | vg39e02.met | EE02.018 | |
| 19 | IB | vg39e02.met | EE02.019 | |
| 20 | IB | vg39e02.met | EE02.020 | |
| 21 | IB | vg39e02.met | EE02.021 | |
| 22 | IB | vg39e02.met | EE02.022 | |
| 23 | IB SC 5/05/14 | vg39e02.met | EE02.023 | |
| 24 | IB | vg39e02.met | EE02.024 | |
| 25 | IB | vg39e02.met | EE02.025 | |
| 26 | IB | vg39e02.met | EE02.026 | |
| 27 | IB | vg39e02.met | EE02.027 | |
| 28 | IB | vg39e02.met | EE02.028 | |
| 29 | IB | vg39e02.met | EE02.029 | |
| 30 | IB | vg39e02.met | EE02.030 | |
| 31 | IB | vg39e02.met | EE02.031 | |
| 32 | IB | vg39e02.met | EE02.032 | |
| 33 | IB | vg39e02.met | EE02.033 | |
| 34 | IB | vg39e02.met | EE02.034 | |

Instrument 1: T-039

Start | EZChrom Chromatography | untitled-iPainter | Exploring - Export | Method: Vg39e02.me... | Monday, May 05, 2014

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# PURGEABLE TPH

**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

Purge Volume = 5 ml

VG39J13(water) : J140, J144, J128

~~6MJ003 (soil) : J090~~ SC 10/23/14

| | |
|---|---|
| Book #: | A39-049 |
| Instrument No.: | 39 |
| Analytical Sequence: | EJ22 |
| Method File: | ☑ VG39E02 |
| | ☐ |
| | ☐ |
| Analytical Batch: | CVG39E02738 |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-5030B | 3 |
| ☑ EMAX-8015G | 5 |
| ☐ EMAX-AK101 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | Amt Added (µL) | Conc. (mg/L) |
|---|---|---|
| ICAL | | |
| ICAL | SC 10/23/14 | |
| ICV | | |
| ICV | | |
| DCC GAS SV2-07-02-24 | 0.5ml | 5000 |
| DCC | SC 10/23/14 | |
| DCC | | |
| BFB/TFT SV2-09-17-03 (Sample) | 2ul | 100 |
| BFB/TFT SV2-09-17-03 (DCC) | 2ul | 100 |
| LCS/LCSD SV2-07-02-20 | 0.5ml | 5000 |
| MS/MSD ↓ | ↓ | ↓ |
| GRO (HC-Chain) SV2-07-02-13 | 1ml | 2000 |
| | | |

| Solvent | ID/Lot # |
|---|---|
| Methanol | |
| Reagent Water | RW2-12-001 |
| | Lot # |
| pH strip | HC412469 |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZC-3-BTEX | |

Analyzed By: SC

Date: 10/22/14

Method: Vg39e02.met Batch: Ej22.seq Data: Ej22.033 - [Batch: ej22.seq]

File Edit Method Batch Options Analysis Control Window Help

Method | Data | Batch | Setup | Batch | Preview | Run Single | STOP | Reslib | Analyze | Reports

| Run | Sample ID | Method | Filename | Description |
|---|---|---|---|---|
| 1 | IB39J2201 | vg39e02.met | EJ22.001 | |
| 2 | GRO 1uL | vg39e02.met | EJ22.002 | SV2-07-02-13 |
| 3 | CVG39E02738 500/40 | vg39e02.met | EJ22.003 | |
| 4 | VG39J13L 5.0ML W | vg39e02.met | EJ22.004 | Conc. 500/40 |
| 5 | VG39J13C 5.0ML W | vg39e02.met | EJ22.005 | |
| 6 | VG39J13Q 5.0ML W NOT evaluated | vg39e02.met | EJ22.006 | |
| 7 | VG39J13B 5.0ML W | vg39e02.met | EJ22.007 | |
| 8 | 14J140-01 5.0ML W | vg39e02.met | EJ22.008 | PH<2 |
| 9 | 14J140-10 5.0ML W | vg39e02.met | EJ22.009 | PH<2 |
| 10 | 14J144-02 5.0ML W | vg39e02.met | EJ22.010 | PH~7 |
| 11 | 14J144-01 5.0ML W | vg39e02.met | EJ22.011 | PH~7 |
| 12 | 14J144-01M 5.0ML W | vg39e02.met | EJ22.012 | PH~7 |
| 13 | 14J144-01S 5.0ML W | vg39e02.met | EJ22.013 | PH~7 |
| 14 | CVG39E02739 500/40 | vg39e02.met | EJ22.014 | FINAL |
| 15 | 14J140-08 5.0ML W | vg39e02.met | EJ22.015 | PH<2 |
| 16 | 14J140-08M 5.0ML W | vg39e02.met | EJ22.016 | PH<2 |
| 17 | 14J140-08S 5.0ML W | vg39e02.met | EJ22.017 | PH<2 |
| 18 | 14J140-02 5.0ML W | vg39e02.met | EJ22.018 | PH<2 |
| 19 | 14J140-03 5.0ML W | vg39e02.met | EJ22.019 | PH<2 |
| 20 | 14J140-04 5.0ML W | vg39e02.met | EJ22.020 | PH<2 |
| 21 | 14J140-05 5.0ML W | vg39e02.met | EJ22.021 | PH<2 |
| 22 | 14J140-06 5.0ML W | vg39e02.met | EJ22.022 | PH<2 |
| 23 | 14J140-07 5.0ML W | vg39e02.met | EJ22.023 | PH<2 |
| 24 | 14J140-09 5.0ML W | vg39e02.met | EJ22.024 | PH<2 |
| 25 | RINSE | vg39e02.met | EJ22.025 | |
| 26 | CVG39E02740 500/40 | vg39e02.met | EJ22.026 | |
| 27 | 14J140-02I 1ML W DF=5 Not evaluated | vg39e02.met | EJ22.027 | PH<2 |
| 28 | 14J128-07 5.0ML W | vg39e02.met | EJ22.028 | PH<2 |
| 29 | 14J128-08 5.0ML W | vg39e02.met | EJ22.029 | PH<2 |
| 30 | 14J090-02N 100uL S NOT evaluated | vg39e02.met | EJ22.030 | FROM SOIL BATCH # GMJ003S |
| 31 | 14J099-09N 100uL S | vg39e02.met | EJ22.031 | FROM SOIL BATCH # GPJ003S |
| 32 | CVG39E02741 500/40 | vg39e02.met | EJ22.032 | |
| 33 | IB SC | vg39e02.met | EJ22.033 | |
| 34 | IB 10/23/14 | vg39e02.met | EJ22.034 | |

Instrument 1: T-039

Start | EZChrom Chromat... | Method: Vg39... | untitled - Paint | Method: Vg39e02... | Exploring - Export | Method: Vg55f27a... | Calculator | Thursday, October 23, 2014

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 14J144

CASE NARRATIVE

Client : BATTELLE

Project : RED HILL PHASE 1B

SDG : 14J144

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One (1) water sample was received on 10/22/14 for TPH analysis, Method SW3520C/8015B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 and project SAP August 2014.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for DSJ038WL/C were all within QC limits.

Matrix QC Sample
A set of MS/MSD was analyzed with the samples in this SDG.
Percent recoveries for J144-01M/S were within project QC limits.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : BATTELLE
Project : RED HILL PHASE 1B

SDG NO. : 14J144
Instrument ID : GCT105

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | DSJ038WB | 1 | NA | 10/30/1410:08 | 10/28/1415:00 | LJ29055A | LJ29052A | DSJ038W | Method Blank |
| LCS1W | DSJ038WL | 1 | NA | 10/30/1410:25 | 10/28/1415:00 | LJ29056A | LJ29052A | DSJ038W | Lab Control Sample (LCS) |
| LCD1W | DSJ038WC | 1 | NA | 10/30/1410:42 | 10/28/1415:00 | LJ29057A | LJ29052A | DSJ038W | LCS Duplicate |
| RHMW06-GW-01 | J144-01 | 1.15 | NA | 10/30/1413:32 | 10/28/1415:00 | LJ29067A | LJ29065A | DSJ038W | Field Sample |
| RHMW06-GW-01MS | J144-01M | 1.12 | NA | 10/30/1413:49 | 10/28/1415:00 | LJ29068A | LJ29065A | DSJ038W | Matrix Spike Sample (MS) |
| RHMW06-GW-01MSD | J144-01S | 1.08 | NA | 10/30/1414:06 | 10/28/1415:00 | LJ29069A | LJ29065A | DSJ038W | MS Duplicate (MSD) |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/21/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/22/14 |
| Batch No. | : 14J144 | Date Extracted: | 10/28/14 15:00 |
| Sample ID: | RHMW06-GW-01 | Date Analyzed: | 10/30/14 13:32 |
| Lab Samp ID: | J144-01 | Dilution Factor: | 1.15 |
| Lab File ID: | LJ29067A | Matrix : | WATER |
| Ext Btch ID: | DSJ038W | % Moisture : | NA |
| Calib. Ref.: | LJ29065A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | ND | 0.12 | 0.058 | 0.086 |
| ORO | ND | 0.12 | 0.058 | 0.086 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.932 | 1.150 | 81.0 | 60-130 |
| HEXACOSANE | 0.199 | 0.2875 | 69.3 | 60-130 |

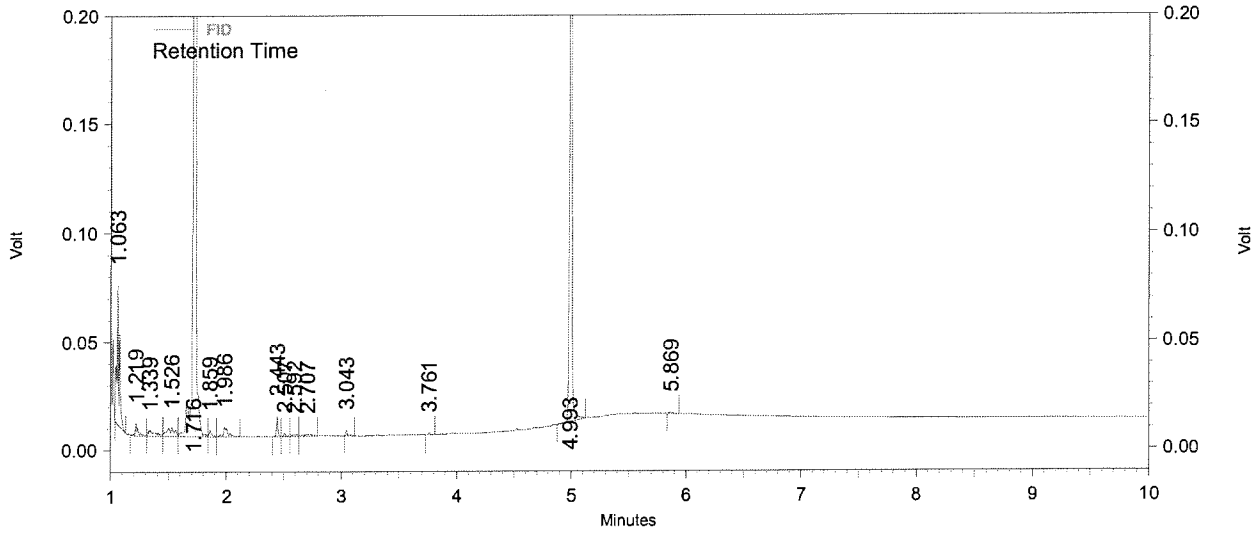
| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29067.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: 14J144-01** |
| **Acquired** | **: 10/30/14 13:32:40** |
| **Printed** | **: 10/30/14 15:17:15** |
| **User** | **: KLinn** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.716 | 1449485 | 17891.93900 | 81.013 |
| HEXACOSANE | 4.993 | 433966 | 25061.64131 | 17.316 |
| DIESEL(TOTAL) | | 74829 | 33399.78271 | 2.240 |
| DIESEL(C10-C24) | | 32464 | 32585.09943 | 0.996 |
| M.OIL(C24-C36) | | 1180 | 20980.20150 | 0.056 |
| Totals | | 1991924 | | 101.622 |




**Software Version: Version 3.3.1**

# QC SUMMARIES

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 10/28/14 |
| Batch No. | : 14J144 | Date Extracted: | 10/28/14 15:00 |
| Sample ID: | MBLK1W | Date Analyzed: | 10/30/14 10:08 |
| Lab Samp ID: | DSJ038WB | Dilution Factor: | 1 |
| Lab File ID: | LJ29055A | Matrix : | WATER |
| Ext Btch ID: | DSJ038W | % Moisture : | NA |
| Calib. Ref.: | LJ29052A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | ND | 0.10 | 0.050 | 0.075 |
| ORO | ND | 0.10 | 0.050 | 0.075 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.711 | 1.000 | 71.1 | 60-130 |
| HEXACOSANE | 0.153 | 0.2500 | 61.2 | 60-130 |

| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J144
METHOD: SW3520C/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | DSJ038WB | DSJ038WL | DSJ038WC | | |
| LAB FILE ID: | LJ29055A | LJ29056A | LJ29057A | | |
| DATE EXTRACTED: | 10/28/1415:00 | 10/28/1415:00 | 10/28/1415:00 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 10/30/1410:08 | 10/30/1410:25 | 10/30/1410:42 | DATE RECEIVED: | 10/28/14 |
| PREP. BATCH: | DSJ038W | DSJ038W | DSJ038W | | |
| CALIB. REF: | LJ29052A | LJ29052A | LJ29052A | | |

ACCESSION:

| PARAMETER | BLNK RSLT (mg/L) | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO | ND | 5.00 | 3.00 | 60 | 5.00 | 3.42 | 68 | 13 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 1.00 | 0.679 | 68 | 1.00 | 0.793 | 79 | 60-130 |
| Hexacosane | 0.250 | 0.173 | 69 | 0.250 | 0.201 | 80 | 60-130 |

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J144
METHOD: SW3520C/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1.15 | 1.12 | 1.08 | | |
| SAMPLE ID: | RHMW06-GW-01 | | | | |
| LAB SAMP ID: | J144-01 | J144-01M | J144-01S | | |
| LAB FILE ID: | LJ29067A | LJ29068A | LJ29069A | | |
| DATE EXTRACTED: | 10/28/1415:00 | 10/28/1415:00 | 10/28/1415:00 | DATE COLLECTED: | 10/21/14 |
| DATE ANALYZED: | 10/30/1413:32 | 10/30/1413:49 | 10/30/1414:06 | DATE RECEIVED: | 10/22/14 |
| PREP. BATCH: | DSJ038W | DSJ038W | DSJ038W | | |
| CALIB. REF: | LJ29065A | LJ29065A | LJ29065A | | |

ACCESSION:

| PARAMETER | SMPL RSLT (mg/L) | SPIKE AMT (mg/L) | MS RSLT (mg/L) | MS % REC | SPIKE AMT (mg/L) | MSD RSLT (mg/L) | MSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO | ND | 5.60 | 4.16 | 74 | 5.40 | 3.97 | 73 | 1 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | MS RSLT (mg/L) | MS % REC | SPIKE AMT (mg/L) | MSD RSLT (mg/L) | MSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 1.12 | 0.974 | 87 | 1.08 | 0.973 | 90 | 60-130 |
| Hexacosane | 0.280 | 0.248 | 88 | 0.270 | 0.229 | 85 | 60-130 |

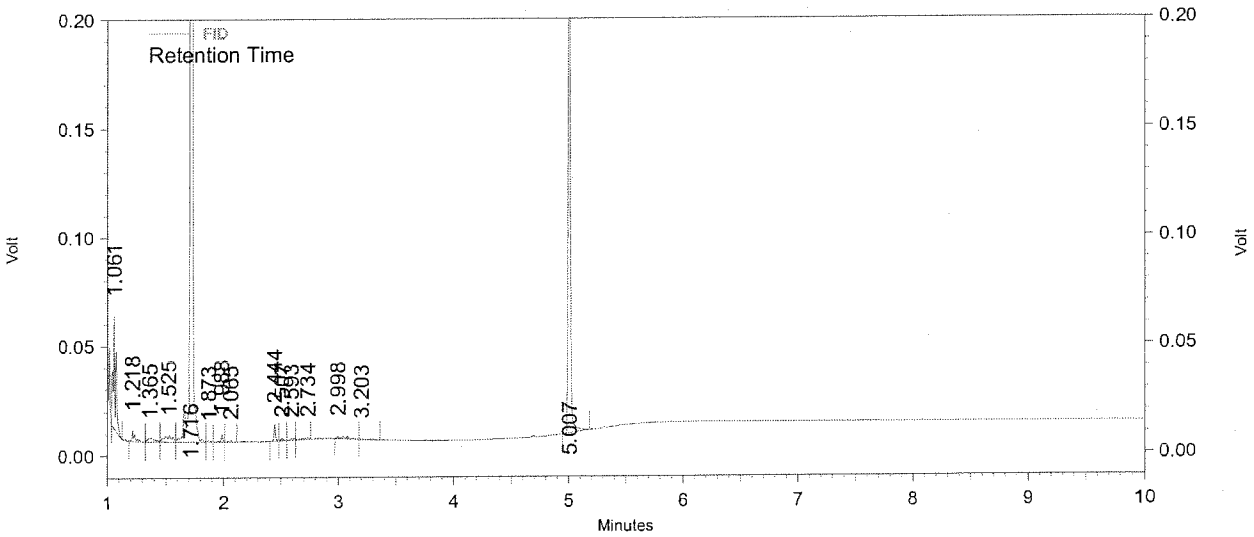
# QC DATA

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

**Inst. Name:** : GCT-105 (Offline)
**File** : D:\Projects\EZC331\Data\LJ29\LJ29055.dat
**Method** : D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met
**Sequence:** : D:\Projects\EZC331\Sequence\LJ29.seq
**Sample ID** : DSJ038WB
**Acquired** : 10/30/14 10:08:59
**Printed** : 10/30/14 15:10:53
**User** : KLinn

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.716 | 1272575 | 17891.93900 | 71.126 |
| HEXACOSANE | 5.007 | 383183 | 25061.64131 | 15.290 |
| DIESEL(TOTAL) | | 59870 | 33399.78271 | 1.793 |
| DIESEL(C10-C24) | | 26855 | 32585.09943 | 0.824 |
| M.OIL(C24-C36) | | 0 | 20980.20150 | 0.000 |
| Totals | | 1742483 | | 89.032 |



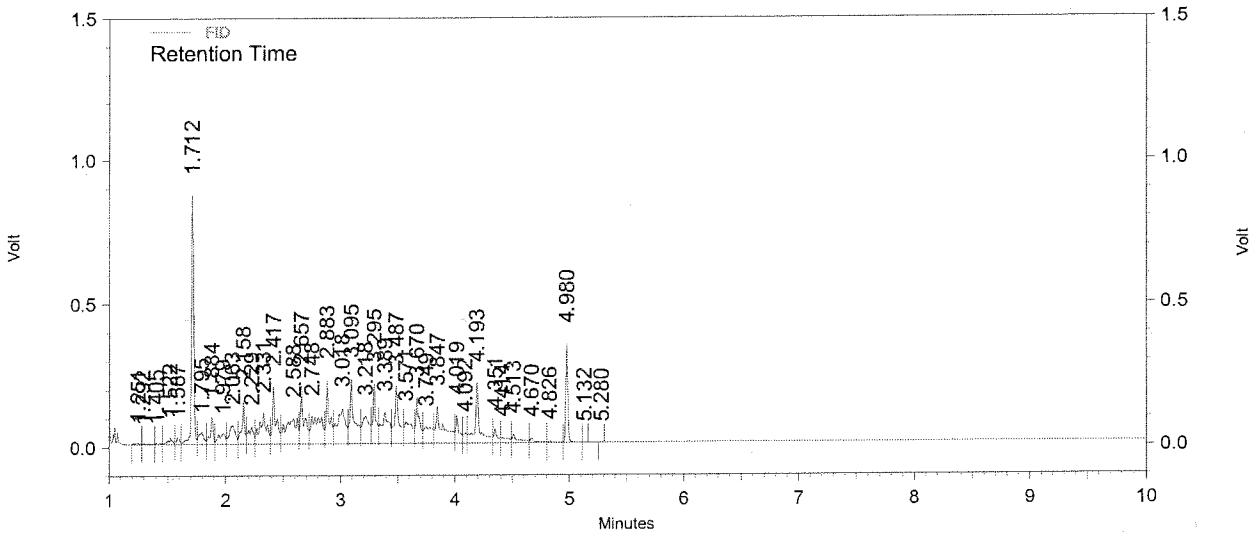

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29056.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: DSJ038WL** |
| **Acquired** | **: 10/30/14 10:25:54** |
| **Printed** | **: 10/30/14 15:12:38** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.712 | 1215417 | 17891.93900 | 67.931 |
| HEXACOSANE | 4.980 | 433815 | 25061.64131 | 17.310 |
| DIESEL(TOTAL) | | 10257334 | 33399.78271 | 307.108 |
| DIESEL(C10-C24) | | 9786349 | 32585.09943 | 300.332 |
| M.OIL(C24-C36) | | 17749 | 20980.20150 | 0.846 |
| Totals | | 21710664 | | 693.527 |



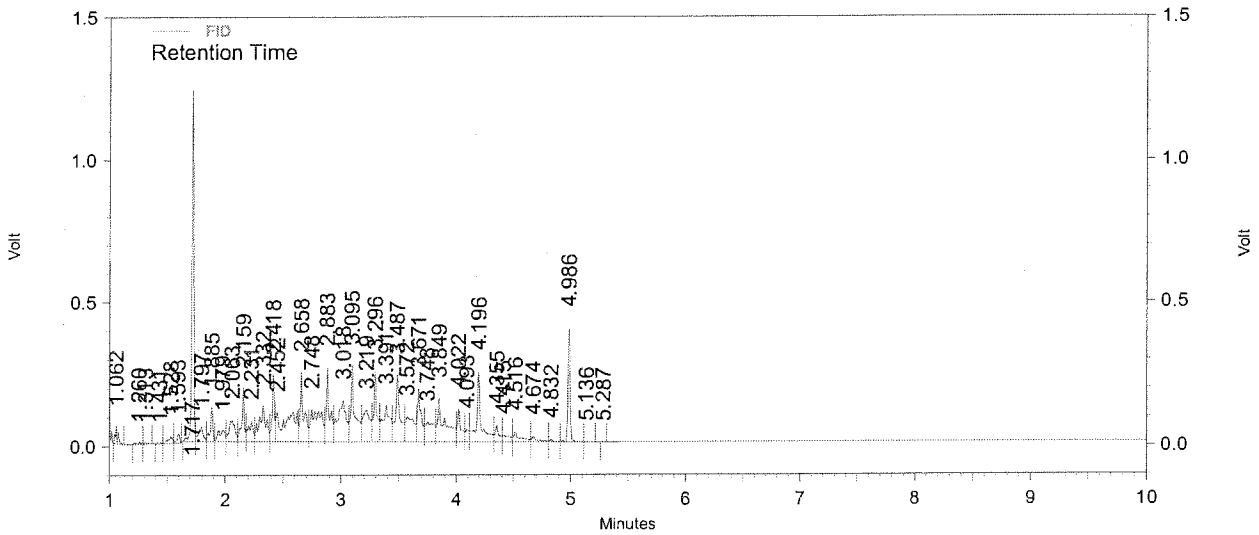

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29057.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: DSJ038WC** |
| **Acquired** | **: 10/30/14 10:42:47** |
| **Printed** | **: 10/30/14 15:13:25** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.717 | 1418325 | 17891.93900 | 79.272 |
| HEXACOSANE | 4.986 | 503990 | 25061.64131 | 20.110 |
| DIESEL(TOTAL) | | 11626330 | 33399.78271 | 348.096 |
| DIESEL(C10-C24) | | 11133554 | 32585.09943 | 341.676 |
| M.OIL(C24-C36) | | 19838 | 20980.20150 | 0.946 |
| Totals | | 24702037 | | 790.100 |



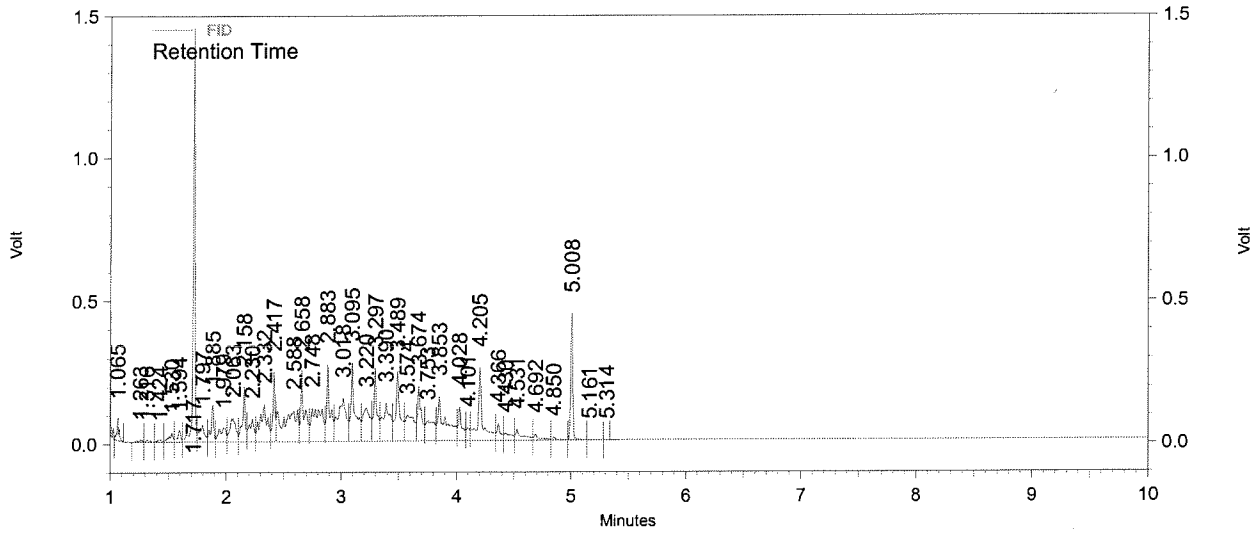

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29068.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: 14J144-01M** |
| **Acquired** | **: 10/30/14 13:49:38** |
| **Printed** | **: 10/30/14 15:17:29** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.717 | 1556466 | 17891.93900 | 86.993 |
| HEXACOSANE | 5.008 | 554276 | 25061.64131 | 22.117 |
| DIESEL(TOTAL) | | 12785452 | 33399.78271 | 382.800 |
| DIESEL(C10-C24) | | 12105571 | 32585.09943 | 371.506 |
| M.OIL(C24-C36) | | 30693 | 20980.20150 | 1.463 |
| Totals | | 27032458 | | 864.879 |



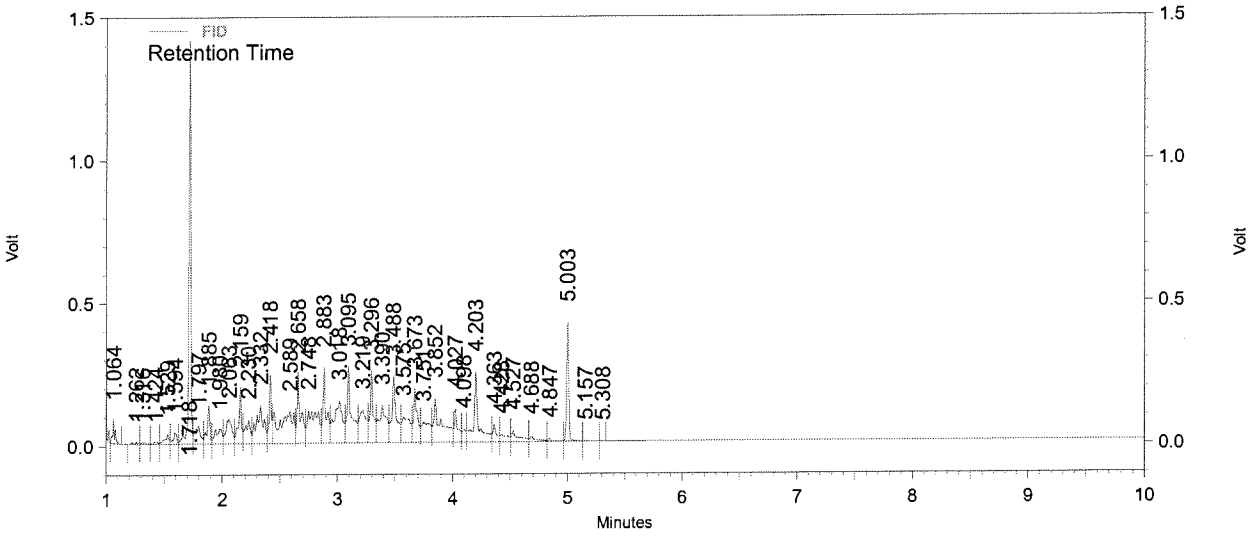

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29069.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: 14J144-01S** |
| **Acquired** | **: 10/30/14 14:06:40** |
| **Printed** | **: 10/30/14 15:17:38** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.718 | 1611566 | 17891.93900 | 90.072 |
| HEXACOSANE | 5.003 | 530686 | 25061.64131 | 21.175 |
| DIESEL(TOTAL) | | 12679159 | 33399.78271 | 379.618 |
| DIESEL(C10-C24) | | 11968262 | 32585.09943 | 367.292 |
| M.OIL(C24-C36) | | 32880 | 20980.20150 | 1.567 |
| Totals | | 26822553 | | 859.725 |




**Software Version: Version 3.3.1**

# INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16029A 09/17/14 09:01
LFID & Datetime: LI16030A 09/17/14 09:19
LFID & Datetime: LI16031A 09/17/14 09:36
LFID & Datetime: LI16032A 09/17/14 09:53
LFID & Datetime: LI16033A 09/17/14 10:10
LFID & Datetime: LI16034A 09/17/14 10:27
LFID & Datetime: LI16035A 09/17/14 10:45
CONC UNIT: ppm

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 1.00X | 2.00X | 10.00X | 20.00X | 100.00X | 300.00X | 600.00X | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | 5.00 | 34501 | 36051 | 34544 | 34578 | 33031 | 30015 | 31078 | 33399.8 | 6.5 |
| DIESEL(C10-C24) | 5.00 | 34041 | 35236 | 33714 | 33778 | 32148 | 29089 | 30089 | 32585.1 | 6.9 |
| DIESEL(C10-C28) | 5.00 | 34041 | 35323 | 33752 | 33816 | 32216 | 29153 | 30172 | 32639.0 | 6.9 |
| DIESEL(C10-C25) | 5.00 | 34041 | 35262 | 33739 | 33805 | 32203 | 29127 | 30132 | 32615.5 | 6.9 |
| DIESEL(C9-C24) | 5.00 | 34501 | 35965 | 34209 | 34251 | 32643 | 29607 | 30625 | 33114.4 | 6.9 |
| DIESEL(C9-C25) | 5.00 | 34501 | 35990 | 34234 | 34278 | 32698 | 29645 | 30668 | 33144.9 | 6.9 |
| DIESEL(C10-C36) | 5.00 | 34041 | 35323 | 33781 | 33835 | 32223 | 29157 | 30182 | 32648.9 | 6.9 |
| DIESEL(C10-C40) | 5.00 | 34041 | 35323 | 33781 | 33835 | 32223 | 29157 | 30182 | 32648.9 | 6.9 |
| **SURROGATE** | **X** | **0.00X** | **1.00X** | **2.00X** | **3.00X** | **4.00X** | **5.00X** | **11.00X** | **MEAN** | **%RSD** |
| BROMOBENZENE | 20.00 | 0 | 17409 | 16798 | 16686 | 18433 | 19091 | 18934 | 17891.9 | 6.0 |
| HEXACOSANE | 5.00 | 0 | 25128 | 24649 | 24470 | 25467 | 24871 | 25786 | 25061.6 | 2.0 |

DSD5I16.MET

09/19/14

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16029A 09/17/14 09:01
LFID & Datetime: LI16030A 09/17/14 09:19
LFID & Datetime: LI16031A 09/17/14 09:36
LFID & Datetime: LI16032A 09/17/14 09:53
LFID & Datetime: LI16033A 09/17/14 10:10
LFID & Datetime: LI16034A 09/17/14 10:27
LFID & Datetime: LI16035A 09/17/14 10:45

| COMPOUND | RT OF STANDARDS (MIN) 1.0X | 2.0X | 10.0X | 20.0X | 100.0X | 300.0X | 600.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C24) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C28) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C25) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C9-C24) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C9-C25) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C40) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SURROGATE | 0.0X | 1.0X | 2.0X | 3.0X | 4.0X | 5.0X | 11.0X | RT | FROM | TO | WIDTH |
| BROMOBENZENE | 0.000 | 1.730 | 1.732 | 1.733 | 1.732 | 1.734 | 1.737 | 1.733 | 1.730 | 1.736 | 0.003 |
| HEXACOSANE | 0.000 | 5.018 | 5.037 | 5.056 | 5.076 | 5.088 | 5.102 | 5.063 | 5.015 | 5.111 | 0.048 |

DSD5I16.MET

AJ
09/19/14

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16037A 09/17/14 11:19
LFID & Datetime: LI16038A 09/17/14 11:37
LFID & Datetime: LI16039A 09/17/14 11:54
LFID & Datetime: LI16040A 09/17/14 12:11
LFID & Datetime: LI16041A 09/17/14 12:28
LFID & Datetime: LI16042A 09/17/14 12:45
CONC UNIT: ppm

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 2.00X | 10.00X | 20.00X | 100.00X | 300.00X | 600.00X | MEAN | %RSD | |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | 5.00 | 36105 | 33167 | 33441 | 32566 | 30501 | 28904 | 32447.4 | 7.7 | ✓ |
| M.OIL(C18-C36) | 5.00 | 25340 | 25940 | 25892 | 24946 | 23441 | 21203 | 24460.1 | 7.5 | ✓ |
| M.OIL(C24-C36) | 5.00 | 22686 | 22554 | 22251 | 21092 | 19659 | 17638 | 20980.2 | 9.5 | ✓ |
| M.OIL(C24-C40) | 5.00 | 22686 | 22554 | 22251 | 21280 | 19659 | 17980 | 21068.4 | 9.0 | ✓ |

DSD5I16.MET

AS
09/19/14

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LI16037A 09/17/14 11:19
LFID & Datetime: LI16038A 09/17/14 11:37
LFID & Datetime: LI16039A 09/17/14 11:54
LFID & Datetime: LI16040A 09/17/14 12:11
LFID & Datetime: LI16041A 09/17/14 12:28
LFID & Datetime: LI16042A 09/17/14 12:45

| COMPOUND | RT OF STANDARDS (MIN) | | | | | | MEAN | RT WINDOW | | RTWINDOW |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2.0X | 10.0X | 20.0X | 100.0X | 300.0X | 600.0X | RT | FROM | TO | WIDTH |
| JP5(C8-C18) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C18-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C24-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C24-C40) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

DSD5I16.MET

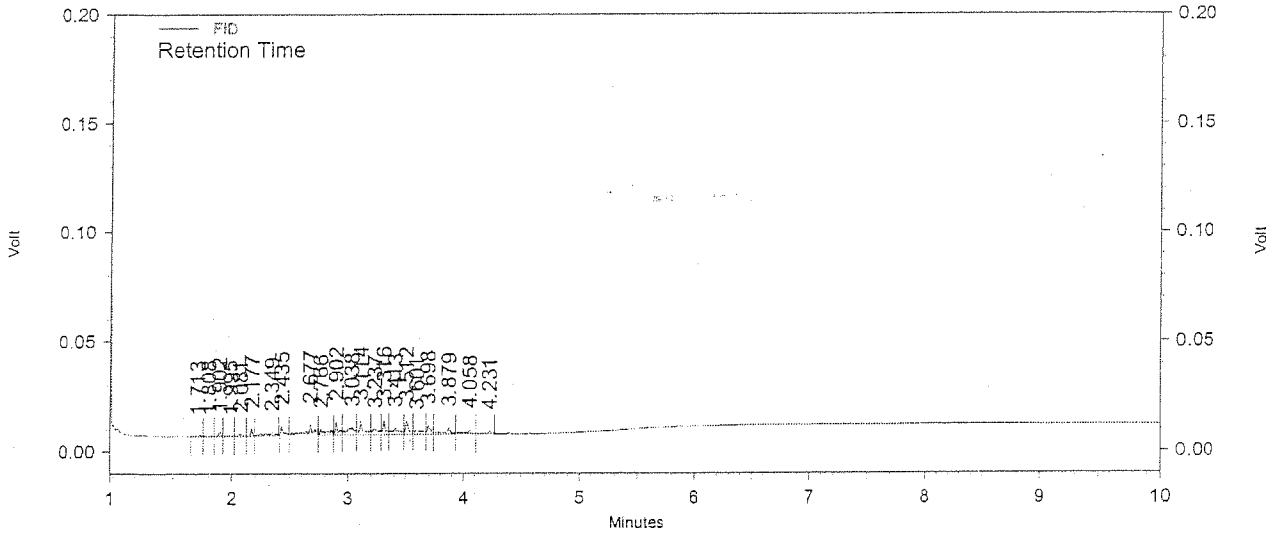
AA
09/19/14

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16029.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1601 DSL 5PPM |
| Acquired | : 09/17/14 09:01:57 |
| Printed | : 09/17/14 16:55:46 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| DIESEL(TOTAL) | | 172506 ✓ | 33399.78271 | 5.000 CAL |
| DIESEL(C10-C24) | | 170205 ✓ | 32585.09943 | 5.000 CAL |
| DIESEL(C10-C28) | | 170205 ✓ | 32639.02829 | 5.000 CAL |
| DIESEL(C10-C25) | | 170205 ✓ | 32615.51857 | 5.000 CAL |
| DIESEL(C9-C24) | | 172506 ✓ | 33114.42838 | 5.000 CAL |
| DIESEL(C9-C25) | | 172506 ✓ | 33144.84752 | 5.000 CAL |
| DIESEL(C10-C36) | | 170205 ✓ | 32648.86105 | 5.000 CAL |
| DIESEL(C10-C40) | | 170205 ✓ | 32648.86105 | 5.000 CAL |
| Totals | | 1368543 | | 40.000 CAL |




DS 09/19/14

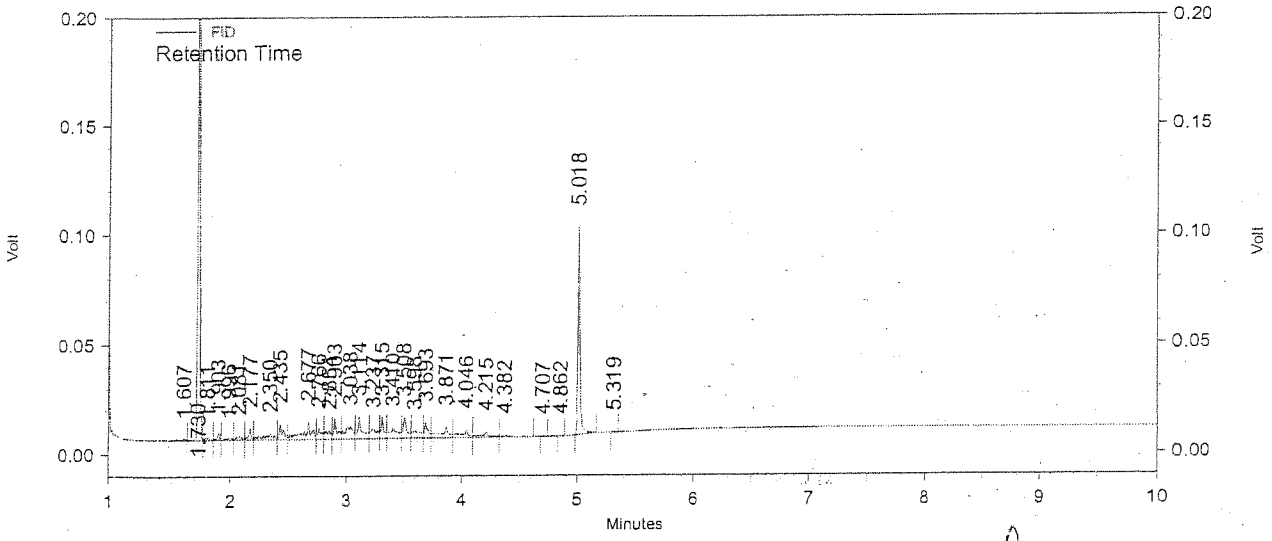
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : GCT-105 (Offline)
File : D:\Projects\EZC331\Data\LI16\LI16030.dat
Method : D:\Projects\EZC331\Method\DSD5I16.met
Sequence: : D:\Projects\EZC331\Sequence\LI16.seq
Sample ID : DSD5I1602 DSL 10/20/5PPM
Acquired : 09/17/14 09:19:04
Printed : 09/17/14 16:56:22
User : KLinn

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.730 | 348178 | 17891.93900 | 20.000 CAL |
| HEXACOSANE | 5.018 | 125638 | 25061.64131 | 5.000 CAL |
| DIESEL(TOTAL) | | 360512 | 33399.78271 | 10.000 CAL |
| DIESEL(C10-C24) | | 352364 | 32585.09943 | 10.000 CAL |
| DIESEL(C10-C28) | | 353230 | 32639.02829 | 10.000 CAL |
| DIESEL(C10-C25) | | 352618 | 32615.51857 | 10.000 CAL |
| DIESEL(C9-C24) | | 359646 | 33114.42838 | 10.000 CAL |
| DIESEL(C9-C25) | | 359900 | 33144.84752 | 10.000 CAL |
| DIESEL(C10-C36) | | 353230 | 32648.86105 | 10.000 CAL |
| DIESEL(C10-C40) | | 353230 | 32648.86105 | 10.000 CAL |
| Totals | | 3318546 | | 105.000 CAL |




RS 09/19/14

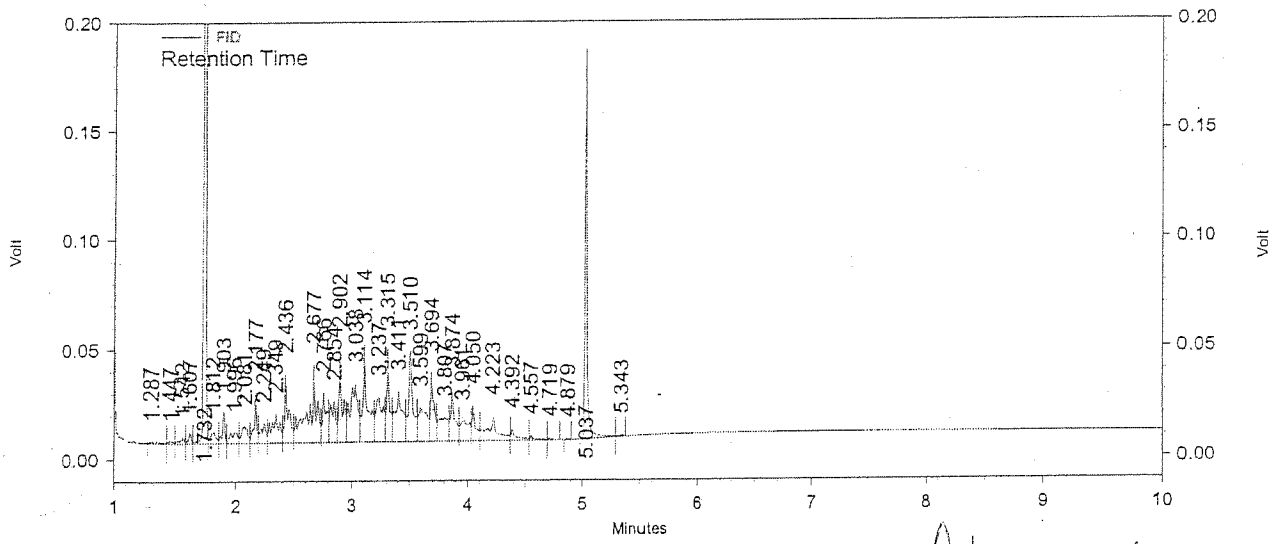
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16031.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1603 DSL 50/40/10PPM |
| Acquired | : 09/17/14 09:36:14 |
| Printed | : 09/17/14 16:58:34 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.732 | 671920 | 17891.93900 | 40.000 CAL |
| HEXACOSANE | 5.037 | 246485 | 25061.64131 | 10.000 CAL |
| DIESEL(TOTAL) | | 1727179 | 33399.78271 | 50.000 CAL |
| DIESEL(C10-C24) | | 1685709 | 32585.09943 | 50.000 CAL |
| DIESEL(C10-C28) | | 1687596 | 32639.02829 | 50.000 CAL |
| DIESEL(C10-C25) | | 1686967 | 32615.51857 | 50.000 CAL |
| DIESEL(C9-C24) | | 1710453 | 33114.42838 | 50.000 CAL |
| DIESEL(C9-C25) | | 1711711 | 33144.84752 | 50.000 CAL |
| DIESEL(C10-C36) | | 1689059 | 32648.86105 | 50.000 CAL |
| DIESEL(C10-C40) | | 1689059 | 32648.86105 | 50.000 CAL |
| Totals | | 14506138 | | 450.000 CAL |




AJ 09/19/14

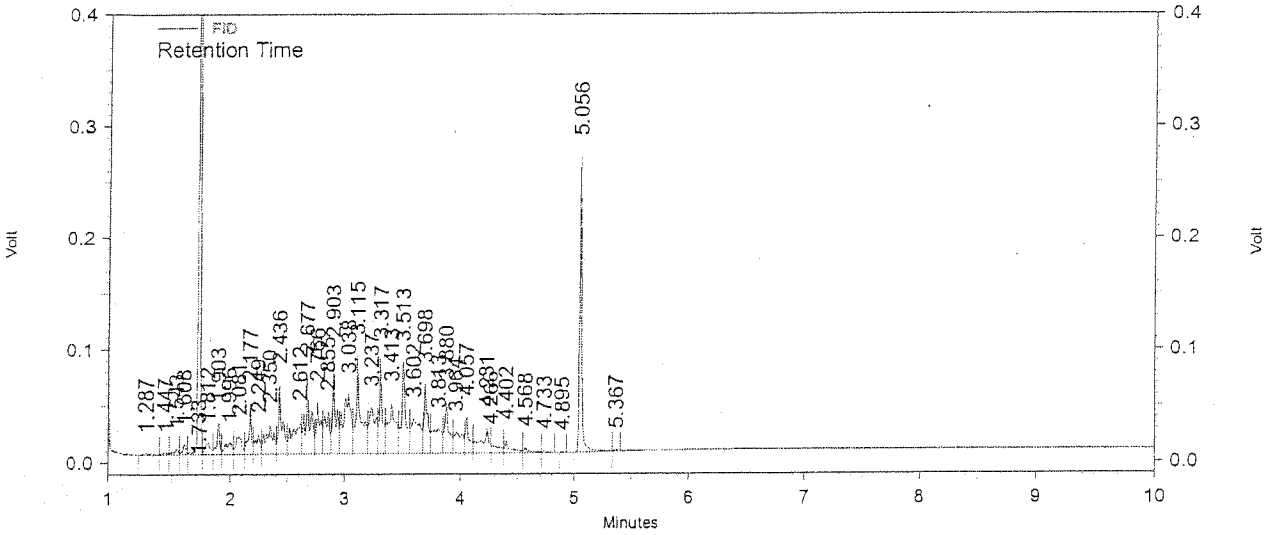
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16032.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1604 DSL 100/60/15PPM |
| Acquired | : 09/17/14 09:53:33 |
| Printed | : 09/17/14 16:58:44 |
| User | : KLinn |

FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.733 | 1001186 | 17891.93900 | 60.000 CAL |
| HEXACOSANE | 5.056 | 367043 | 25061.64131 | 15.000 CAL |
| DIESEL(TOTAL) | | 3457812 | 33399.78271 | 100.000 CAL |
| DIESEL(C10-C24) | | 3377793 | 32585.09943 | 100.000 CAL |
| DIESEL(C10-C28) | | 3381578 | 32639.02829 | 100.000 CAL |
| DIESEL(C10-C25) | | 3380463 | 32615.51857 | 100.000 CAL |
| DIESEL(C9-C24) | | 3425081 | 33114.42838 | 100.000 CAL |
| DIESEL(C9-C25) | | 3427751 | 33144.84752 | 100.000 CAL |
| DIESEL(C10-C36) | | 3383510 | 32648.86105 | 100.000 CAL |
| DIESEL(C10-C40) | | 3383510 | 32648.86105 | 100.000 CAL |
| Totals | | 28585727 | | 875.000 CAL |

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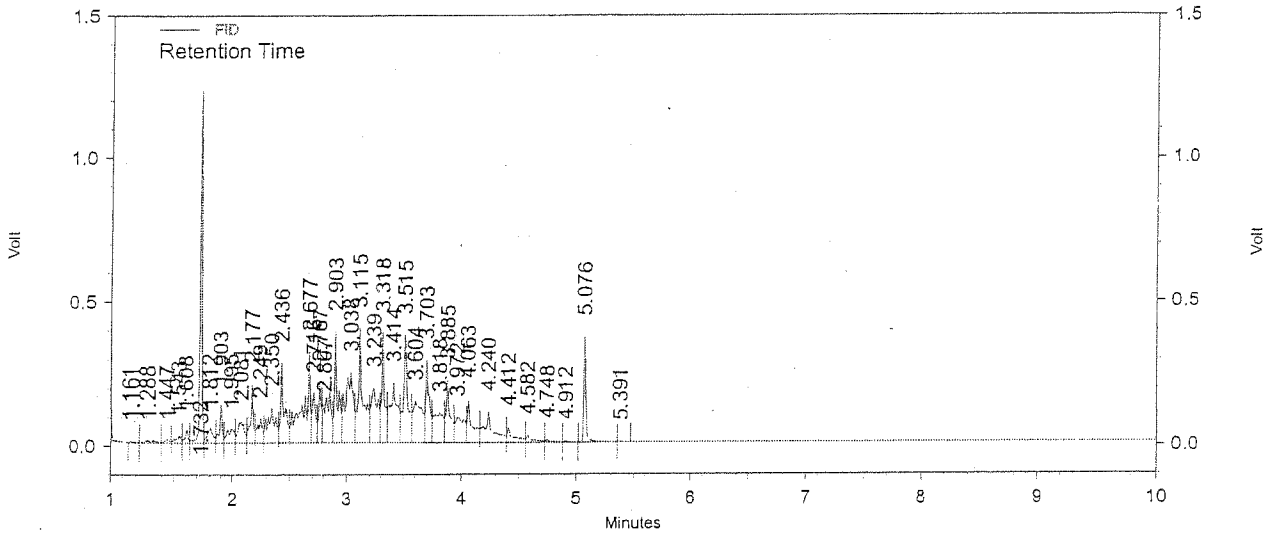
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16033.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1605 DSL 500/80/20PPM |
| Acquired | : 09/17/14 10:10:43 |
| Printed | : 09/17/14 16:58:54 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.732 | 1474677 | 17891.93900 | 80.000 CAL |
| HEXACOSANE | 5.076 | 509336 | 25061.64131 | 20.000 CAL |
| DIESEL(TOTAL) | | 16515495 | 33399.78271 | 500.000 CAL |
| DIESEL(C10-C24) | | 16073956 | 32585.09943 | 500.000 CAL |
| DIESEL(C10-C28) | | 16108086 | 32639.02829 | 500.000 CAL |
| DIESEL(C10-C25) | | 16101262 | 32615.51857 | 500.000 CAL |
| DIESEL(C9-C24) | | 16321629 | 33114.42838 | 500.000 CAL |
| DIESEL(C9-C25) | | 16348935 | 33144.84752 | 500.000 CAL |
| DIESEL(C10-C36) | | 16111304 | 32648.86105 | 500.000 CAL |
| DIESEL(C10-C40) | | 16111304 | 32648.86105 | 500.000 CAL |
| Totals | | 131675984 | | 4100.000 CAL |

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09/19/14

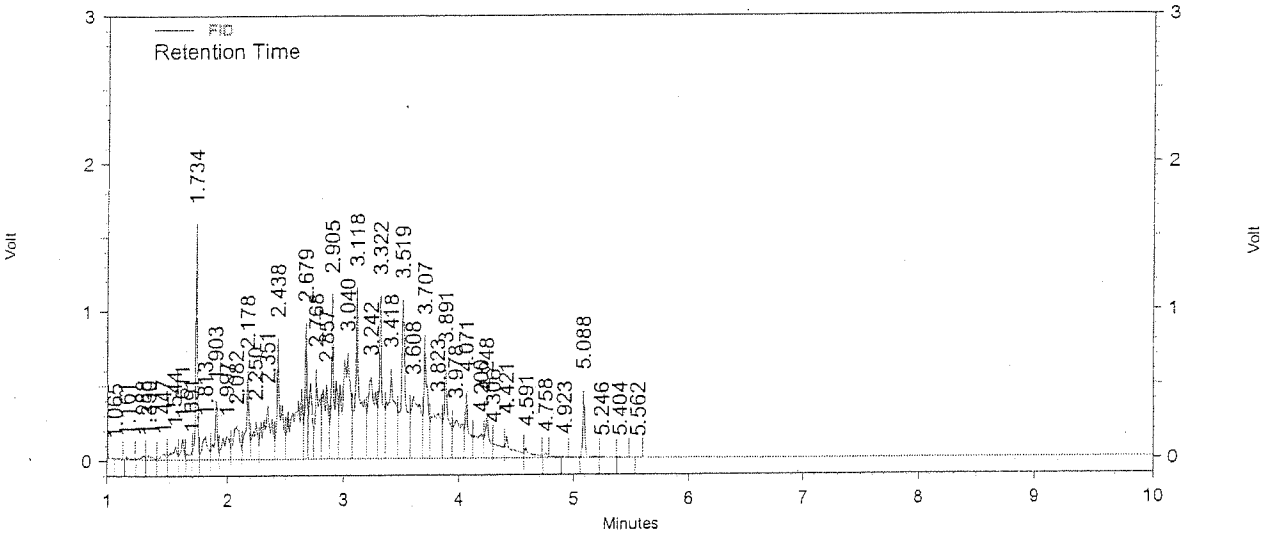
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16034.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1606 DSL 1500/100/25PPM |
| Acquired | : 09/17/14 10:27:59 |
| Printed | : 09/17/14 16:59:06 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.734 | 1909057 | 17891.93900 | 100.000 CAL |
| HEXACOSANE | 5.088 | 621784 | 25061.64131 | 25.000 CAL |
| DIESEL(TOTAL) | | 45022638 | 33399.78271 | 1500.000 CAL |
| DIESEL(C10-C24) | | 43633851 | 32585.09943 | 1500.000 CAL |
| DIESEL(C10-C28) | | 43729901 | 32639.02829 | 1500.000 CAL |
| DIESEL(C10-C25) | | 43690883 | 32615.51857 | 1500.000 CAL |
| DIESEL(C9-C24) | | 44410692 | 33114.42838 | 1500.000 CAL |
| DIESEL(C9-C25) | | 44467724 | 33144.84752 | 1500.000 CAL |
| DIESEL(C10-C36) | | 43735512 | 32648.86105 | 1500.000 CAL |
| DIESEL(C10-C40) | | 43735512 | 32648.86105 | 1500.000 CAL |
| Totals | | 354957554 | | 12125.000 CAL |

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09/19/14

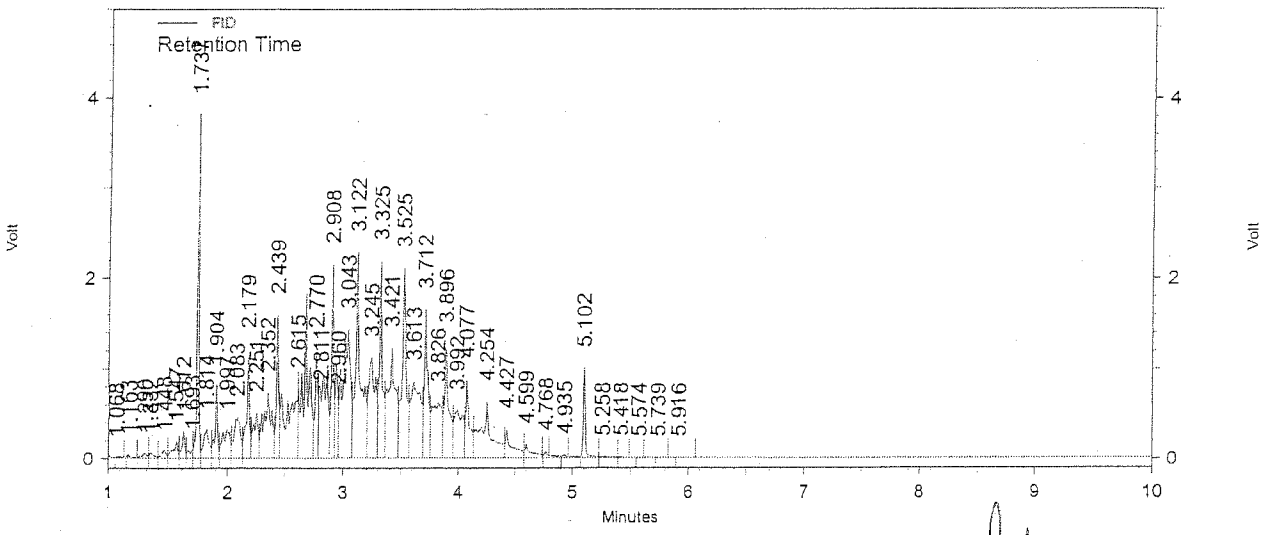
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16035.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1607 DSL 3000/220/55PPM |
| Acquired | : 09/17/14 10:45:13 |
| Printed | : 09/17/14 16:59:16 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.737 | 4165539 | 17891.93900 | 220.000 CAL |
| HEXACOSANE | 5.102 | 1418233 | 25061.64131 | 55.000 CAL |
| DIESEL(TOTAL) | | 93234891 | 33399.78271 | 3000.000 CAL |
| DIESEL(C10-C24) | | 90267120 | 32585.09943 | 3000.000 CAL |
| DIESEL(C10-C28) | | 90516176 | 32639.02829 | 3000.000 CAL |
| DIESEL(C10-C25) | | 90396242 | 32615.51857 | 3000.000 CAL |
| DIESEL(C9-C24) | | 91874828 | 33114.42838 | 3000.000 CAL |
| DIESEL(C9-C25) | | 92003950 | 33144.84752 | 3000.000 CAL |
| DIESEL(C10-C36) | | 90546394 | 32648.86105 | 3000.000 CAL |
| DIESEL(C10-C40) | | 90546394 | 32648.86105 | 3000.000 CAL |
| Totals | | 734969767 | | 24275.000 CAL |




RS
09/19/14

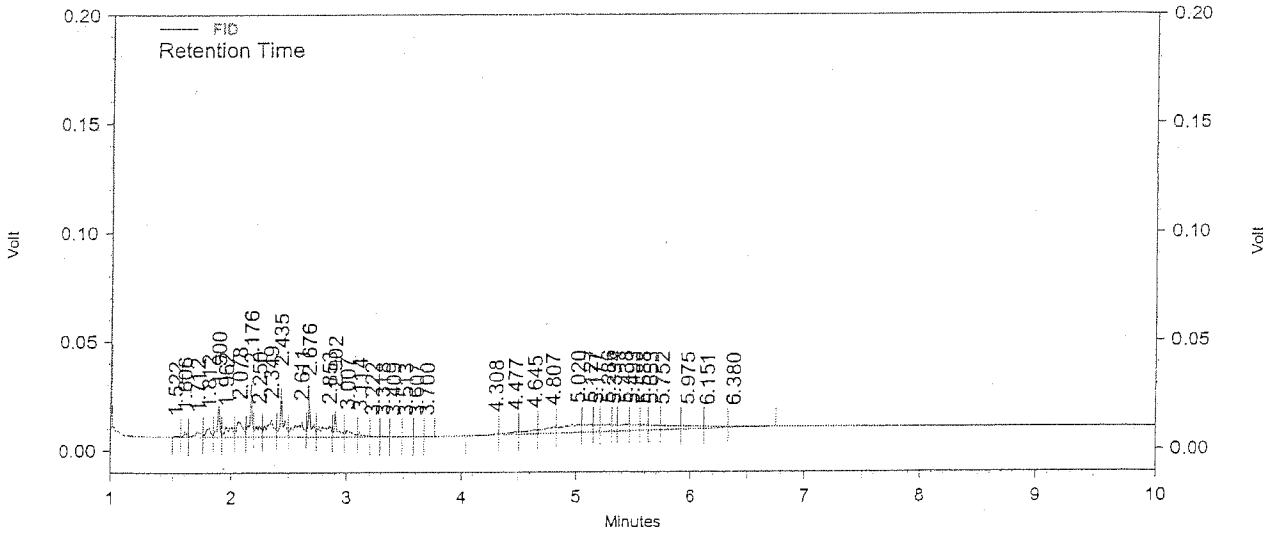
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16037.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1608 JP5/5W30 10/10PPM |
| Acquired | : 09/17/14 11:19:48 |
| Printed | : 09/17/14 16:46:23 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 361054 | 32447.41478 | 10.000 CAL |
| M.OIL(C18-C36) | | 253397 | 24460.06839 | 10.000 CAL |
| M.OIL(C24-C36) | | 226861 | 20980.20150 | 10.000 CAL |
| M.OIL(C24-C40) | | 226861 | 21068.39522 | 10.000 CAL |
| Totals | | 1068173 | | 40.000 CAL |

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09/19/14

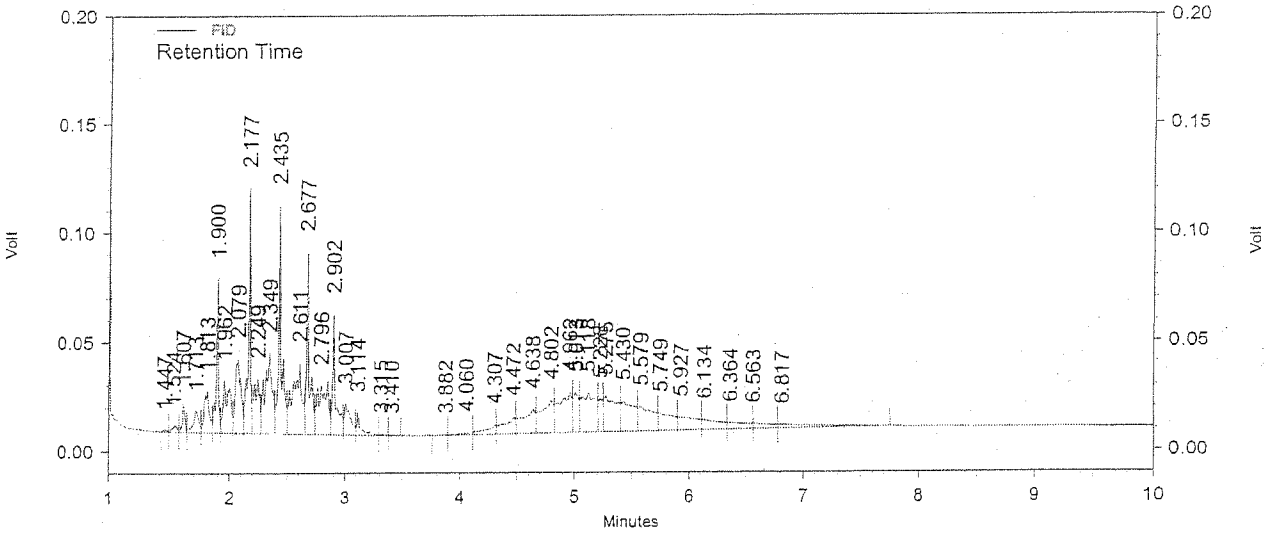
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16038.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1609 JP5/5W30 50/50PPM |
| Acquired | : 09/17/14 11:37:00 |
| Printed | : 09/17/14 16:46:31 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 1658372 | 32447.41478 | 50.000 CAL |
| M.OIL(C18-C36) | | 1296976 | 24460.06839 | 50.000 CAL |
| M.OIL(C24-C36) | | 1127709 | 20980.20150 | 50.000 CAL |
| M.OIL(C24-C40) | | 1127709 | 21068.39522 | 50.000 CAL |
| Totals | | 5210766 | | 200.000 CAL |




QA
09/19/14

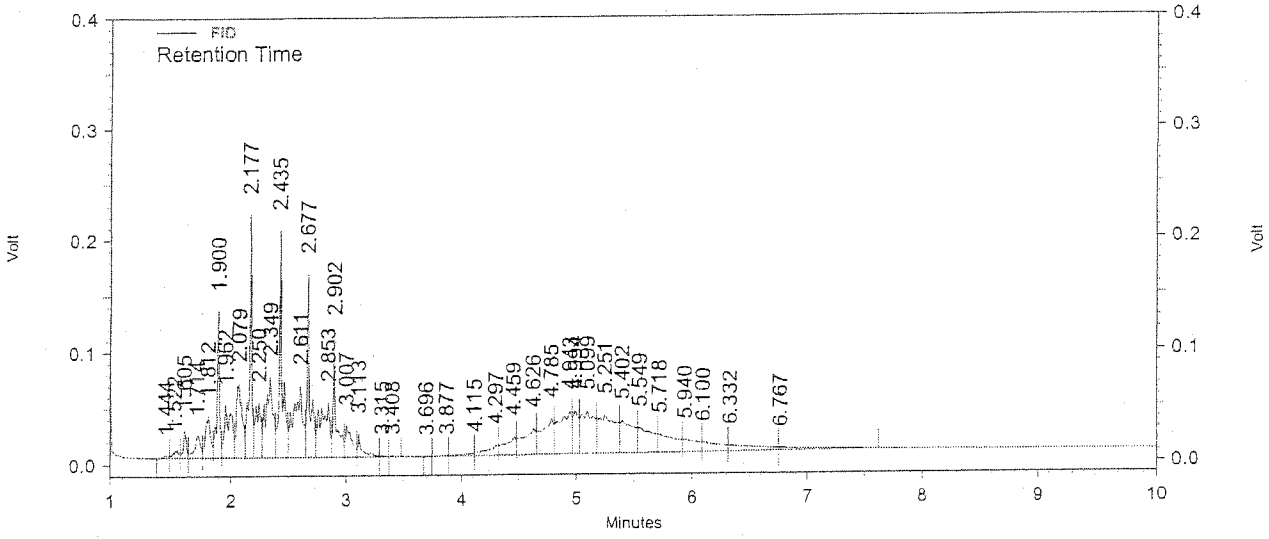
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16039.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1610 JP5/5W30 100/100PPM |
| Acquired | : 09/17/14 11:54:09 |
| Printed | : 09/17/14 16:46:42 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 3344126 | 32447.41478 | 100.000 CAL |
| M.OIL(C18-C36) | | 2589166 | 24460.06839 | 100.000 CAL |
| M.OIL(C24-C36) | | 2225133 | 20980.20150 | 100.000 CAL |
| M.OIL(C24-C40) | | 2225133 | 21068.39522 | 100.000 CAL |
| Totals | | 10383558 | | 400.000 CAL |




RS 09/19/14

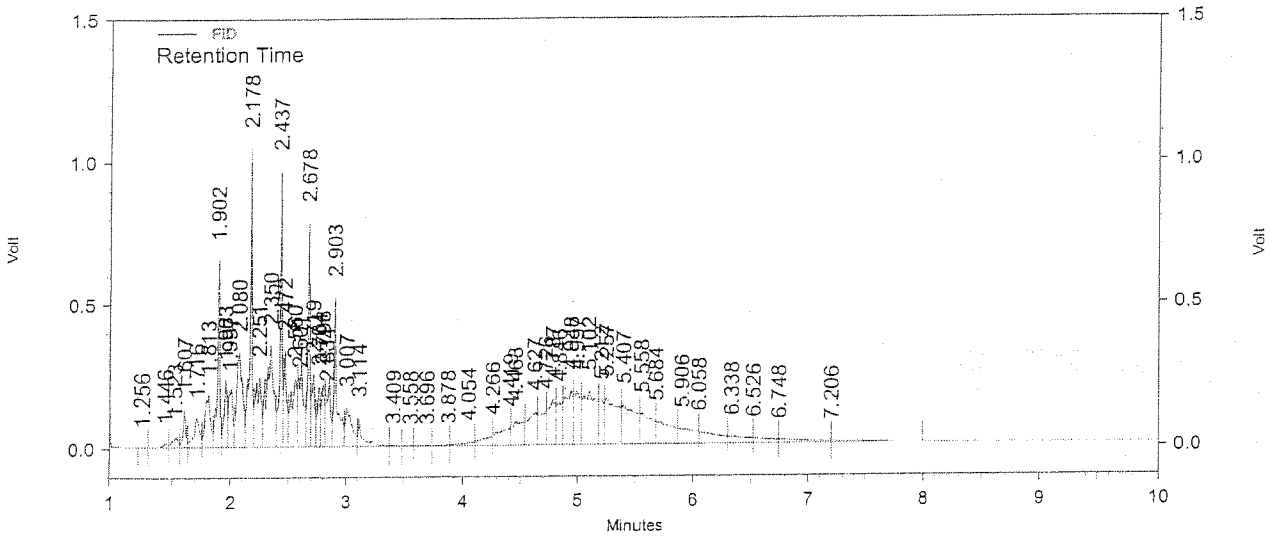
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16040.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1611 JP5/5W30 500/500PPM |
| Acquired | : 09/17/14 12:11:26 |
| Printed | : 09/17/14 16:46:53 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 16282801 | 32447.41478 | 500.000 CAL |
| M.OIL(C18-C36) | | 12472992 | 24460.06839 | 500.000 CAL |
| M.OIL(C24-C36) | | 10546163 | 20980.20150 | 500.000 CAL |
| M.OIL(C24-C40) | | 10640078 | 21068.39522 | 500.000 CAL |
| Totals | | 49942034 | | 2000.000 CAL |

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09/19/14

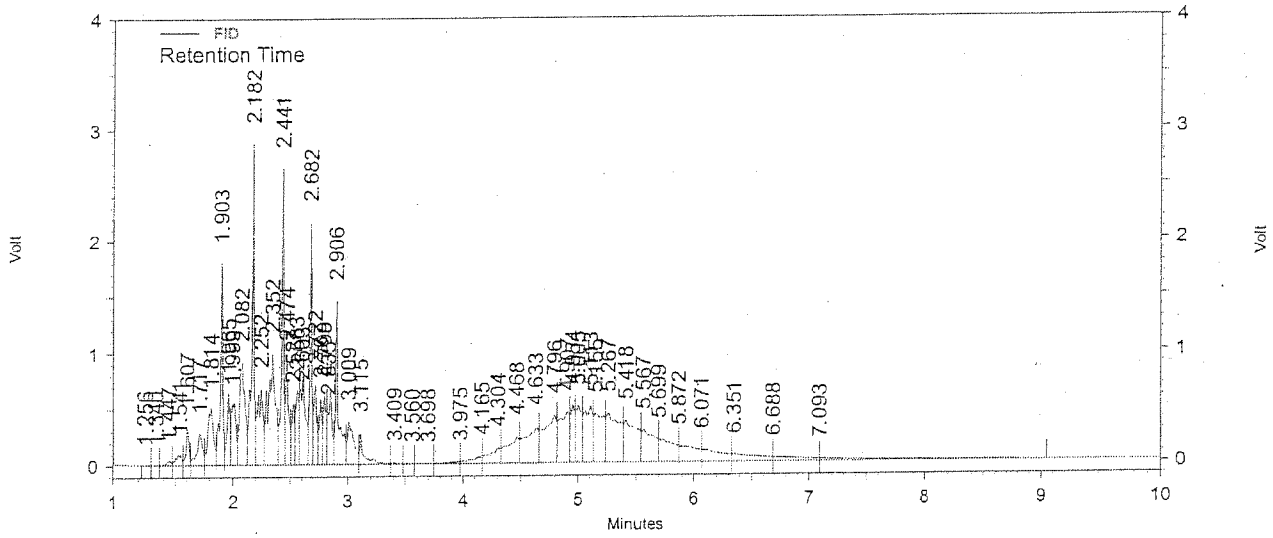
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16041.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1612 JP5/5W30 1500/1500PPM |
| Acquired | : 09/17/14 12:28:38 |
| Printed | : 09/17/14 16:47:15 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 45751227 | 32447.41478 | 1500.000 CAL |
| M.OIL(C18-C36) | | 35161093 | 24460.06839 | 1500.000 CAL |
| M.OIL(C24-C36) | | 29488420 | 20980.20150 | 1500.000 CAL |
| M.OIL(C24-C40) | | 29488420 | 21068.39522 | 1500.000 CAL |
| Totals | | 139889160 | | 6000.000 CAL |




09/19/14

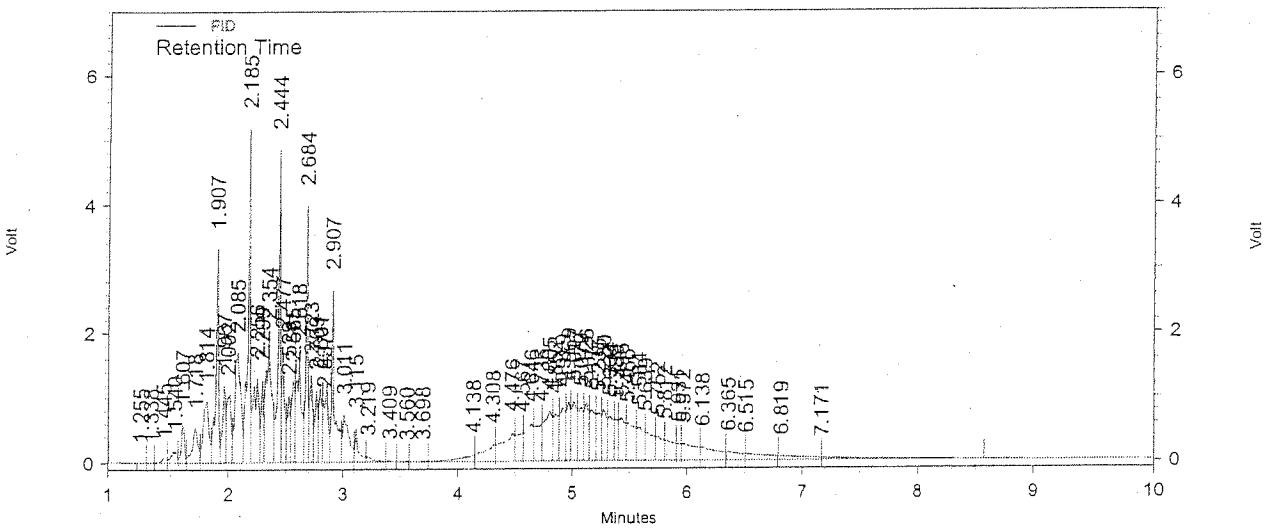
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16042.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DSD5I1613 JP5/5W30 3000/3000PPM |
| Acquired | : 09/17/14 12:45:43 |
| Printed | : 09/17/14 16:47:25 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 86711906 | 32447.41478 | 3000.000 CAL |
| M.OIL(C18-C36) | | 63608453 | 24460.06839 | 3000.000 CAL |
| M.OIL(C24-C36) | | 52914979 | 20980.20150 | 3000.000 CAL |
| M.OIL(C24-C40) | | 53938976 | 21068.39522 | 3000.000 CAL |
| Totals | | 257174314 | | 12000.000 CAL |

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09/19/14

Software Version: Version 3.3.1

# SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LI16036A 09/17/2014 11:02
CONC UNIT : ppm

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 14834662 | 444.15 | -11 | | 15 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 14111899 | 433.08 | -13 | | 15 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 14286046 | 437.70 | -12 | | 15 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 14228185 | 436.24 | -13 | | 15 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 14426067 | 435.64 | -13 | | 15 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 14542353 | 438.75 | -12 | | 15 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 14292159 | 437.75 | -12 | | 15 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 14292159 | 437.75 | -12 | | 15 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.732 | 1.729 | 1.735 | 80.0 | 17891.9 | 1491534 | 83.36 | 4 | | 15 |
| HEXACOSANE | 5.061 | 5.013 | 5.109 | 20.0 | 25061.6 | 541583 | 21.61 | 8 | | 15 |

DSD5I16.MET

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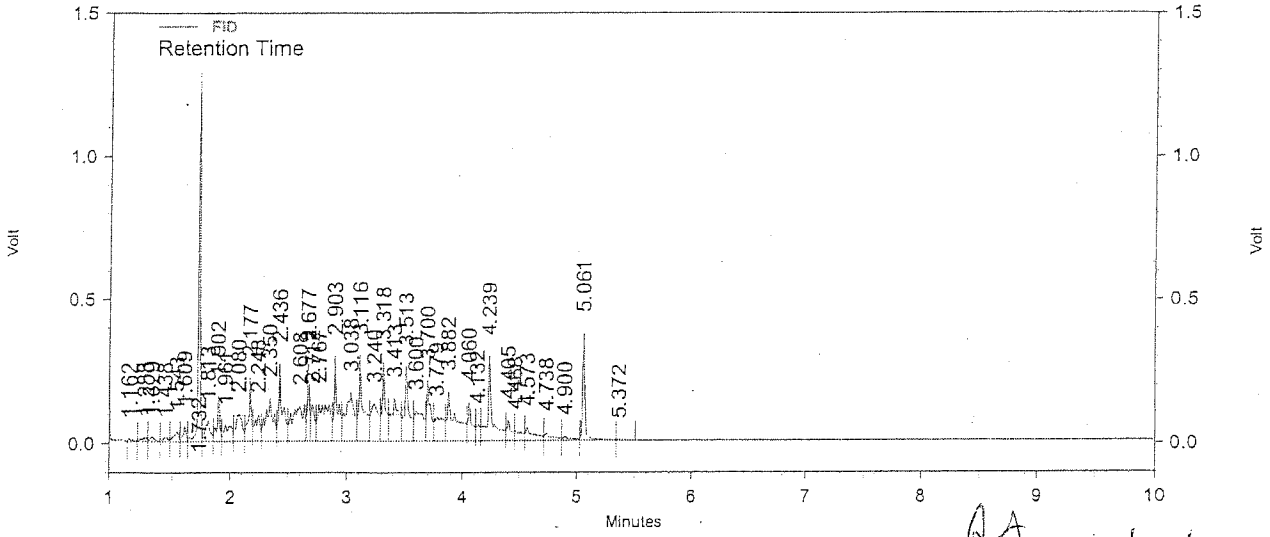
METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16036.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : IDSD5I1601 DSL 500/80/20PPM |
| Acquired | : 09/17/14 11:02:35 |
| Printed | : 09/17/14 16:49:55 |
| User | : KLinn |

FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.732 | 1491534 | 17891.93900 | 83.363 |
| HEXACOSANE | 5.061 | 541583 | 25061.64131 | 21.610 |
| DIESEL(TOTAL) | | 14834662 | 33399.78271 | 444.154 |
| DIESEL(C10-C24) | | 14111899 | 32585.09943 | 433.078 |
| DIESEL(C10-C28) | | 14286046 | 32639.02829 | 437.698 |
| DIESEL(C10-C25) | | 14228185 | 32615.51857 | 436.240 |
| DIESEL(C9-C24) | | 14426067 | 33114.42838 | 435.643 |
| DIESEL(C9-C25) | | 14542353 | 33144.84752 | 438.752 |
| DIESEL(C10-C36) | | 14292159 | 32648.86105 | 437.754 |
| DIESEL(C10-C40) | | 14292159 | 32648.86105 | 437.754 |
| Totals | | 117046647 | | 3606.046 |




AS 09/19/14

Software Version: Version 3.3.1

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LI16043A 09/17/2014 13:02
CONC UNIT : ppm

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 14412814 | 444.19 | -11 | | 15 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 10598661 | 433.30 | -13 | | 15 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 9003494 | 429.14 | -14 | | 15 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 9003494 | 427.35 | -15 | | 15 |

DSD5I16.MET

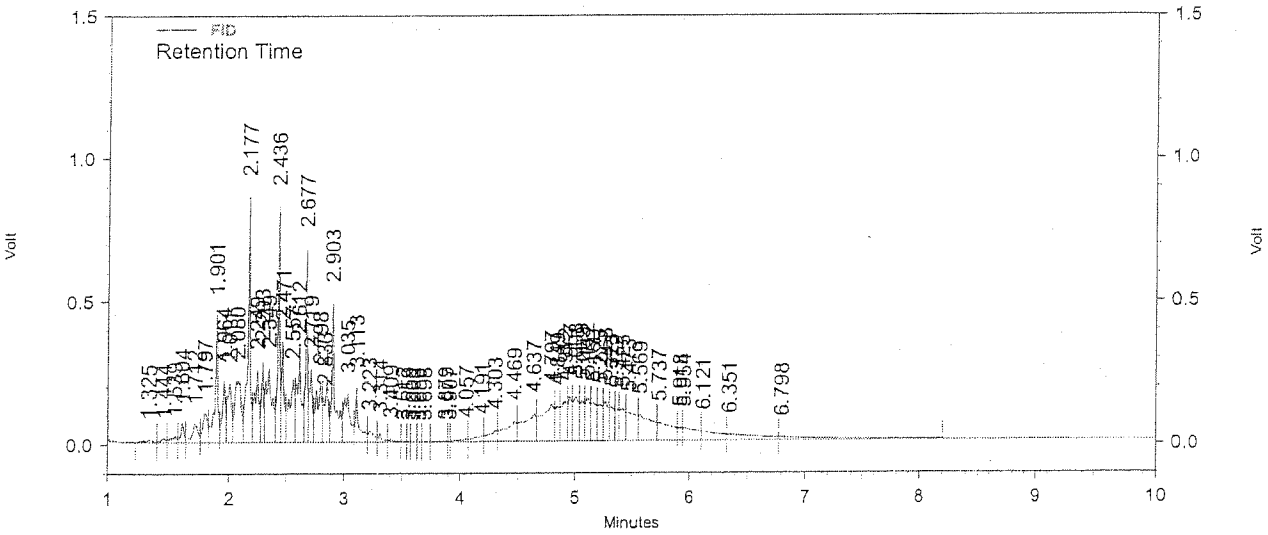
09/19/14

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16043.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : IDSD5I1602 JP5/5W30 500/500PPM |
| Acquired | : 09/17/14 13:02:52 |
| Printed | : 09/17/14 16:43:12 |
| User | : KLinn |

FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 14412814 | 32447.41478 | 444.190 |
| M.OIL(C18-C36) | | 10598661 | 24460.06839 | 433.305 |
| M.OIL(C24-C36) | | 9003494 | 20980.20150 | 429.142 |
| M.OIL(C24-C40) | | 9003494 | 21068.39522 | 427.346 |
| Totals | | 43018463 | | 1733.983 |




AS 09/19/14

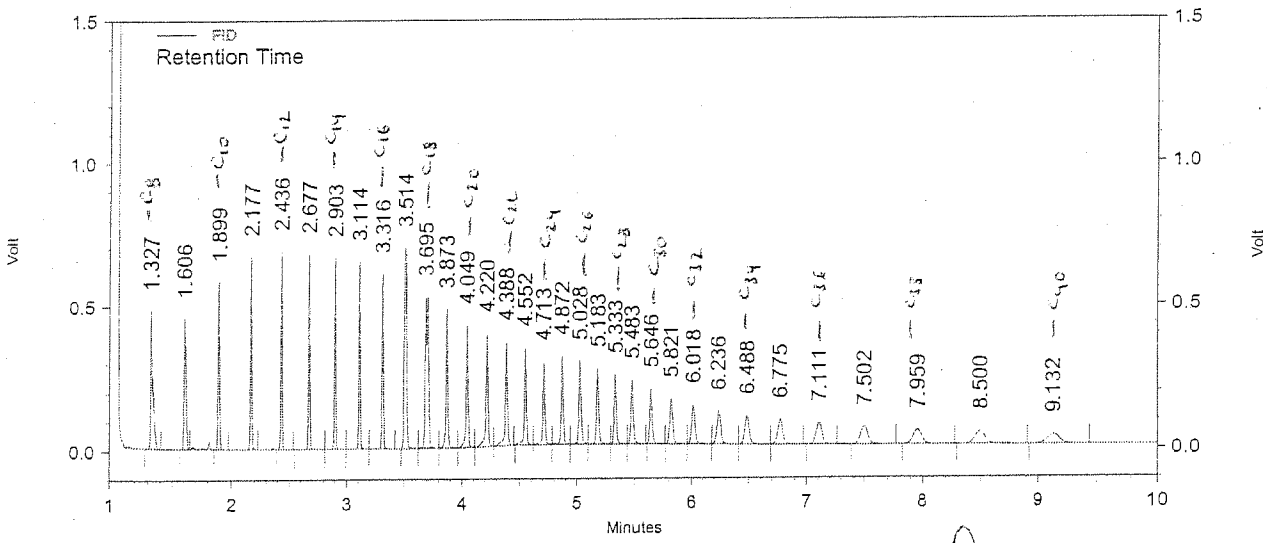
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16045.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : DRO(C8-C40 + C9-C39) |
| Acquired | : 09/17/14 13:37:11 |
| Printed | : 09/17/14 16:51:25 |
| User | : KLinn |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | | | | 0.000 BDL |
| HEXACOSANE | 5.028 | 379323 | 25061.64131 | 15.136 |
| DIESEL(TOTAL) | | 14182377 | 33399.78271 | 424.625 |
| DIESEL(C10-C24) | | 8587176 | 32585.09943 | 263.531 |
| DIESEL(C10-C28) | | 9335081 | 32639.02829 | 286.010 |
| DIESEL(C10-C25) | | 9335081 | 32615.51857 | 286.216 |
| DIESEL(C9-C24) | | 8587176 | 33114.42838 | 259.318 |
| DIESEL(C9-C25) | | 9335081 | 33144.84752 | 281.645 |
| DIESEL(C10-C36) | | 11961304 | 32648.86105 | 366.362 |
| DIESEL(C10-C40) | | 12986226 | 32648.86105 | 397.754 |
| Totals | | 84688825 | | 2580.597 |

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09/19/14

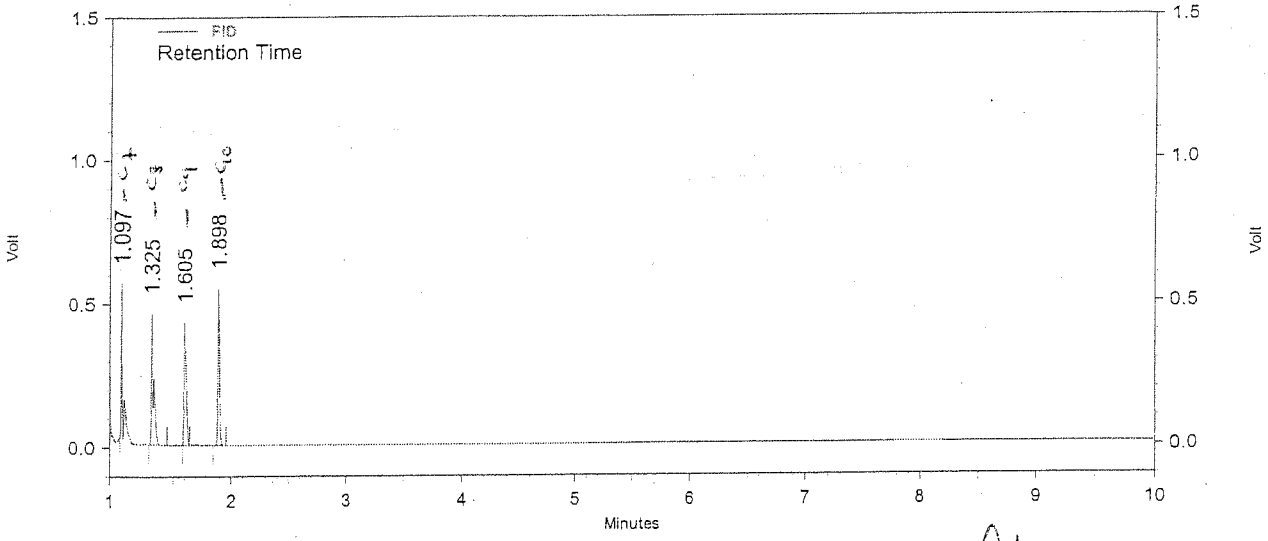
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LI16\LI16046.dat |
| Method | : D:\Projects\EZC331\Method\DSD5I16.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LI16.seq |
| Sample ID | : GRO(C6-C10) |
| Acquired | : 09/17/14 13:54:19 |
| Printed | : 09/17/14 16:51:45 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | | | | 0.000 BDL |
| HEXACOSANE | | | | 0.000 BDL |
| DIESEL(TOTAL) | | 1757412 | 33399.78271 | 52.617 |
| DIESEL(C10-C24) | | 0 | 32585.09943 | 0.000 |
| DIESEL(C10-C28) | | 0 | 32639.02829 | 0.000 |
| DIESEL(C10-C25) | | 0 | 32615.51857 | 0.000 |
| DIESEL(C9-C24) | | 591908 | 33114.42838 | 17.875 |
| DIESEL(C9-C25) | | 591908 | 33144.84752 | 17.858 |
| DIESEL(C10-C36) | | 0 | 32648.86105 | 0.000 |
| DIESEL(C10-C40) | | 0 | 32648.86105 | 0.000 |
| Totals | | 2941228 | | 88.350 |

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Software Version: Version 3.3.1

# DAILY CALIBRATIONS

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LJ29052A 10/30/2014 09:17
CONC UNIT : ppm

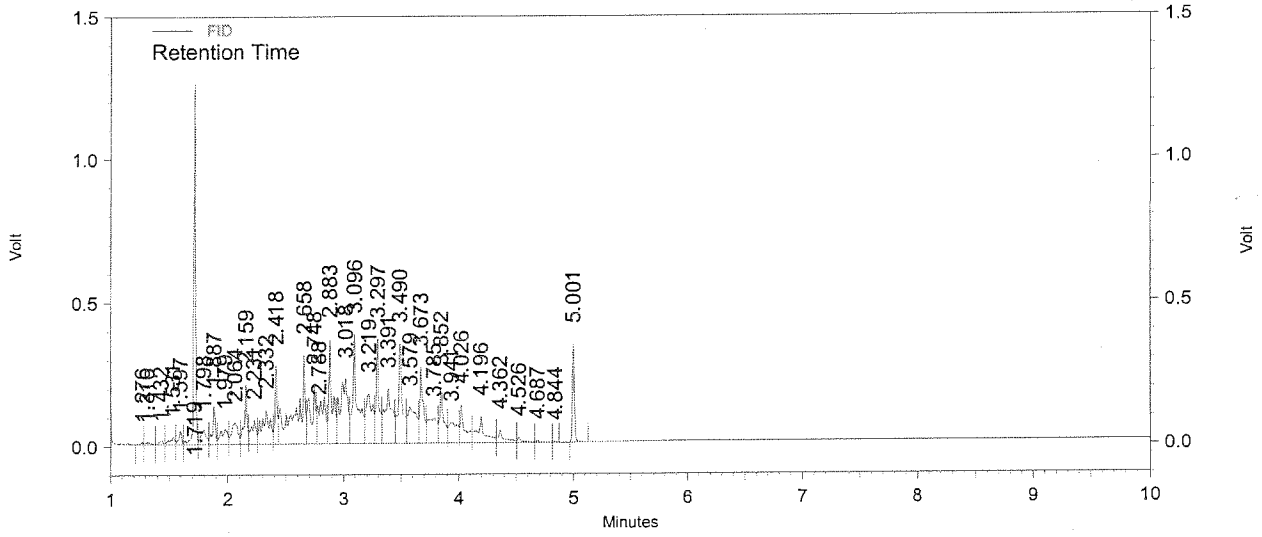
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 15089778 | 451.79 | -10 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 14452939 | 443.54 | -11 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 14456876 | 442.93 | -11 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 14456876 | 443.25 | -11 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 14843313 | 448.24 | -10 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 14847250 | 447.95 | -10 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 14456876 | 442.80 | -11 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 14456876 | 442.80 | -11 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.719 | 1.716 | 1.722 | 80.0 | 17891.9 | 1398915 | 78.19 | -2 | | 20 |
| HEXACOSANE | 5.001 | 4.953 | 5.049 | 20.0 | 25061.6 | 432189 | 17.25 | -14 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

**Inst. Name:** : GCT-105 (Offline)
**File** : D:\Projects\EZC331\Data\LJ29\LJ29052.dat
**Method** : D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met
**Sequence:** : D:\Projects\EZC331\Sequence\LJ29.seq
**Sample ID** : CDSD5I16377 DSL 500/80/20PPM
**Acquired** : 10/30/14 09:17:50
**Printed** : 10/30/14 15:53:41
**User** : KLinn

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.719 | 1398915 | 17891.93900 | 78.187 |
| HEXACOSANE | 5.001 | 432189 | 25061.64131 | 17.245 |
| DIESEL(TOTAL) | | 15089778 | 33399.78271 | 451.793 |
| DIESEL(C10-C24) | | 14452939 | 32585.09943 | 443.544 |
| DIESEL(C10-C28) | | 14456876 | 32639.02829 | 442.932 |
| DIESEL(C10-C25) | | 14456876 | 32615.51857 | 443.251 |
| DIESEL(C9-C24) | | 14843313 | 33114.42838 | 448.243 |
| DIESEL(C9-C25) | | 14847250 | 33144.84752 | 447.950 |
| DIESEL(C10-C36) | | 14456876 | 32648.86105 | 442.799 |
| DIESEL(C10-C40) | | 14456876 | 32648.86105 | 442.799 |
| Totals | | 118891888 | | 3658.744 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LJ29053A 10/30/2014 09:34
CONC UNIT : ppm

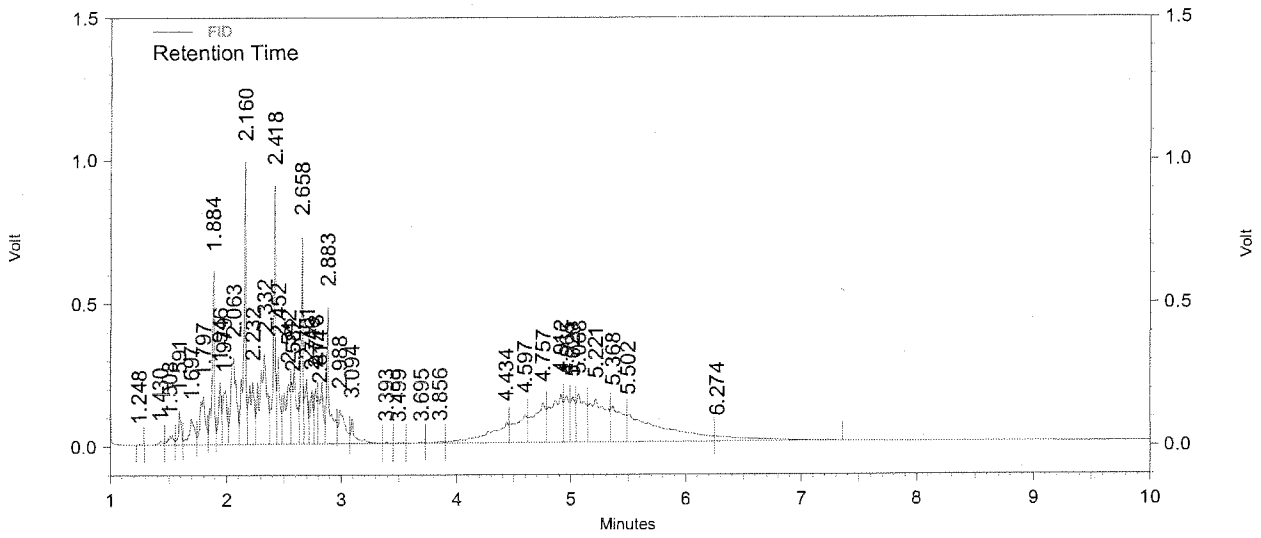
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 14839525 | 457.34 | -9 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 10518753 | 430.04 | -14 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 8890745 | 423.77 | -15 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 8890745 | 421.99 | -16 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29053.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: CDSD5I16378 JP5/5W30 500/500PPM** |
| **Acquired** | **: 10/30/14 09:34:56** |
| **Printed** | **: 10/30/14 15:57:10** |
| **User** | **: KLinn** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 14839525 | 32447.41478 | 457.341 |
| M.OIL(C18-C36) | | 10518753 | 24460.06839 | 430.038 |
| M.OIL(C24-C36) | | 8890745 | 20980.20150 | 423.768 |
| M.OIL(C24-C40) | | 8890745 | 21068.39522 | 421.994 |
| Totals | | 43139768 | | 1733.141 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LJ29065A 10/30/2014 12:58
CONC UNIT : ppm

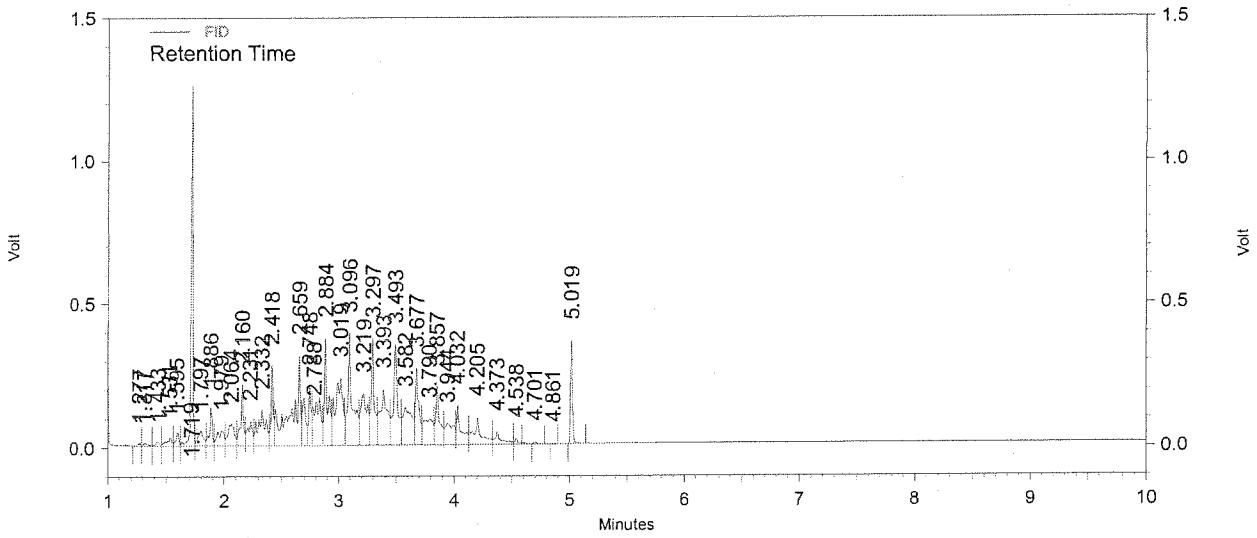
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 15023877 | 449.82 | -10 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 14375463 | 441.17 | -12 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 14379454 | 440.56 | -12 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 14379454 | 440.88 | -12 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 14771852 | 446.08 | -11 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 14775843 | 445.80 | -11 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 14379454 | 440.43 | -12 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 14379454 | 440.43 | -12 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.719 | 1.716 | 1.722 | 80.0 | 17891.9 | 1417931 | 79.25 | -1 | | 20 |
| HEXACOSANE | 5.019 | 4.971 | 5.067 | 20.0 | 25061.6 | 450992 | 18.00 | -10 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

**Inst. Name:** : GCT-105 (Offline)
**File** : D:\Projects\EZC331\Data\LJ29\LJ29065.dat
**Method** : D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met
**Sequence:** : D:\Projects\EZC331\Sequence\LJ29.seq
**Sample ID** : CDSD5I16380 DSL 500/80/20PPM
**Acquired** : 10/30/14 12:58:27
**Printed** : 10/30/14 15:54:29
**User** : KLinn

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.719 | 1417931 | 17891.93900 | 79.250 |
| HEXACOSANE | 5.019 | 450992 | 25061.64131 | 17.995 |
| DIESEL(TOTAL) | | 15023877 | 33399.78271 | 449.820 |
| DIESEL(C10-C24) | | 14375463 | 32585.09943 | 441.167 |
| DIESEL(C10-C28) | | 14379454 | 32639.02829 | 440.560 |
| DIESEL(C10-C25) | | 14379454 | 32615.51857 | 440.878 |
| DIESEL(C9-C24) | | 14771852 | 33114.42838 | 446.085 |
| DIESEL(C9-C25) | | 14775843 | 33144.84752 | 445.796 |
| DIESEL(C10-C36) | | 14379454 | 32648.86105 | 440.427 |
| DIESEL(C10-C40) | | 14379454 | 32648.86105 | 440.427 |
| Totals | | 118333774 | | 3642.405 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LJ29066A 10/30/2014 13:15
CONC UNIT : ppm

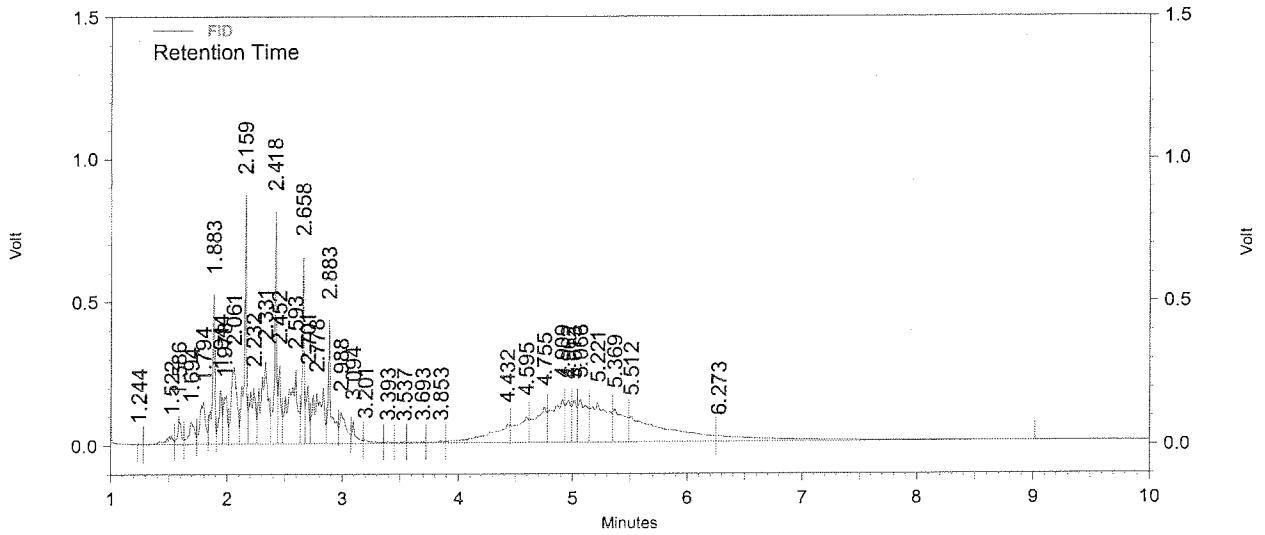
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 13338573 | 411.08 | -18 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 10082330 | 412.20 | -18 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 8564862 | 408.23 | -18 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 8564862 | 406.53 | -19 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29066.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: CDSD5I16381 JP5/5W30 500/500PPM** |
| **Acquired** | **: 10/30/14 13:15:38** |
| **Printed** | **: 10/30/14 15:58:55** |
| **User** | **: KLinn** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 13338573 | 32447.41478 | 411.083 |
| M.OIL(C18-C36) | | 10082330 | 24460.06839 | 412.195 |
| M.OIL(C24-C36) | | 8564862 | 20980.20150 | 408.235 |
| M.OIL(C24-C40) | | 8564862 | 21068.39522 | 406.527 |
| Totals | | 40550627 | | 1638.040 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16033A 09/17/2014 10:10
Conc Cont LFID & Datetime: LJ29070A 10/30/2014 14:23
CONC UNIT : ppm

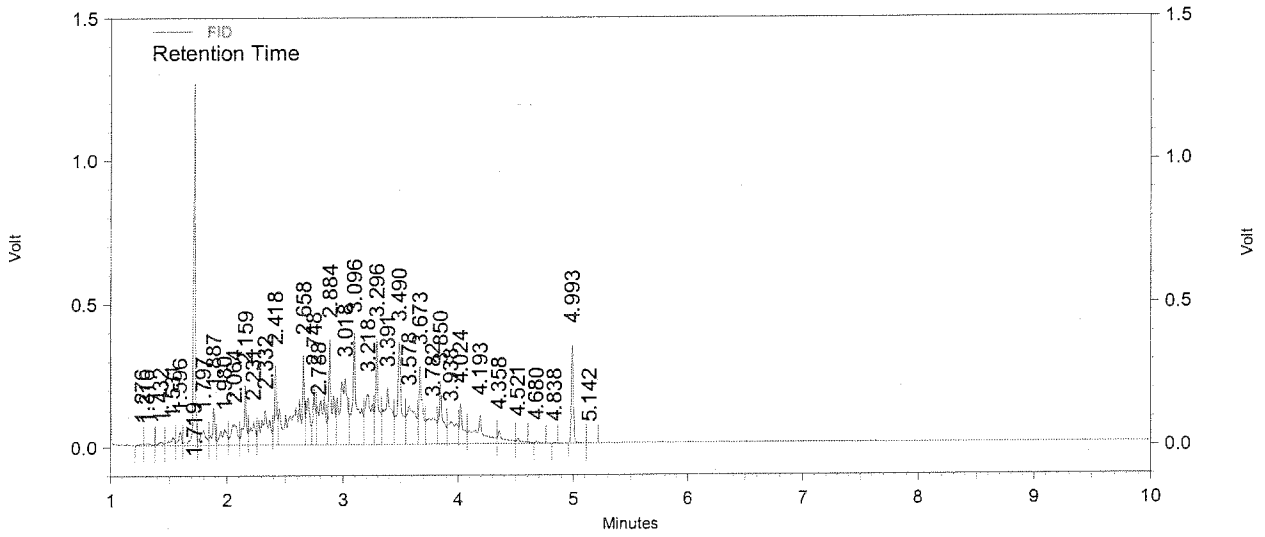
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 33399.8 | 15202528 | 455.17 | -9 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 32585.1 | 14561148 | 446.86 | -11 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 32639.0 | 14565595 | 446.26 | -11 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 32615.5 | 14565595 | 446.58 | -11 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 33114.4 | 14954507 | 451.60 | -10 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 33144.9 | 14958954 | 451.32 | -10 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 32648.9 | 14565595 | 446.13 | -11 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 32648.9 | 14565595 | 446.13 | -11 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.719 | 1.716 | 1.722 | 80.0 | 17891.9 | 1407331 | 78.66 | -2 | | 20 |
| HEXACOSANE | 4.993 | 4.945 | 5.041 | 20.0 | 25061.6 | 430622 | 17.18 | -14 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29070.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: CDSD5I16382 DSL 500/80/20PPM** |
| **Acquired** | **: 10/30/14 14:23:45** |
| **Printed** | **: 10/30/14 15:54:56** |
| **User** | **: KLinn** |

## FID Results

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.719 | 1407331 | 17891.93900 | 78.657 |
| HEXACOSANE | 4.993 | 430622 | 25061.64131 | 17.183 |
| DIESEL(TOTAL) | | 15202528 | 33399.78271 | 455.168 |
| DIESEL(C10-C24) | | 14561148 | 32585.09943 | 446.865 |
| DIESEL(C10-C28) | | 14565595 | 32639.02829 | 446.263 |
| DIESEL(C10-C25) | | 14565595 | 32615.51857 | 446.585 |
| DIESEL(C9-C24) | | 14954507 | 33114.42838 | 451.601 |
| DIESEL(C9-C25) | | 14958954 | 33144.84752 | 451.321 |
| DIESEL(C10-C36) | | 14565595 | 32648.86105 | 446.129 |
| DIESEL(C10-C40) | | 14565595 | 32648.86105 | 446.129 |
| Totals | | 119777470 | | 3685.900 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LI16040A 09/17/2014 12:11
Conc Cont LFID & Datetime: LJ29071A 10/30/2014 14:40
CONC UNIT : ppm

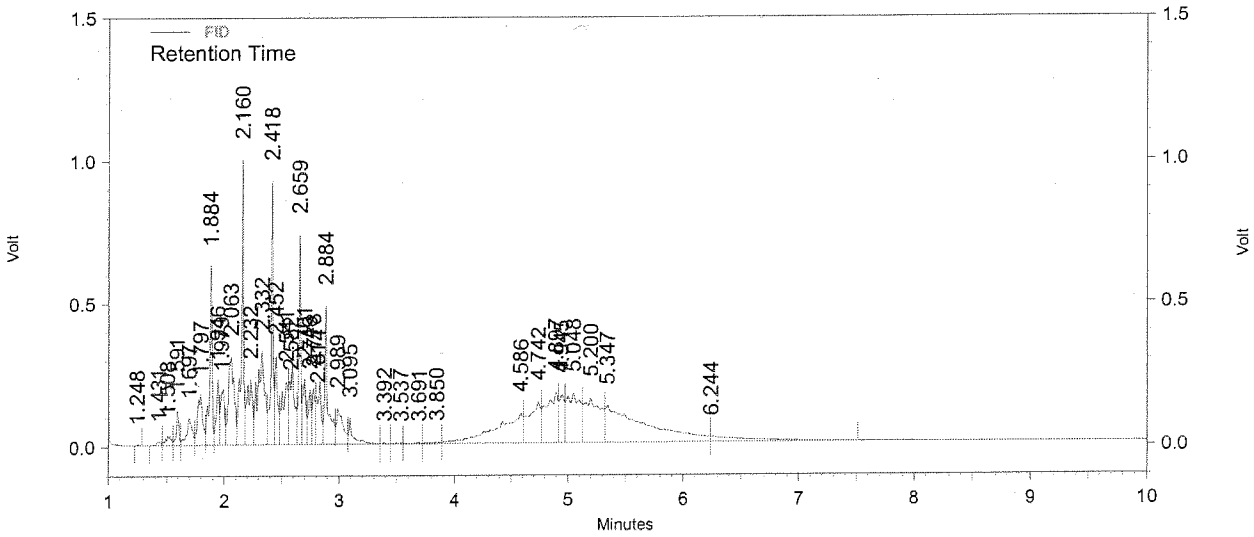
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 32447.4 | 15036275 | 463.40 | -7 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 24460.1 | 10741697 | 439.15 | -12 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 20980.2 | 9067206 | 432.18 | -14 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 21068.4 | 9067206 | 430.37 | -14 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LJ29\LJ29071.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5I16.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LJ29.seq** |
| **Sample ID** | **: CDSD5I16383 JP5/5W30 500/500PPM** |
| **Acquired** | **: 10/30/14 14:40:59** |
| **Printed** | **: 10/30/14 15:59:12** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 15036275 | 32447.41478 | 463.404 |
| M.OIL(C18-C36) | | 10741697 | 24460.06839 | 439.152 |
| M.OIL(C24-C36) | | 9067206 | 20980.20150 | 432.179 |
| M.OIL(C24-C40) | | 9067206 | 21068.39522 | 430.370 |
| Totals | | 43912384 | | 1765.106 |




**Software Version: Version 3.3.1**

# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

| | |
|---|---|
| Book #: | AD5-029 |
| Instrument No.: | D5 |
| Analytical Sequence: | LI16 |
| Method File: | D5D5I16 |
| Analytical Batch: | N.A. |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-8015D | 6 |
| ☐ EMAX-AK102/AK103 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | Conc (mg/L) |
|---|---|
| ICAL | |
| ☑ Diesel SS3B-17-98-01 | 5 → 3,000 |
| ☑ Motor Oil ☑ JP5 SS3B-17-98-03 | 10 → 3,000 |
| $CH_2Cl_2$ 54141 | Pure |
| DSL ~~DEC~~ ICV SS3B-17-98-02 | 500/80/20 |
| JP5/5W30 ~~DEC~~ ICV1 SS3B-17-99-01 | 500/500 |
| ~~Alaska DCC~~ JP5/5W30 ICV2 SS3B-17-99-02 | 500/500 |
| Arizona DCC | |
| DRO ($C_8$-$C_{40}$ + $C_9$-$C_{40}$) SS3B-17-32-03 | — |
| GRO ($C_6$-$C_{10}$) SS3B-17-32-02 | — |
| | |

KHL 9/16/14
KHL 9/16/14
KHL 9/16/14

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZCHROM_GC6890N | |
| ☐ External Hard Drive | |

Analyzed By: KHL

Date: 9/16/14

GCT-105 (Offline) Method: CCD5117.met Data: LI17062.dat Project: EZC331 - [Sequence: LI16.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Run Type | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|
| 28 | Unknown | 0 | 100 | 2 | IBD5I1602 | DSD5I16.met | LI16028.dat | | |
| 29 | Unknown | 0 | 9 | 2 | DSD5I1601 DSL 5PPM | DSD5I16.met | LI16029.dat | | DSL + Surr. ICAL |
| 30 | Unknown | 0 | 10 | 2 | DSD5I1602 DSL 10/20/5PPM | DSD5I16.met | LI16030.dat | | |
| 31 | Unknown | 0 | 11 | 2 | DSD5I1603 DSL 50/40/10PPM | DSD5I16.met | LI16031.dat | | |
| 32 | Unknown | 0 | 12 | 2 | DSD5I1604 DSL 100/60/15PPM | DSD5I16.met | LI16032.dat | | |
| 33 | Unknown | 0 | 13 | 2 | DSD5I1605 DSL 500/80/20PPM | DSD5I16.met | LI16033.dat | | |
| 34 | Unknown | 0 | 14 | 2 | DSD5I1606 DSL 1500/100/25PPM | DSD5I16.met | LI16034.dat | | |
| 35 | Unknown | 0 | 15 | 2 | DSD5I1607 DSL 3000/220/55PPM | DSD5I16.met | LI16035.dat | | |
| 36 | Unknown | 0 | 16 | 2 | IDSD5I1601 DSL 500/80/20PPM | DSD5I16.met | LI16036.dat | | DSL + Surr. ICV |
| 37 | Unknown | 0 | 17 | 2 | DSD5I1608 JP5/5W30 10/10PPM | DSD5I16.met | LI16037.dat | | JP5 + 5W30 ICAL |
| 38 | Unknown | 0 | 18 | 2 | DSD5I1609 JP5/5W30 50/50PPM | DSD5I16.met | LI16038.dat | | |
| 39 | Unknown | 0 | 19 | 2 | DSD5I1610 JP5/5W30 100/100PPM | DSD5I16.met | LI16039.dat | | |
| 40 | Unknown | 0 | 20 | 2 | DSD5I1611 JP5/5W30 500/500PPM | DSD5I16.met | LI16040.dat | | |
| 41 | Unknown | 0 | 21 | 2 | DSD5I1612 JP5/5W30 1500/1500PPM | DSD5I16.met | LI16041.dat | | |
| 42 | Unknown | 0 | 22 | 2 | DSD5I1613 JP5/5W30 3000/3000PPM | DSD5I16.met | LI16042.dat | | |
| 43 | Unknown | 0 | 23 | 2 | IDSD5I1602 JP5/5W30 500/500PPM | DSD5I16.met | LI16043.dat | | JP5 + 5W30 (Rejek) ICV |
| 44 | Unknown | 0 | 24 | 2 | IDSD5I1603 JP5/5W30 500/500PPM | DSD5I16.met | LI16044.dat | | JP5 + 5W30 (Aerostarchal) ICV |
| 45 | Unknown | 0 | 25 | 2 | DRO(C8-C40 + C9-C39) | DSD5I16.met | LI16045.dat | | |
| 46 | Unknown | 0 | 26 | 2 | GRO(C6-C10) | DSD5I16.met | LI16046.dat | | |
| 47 | Unknown | 0 | | 2 | | CCD5I16.met | LI16047.dat | | |
| 48 | Unknown | 0 | | 2 | | CCD5I16.met | LI16048.dat | | |
| 49 | Unknown | 0 | | 2 | | CCD5I16.met | LI16049.dat | | |
| 50 | Unknown | 0 | | 2 | | CCD5I16.met | LI16050.dat | | |
| 51 | Unknown | 0 | | 2 | | CCD5I16.met | LI16051.dat | | |
| 52 | Unknown | 0 | | 2 | | CCD5I16.met | LI16052.dat | | |
| 53 | Unknown | 0 | | 2 | | CCD5I16.met | LI16053.dat | | |
| 54 | Unknown | 0 | | 2 | | CCD5I16.met | LI16054.dat | | |
| 55 | Unknown | 0 | | 2 | | CCD5I16.met | LI16055.dat | | |
| 56 | Unknown | 0 | | 2 | | J8D5I16.met | LI16056.dat | | |
| 57 | Unknown | 0 | | 2 | KML 9/16/14 | J8D5I16.met | LI16057.dat | | |
| 58 | Unknown | 0 | | 2 | | J8D5I16.met | LI16058.dat | | FINAL |
| 59 | Unknown | 0 | | 2 | | J8D5I16.met | LI16059.dat | | |
| 60 | Unknown | 0 | | 2 | | J8D5I16.met | LI16060.dat | | |
| 61 | Unknown | 0 | | 2 | | J8D5I16.met | LI16061.dat | | |
| 62 | Unknown | 0 | | 2 | | J8D5I16.met | LI16062.dat | | |
| 63 | Unknown | 0 | | 2 | | J8D5I16.met | LI16063.dat | | |
| 64 | Unknown | 0 | | 2 | | J8D5I16.met | LI16064.dat | | |
| 65 | Unknown | 0 | | 2 | | J8D5I16.met | LI16065.dat | | |
| 66 | Unknown | 0 | | 2 | | J8D5I16.met | LI16066.dat | | |
| 67 | Unknown | 0 | | 2 | | J8D5I16.met | LI16067.dat | | |
| 68 | Unknown | 0 | | 2 | | J8D5I16.met | LI16068.dat | | |
| 69 | Unknown | 0 | | 2 | | J8D5I16.met | LI16069.dat | | |
| 70 | Unknown | 0 | | 2 | | J8D5I16.met | LI16070.dat | | |
| 71 | Unknown | 0 | | 2 | | J8D5I16.met | LI16071.dat | | |

KML 9/16/14

For Help, press F1

MIN

Start | EzChrom Elite | GCT-105 - Method: D5... | GCT-105 (Offline) | untitled - Paint | D:\Projects\EZC331\Meth... | 14:46

5056

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# EXTRACTABLE TPH

**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

DSJ0~~4~~3 7W: J175
km 10/30/14

DSJ036W J176

DSJ038W J178
J173
J144

Book #: AD5-030

Instrument No.: D5

Analytical Sequence: LJ29

Method File: CCDSI17/DSDSI16

Analytical Batch: CCCDSI1737o

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-8015D | 6 |
| ☐ EMAX-AK102/AK103 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | | Conc (mg/L) |
|---|---|---|
| ICAL | | |
| ☐ Diesel | | |
| ☐ Motor Oil ☐ JP5 | | |
| $CH_2Cl_2$ | 54141 | Pure |
| DSL DCC | SS3B-17-96-02 | 500/80/20 |
| JP5/5W30 DCC | SS3B-17-96-03 | 500/500 |
| Alaska DCC | | |
| Arizona DCC | | |
| CC DCC | SS3B-19-05-02 | 20/20/20 |
| DRO | SS3B-17-~~19~~91-02 | — |
| | km 10/29/14 | |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZCHROM_GC6890N | |
| ☐ External Hard Drive | |

Analyzed By: km

Date: 10/29/14

5057

GCT-105 (Offline) Method: DSD5I16M.met Data: LJ29074.dat Project: EZC331 - [Sequence: LJ29.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Run Type | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Unknow | 0 | 100 | 2 | IBD5J2901 | CCD5I17.met | LJ29001.dat | | |
| 2 | Unknown | 0 | 98 | 2 | CCCD5I17370 C-C 20/20/20PPM | CCD5I17.met | LJ29002.dat | | |
| 3 | Unknown | 0 | 3 | 2 | DSJ047WB | CCD5I17.met | LJ29003.dat | | |
| 4 | Unknown | 0 | 4 | 2 | DSJ047WL | CCD5I17.met | LJ29004.dat | | |
| 5 | Unknown | 0 | 5 | 2 | DSJ047WC | CCD5I17.met | LJ29005.dat | | |
| 6 | Unknown | 0 | 6 | 2 | 14J175-03 | CCD5I17.met | LJ29006.dat | | Light Yellow |
| 7 | Unknown | 0 | 7 | 2 | 14J175-04 | CCD5I17.met | LJ29007.dat | | Light Yellow |
| 8 | Unknown | 0 | 8 | 2 | 14J175-05 | CCD5I17.met | LJ29008.dat | | Light Yellow |
| 9 | Unknown | 0 | 9 | 2 | 14J175-12 | CCD5I17.met | LJ29009.dat | | Light Yellow |
| 10 | Unknown | 0 | 10 | 2 | 14J175-13 | CCD5I17.met | LJ29010.dat | | Light Yellow |
| 11 | Unknown | 0 | 11 | 2 | 14J175-13M | CCD5I17.met | LJ29011.dat | | Light Yellow |
| 12 | Unknown | 0 | 12 | 2 | 14J175-13S | CCD5I17.met | LJ29012.dat | | Light Yellow |
| 13 | Unknown | 0 | 13 | 2 | 14J175-14 | CCD5I17.met | LJ29013.dat | | Light Yellow |
| 14 | Unknown | 0 | 98 | 2 | CCCD5I17371 C-C 20/20/20PPM | CCD5I17.met | LJ29014.dat | | |
| 15 | Unknown | 0 | 14 | 2 | 14J175-08 | CCD5I17.met | LJ29015.dat | | |
| 16 | Unknown | 0 | 15 | 2 | 14J175-09 | CCD5I17.met | LJ29016.dat | | |
| 17 | Unknown | 0 | 16 | 2 | 14J175-20 | CCD5I17.met | LJ29017.dat | | |
| 18 | Unknown | 0 | 17 | 2 | 14J175-02I 0.1/1ML | CCD5I17.met | LJ29018.dat | | Light Yellow |
| 19 | Unknown | 0 | 18 | 2 | 14J175-06I 0.1/1ML | CCD5I17.met | LJ29019.dat | | Light Yellow |
| 20 | Unknown | 0 | 19 | 2 | 14J175-07I 0.1/1ML | CCD5I17.met | LJ29020.dat | | Light Yellow |
| 21 | Unknown | 0 | 20 | 2 | 14J175-10I 0.1/1ML | CCD5I17.met | LJ29021.dat | | Light Yellow |
| 22 | Unknown | 0 | 21 | 2 | 14J175-15I 0.1/1ML | CCD5I17.met | LJ29022.dat | | Light Yellow |
| 23 | Unknown | 0 | 22 | 2 | 14J175-16I 0.1/1ML | CCD5I17.met | LJ29023.dat | | Light Yellow |
| 24 | Unknown | 0 | 23 | 2 | 14J175-17I 0.1/1ML | CCD5I17.met | LJ29024.dat | | Light Yellow |
| 25 | Unknown | 0 | 24 | 2 | 14J175-18I 0.1/1ML | CCD5I17.met | LJ29025.dat | | Light Yellow |
| 26 | Unknown | 0 | 25 | 2 | 14J175-19I 0.1/1ML | CCD5I17.met | LJ29026.dat | | Light Yellow |
| 27 | Unknown | 0 | 98 | 2 | CCCD5I17372 C-C 20/20/20PPM | CCD5I17.met | LJ29027.dat | | |
| 28 | Unknown | 0 | 26 | 2 | 14J175-02 | CCD5I17.met | LJ29028.dat | | Amber |
| 29 | Unknown | 0 | 27 | 2 | 14J175-06 | CCD5I17.met | LJ29029.dat | | Amber |
| 30 | Unknown | 0 | 28 | 2 | 14J175-07 | CCD5I17.met | LJ29030.dat | | Amber |
| 31 | Unknown | 0 | 29 | 2 | 14J175-10 | CCD5I17.met | LJ29031.dat | | Amber |
| 32 | Unknown | 0 | 30 | 2 | 14J175-15 | CCD5I17.met | LJ29032.dat | | Amber |
| 33 | Unknown | 0 | 31 | 2 | 14J175-16 | CCD5I17.met | LJ29033.dat | | Amber |
| 34 | Unknown | 0 | 32 | 2 | 14J175-17 | CCD5I17.met | LJ29034.dat | | Amber |
| 35 | Unknown | 0 | 33 | 2 | 14J175-18 | CCD5I17.met | LJ29035.dat | | Amber |
| 36 | Unknown | 0 | 34 | 2 | 14J175-19 | CCD5I17.met | LJ29036.dat | | Amber |
| 37 | Unknown | 0 | 98 | 2 | CCCD5I17373 C-C 20/20/20PPM | CCD5I17.met | LJ29037.dat | | |
| 38 | Unknown | 0 | 100 | 2 | IBD5J2902 | DSD5I16.met | LJ29038.dat | | |
| 39 | Unknown | 0 | 99 | 2 | DRO(C8-C40 + C9-C39) | DSD5I16.met | LJ29039.dat | | |
| 40 | Unknown | 0 | 1 | 2 | CDSD5I16374 DSL 500/80/20PPM | DSD5I16.met | LJ29040.dat | | |
| 41 | Unknown | 0 | 2 | 2 | CDSD5I16375 JP5/5W30 500/500PPM | DSD5I16.met | LJ29041.dat | | |
| 42 | Unknown | 0 | 97 | 2 | CJ8D5I29376 JP8 500PPM | J8D5I29.met | LJ29042.dat | | |
| 43 | Unknown | 0 | 35 | 2 | DSJ036WB | DSD5I16.met | LJ29043.dat | | |
| 44 | Unknown | 0 | 36 | 2 | DSJ036WL | DSD5I16.met | LJ29044.dat | | |

FINAL

For Help, press F1

Start | untitled - Paint | EZChrom Elite | GCT-105 Method... | GCT-105 (Offline)... | D:\Projects\EZC331... | A:\ | Calculator | 16:33

Thursday, October 30, 2014

5058

GCT-105 (Offline) Method: DSD5I16M.met Data: LJ29074.dat Project: EZC331 - [Sequence: LJ29.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Run Type | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|
| 44 | Unknown | 0 | 36 | 2 | DSJ036WL | DSD5I16.met | LJ29044.dat | | |
| 45 | Unknown | 0 | 37 | 2 | DSJ036WC | DSD5I16.met | LJ29045.dat | | |
| 46 | Unknown | 0 | 38 | 2 | J5J036WL | DSD5I16.met | LJ29046.dat | | |
| 47 | Unknown | 0 | 39 | 2 | J5J036WC | DSD5I16.met | LJ29047.dat | | |
| 48 | Unknown | 0 | 40 | 2 | J8J036WL | DSD5I16.met | LJ29048.dat | | |
| 49 | Unknown | 0 | 41 | 2 | J8J036WC | DSD5I16.met | LJ29049.dat | | |
| 50 | Unknown | 0 | 42 | 2 | 14J176-01 | DSD5I16.met | LJ29050.dat | | |
| 51 | Unknown | 0 | 43 | 2 | 14J176-02 | DSD5I16.met | LJ29051.dat | | |
| 52 | Unknown | 0 | 1 | 2 | CDSD5I16377 DSL 500/80/20PPM | DSD5I16.met | LJ29052.dat | | |
| 53 | Unknown | 0 | 2 | 2 | CDSD5I16378 JP5/5W30 500/500PPM | DSD5I16.met | LJ29053.dat | | |
| 54 | Unknown | 0 | 97 | 2 | CJ8D5I29379 JP8 500PPM | J8D5I29.met | LJ29054.dat | | |
| 55 | Unknown | 0 | 44 | 2 | DSJ038WB | DSD5I16.met | LJ29055.dat | | |
| 56 | Unknown | 0 | 45 | 2 | DSJ038WL | DSD5I16.met | LJ29056.dat | | |
| 57 | Unknown | 0 | 46 | 2 | DSJ038WC | DSD5I16.met | LJ29057.dat | | |
| 58 | Unknown | 0 | 47 | 2 | 14J178-01 | DSD5I16.met | LJ29058.dat | | |
| 59 | Unknown | 0 | 48 | 2 | 14J173-01 | DSD5I16.met | LJ29059.dat | | |
| 60 | Unknown | 0 | 49 | 2 | 14J173-02 | DSD5I16.met | LJ29060.dat | | |
| 61 | Unknown | 0 | 50 | 2 | 14J173-02M | DSD5I16.met | LJ29061.dat | | |
| 62 | Unknown | 0 | 51 | 2 | 14J173-02S | DSD5I16.met | LJ29062.dat | | |
| 63 | Unknown | 0 | 52 | 2 | 14J173-03 | DSD5I16.met | LJ29063.dat | | |
| 64 | Unknown | 0 | 53 | 2 | 14J173-04 | DSD5I16.met | LJ29064.dat | | |
| 65 | Unknown | 0 | 1 | 2 | CDSD5I16380 DSL 500/80/20PPM | DSD5I16.met | LJ29065.dat | | |
| 66 | Unknown | 0 | 2 | 2 | CDSD5I16381 JP5/5W30 500/500PPM | DSD5I16.met | LJ29066.dat | | |
| 67 | Unknown | 0 | 54 | 2 | 14J144-01 | DSD5I16.met | LJ29067.dat | | |
| 68 | Unknown | 0 | 55 | 2 | 14J144-01M | DSD5I16.met | LJ29068.dat | | |
| 69 | Unknown | 0 | 56 | 2 | 14J144-01S | DSD5I16.met | LJ29069.dat | | |
| 70 | Unknown | 0 | 1 | 2 | CDSD5I16382 DSL 500/80/20PPM | DSD5I16.met | LJ29070.dat | | |
| 71 | Unknown | 0 | 2 | 2 | CDSD5I16383 JP5/5W30 500/500PPM | DSD5I16.met | LJ29071.dat | | |
| 72 | Unknown | 0 | 97 | 2 | CJ8D5I29384 JP8 500PPM | J8D5I29.met | LJ29072.dat | | |
| 73 | Unknown | 0 | 35 | 2 | DSJ036WQ | DSD5I16.met | LJ29073.dat | | |
| 74 | Unknown | 0 | 36 | 2 | DSJ036WX | DSD5I16.met | LJ29074.dat | | |
| 75 | Unknown | 0 | 1 | 2 | CDSD5I16385 DSL 500/80/20PPM | DSD5I16.met | LJ29075.dat | | |
| 76 | Unknown | 0 | 2 | 2 | CDSD5I16386 JP5/5W30 500/500PPM | DSD5I16.met | LJ29076.dat | | |
| 77 | Unknown | 0 | 97 | 2 | CJ8D5I29387 JP8 500PPM | J8D5I29.met | LJ29077.dat | | |
| 78 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29078.dat | | |
| 79 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29079.dat | | |
| 80 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29080.dat | | |
| 81 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29081.dat | | |
| 82 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29082.dat | | |
| 83 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29083.dat | | |
| 84 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29084.dat | | |
| 85 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29085.dat | | |
| 86 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29086.dat | | |
| 87 | Unknown | 0 | | 2 | IB | DSD5I16.met | LJ29087.dat | | |

FINAL

For Help, press F1

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Thursday, October 30, 2014

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# EXTRACTION LOGS

EMAX LABORATORIES, INC.

# EXTRACTION LOG
*for*
# TPH

| SOP | Rev. # |
|---|---|
| ☑ EMAX-3520 | 5 |
| ☐ EMAX-3540 | 2 |
| ☐ EMAX-3550 | 4 |
| ☐ EMAX-3580 | 2 |
| ☐ EMAX-8015AZ | 2 |
| ☐ EMAX-AK 102/103 | 3 |
| ☐ EMAX- | |

**Note:** For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

| Lab Sample ID | Sonicator # | Concentrator # |
|---|---|---|
| DSJ038WB | | 4 |
| -WL | | 4 |
| -WC | | 4 |
| J144-01 | | 4 |
| -01M | | 2 |
| -01S | | 4 |
| J173-01 | | 3 |
| -02 | | 3 |
| -02M | | 3 |
| -02S | | 3 |
| -03 | | 3 |
| -04 | | 4 |
| J178-01 | | 3 |
| | | |
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**Book #:** EDS-070
**Preparation Batch:** DSJ038W
**Matrix:** water
**Micropipette ID:** PE97C-03 (100 µL)
**Micropipette ID:** PE00-03 (1000 µL)

| Standards | ID | Amount Added (ml) |
|---|---|---|
| Surrogate | SS3-009-08-30 | 0.5 |
| Surrogate ( | | |
| LCS/MS (diesel) | SS3-009-08-04 | 0.1 |
| LC5/MS | | |

| Reagent | Lot # / ID |
|---|---|
| $CH_2Cl_2$ | 54184 |
| $Na_2SO_4$ | SW1B-002-62-17 |
| HCl | 4113080 |
| Silica Sand | |
| Silica Gel | |
| Reagent Water | SW1A-005-10-04 |
| pH strip | HC421273 |
| Filter Paper | 9587322B |

TUNING

| Sonicator # | Reading |
|---|---|
| | |
| | |
| | |
| | |

| Concentrator | Water Bath Temperature Setting (°C) | Thermometer Reading (°C) |
|---|---|---|
| 1 | | |
| 2 | 35 | 35 |
| 3 | 35 | 35 |
| 4 | 35 | 35 |
| 5 | | |
| 6 | | |

**Comments:**

Test thermometer = SVOC-T1

Prepared By: AGG  Standard Added By: AGG

Witnessed By: JM  Checked By: ML

Extract Received By: km 10/23/19  Extraction Location: EOG-8015-02

Disposal Date:  Disposed By:

FileID: DSJ038W

EMAX LABORATORIES, INC.

# EXTRACTION LOG FOR EXTRACTABLE TPH

| PrepBatchID | LabSampleID | Aliquot | Unit | DateTime | Ve(ml) | ExpAmt | ExpVe(ml) | PrepFctr | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 14DSJ038W01 | DSJ038WB | 1000 | ml | 10/28/14 15:28 | 10 | 1000 | 10 | 1 | |
| 14DSJ038W02 | DSJ038WL | 1000 | ml | 10/28/14 15:28 | 10 | 1000 | 10 | 1 | |
| 14DSJ038W03 | DSJ038WC | 1000 | ml | 10/28/14 15:28 | 10 | 1000 | 10 | 1 | |
| 14DSJ038W04 | J144-01 | 870 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.15 | |
| 14DSJ038W05 | J144-01M | 890 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.12 | |
| 14DSJ038W06 | J144-01S | 930 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.08 | |
| 14DSJ038W07 | J173-01 | 800 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.25 | light yellow |
| 14DSJ038W08 | J173-02 | 910 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.1 | light yellow |
| 14DSJ038W09 | J173-02M | 950 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.05 | light yellow |
| 14DSJ038W10 | J173-02S | 910 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.1 | light yellow |
| 14DSJ038W11 | J173-03 | 920 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.09 | light yellow |
| 14DSJ038W12 | J173-04 | 850 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.18 | light yellow |
| 14DSJ038W13 | J178-01 | 960 | ml | 10/28/14 15:29 | 10 | 1000 | 10 | 1.04 | |

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 10/28/14 15:00

☑ Extraction Ended @ 10/29/14 9:00

Prepared By: AGalan

Checked By: ML

Date 10/29/14

Comments: Vol entered after start of extraction. pH adjusted to pH<2 w/ conc HCl for all samples.

SOP EMAX-3520 Rev. 5

# TABLE OF CONTENTS

**CLIENT:** **BATTELLE**

**PROJECT:** **RED HILL PHASE 1B**

**SDG:** **14J206**


| SECTION | | PAGE |
|---|---|---|
| Cover Letter, COC/Sample Receipt Form | | 1000 – 1004 |
| GC/MS-VOA | ** | 2000 – |
| GC/MS-SVOA | ** | 3000 – |
| GC-VOA | METHOD 5030B/8015B | 4000 – 4042 |
| GC-SVOA | ** | 5000 – |
| HPLC | ** | 6000 – |
| METALS | ** | 7000 – |
| WET | ** | 8000 – |
| OTHERS | ** | 9000 – |


** - Not Requested

**EMAX**
**LABORATORIES, INC.**
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 11-07-2014
EMAX Batch No.: 14J206

Attn: Carolyn Scala

Battelle
301 South State St., Suite N001
Newton PA 18940

Subject: Laboratory Report
Project: Red Hill Phase 1b

---

Enclosed is the Laboratory report for samples received on 10/28/14.
The data reported relate only to samples listed below :

| Sample ID | Control # | Col Date | Matrix | Analysis |
|---|---|---|---|---|
| RHMW07-GW-01 | J206-01 | 10/27/14 | WATER | TPH GASOLINE |
| RHMW07-GW-01FD | J206-02 | 10/27/14 | WATER | TPH GASOLINE |
| TB102714 | J206-03 | 10/27/14 | WATER | TPH GASOLINE |

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

# CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. *14 J 206

PROJECT CODE:

CLIENT: Battelle c/o Parsons
PROJECT: Red Hill
COORDINATOR: Mitch Jensen 801 380 1375
TEL / FAX / EMAIL: Gene.Wright@Parsons.com
SEND REPORT TO: Gene Wright 801 553 3317
COMPANY: Parsons
ADDRESS: 10235 S. Jordan Gateway #300, South Jordan, Utah 84095
EMAX PM: Nguyen

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

ANALYSIS REQUIRED: TPH-GRO

TAT:
- ☐ Rush ____hrs.
- ☐ Rush ____days
- ☐ 7 days
- ☐ 14 days
- ☐ 21 days
- ☐ 30 days
- ☐ ____days
- ☑ per contract / QAPP

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | PRESERVATIVE CODE | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RHMW07-GW-01 | Oahu, HI | 10/27/14 | 0900 | 3 | 40ml | VOA | GW | | IC | unpreserved |
| 2 | RHMW07-GW-01FD | | 10/27/14 | 0900 | 3 | " | " | GW | | IC | " " |
| 3 | TB102714 | | 10/27/14 | 0900 | 2 | " | " | | X | IC | " " |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 0 | | | | | | | | | | | |

Instructions

| Cooler # | Temp. (°C) | Sample #s |
|---|---|---|
| 1 | 3.3 | |

SAMPLER

COURIER/AIRBILL: Fedex

| RELINQUISHED BY | Date | Time | RECEIVED BY | |
|---|---|---|---|---|
| [signature] | 10/27/14 | 1030 | [signature] | 10/28/14 09:15 |

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

1 of 1

# SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

| Type of Delivery | Airbill / Tracking Number | ECN 14 J 206 |
|---|---|---|
| ☑ Fedex ☐ UPS ☐ GSO ☐ Others | 8033 9937 1635 | Recipient I LATEL |
| ☐ EMAX Courier ☐ Client Delivery | | Date 10/28/14 Time 0915 |

## COC INSPECTION

| | | | | | |
|---|---|---|---|---|---|
| ☑ Client Name | ☑ Client PM/FC | NV ☑ Sampler Name | ☑ Sampling Date/Time | ☑ Sample ID | ☑ Matrix |
| ☑ Address | ☑ Tel # / Fax # | ☐ Courier Signature | ☑ Analysis Required | ☑ Preservative (if any) | ☑ TAT |
| Safety Issues (if any) | ☐ High concentrations expected | ☐ From Superfund Site | ☐ Rad screening required | | |

Note: _____

## PACKAGING INSPECTION

| | | | | | |
|---|---|---|---|---|---|
| Container | ☑ Cooler | ☐ Box | ☐ Other | | |
| Condition | ☑ Custody Seal | ☑ Intact | ☐ Damaged | | |
| Packaging | ☑ Bubble Pack | ☐ Styrofoam | ☐ Popcorn | ☑ Sufficient | ☑ plastic bag |
| Temperatures (Cool, ≤6 °C but not frozen) | B ☑ Cooler 1 3.3 °C | ☐ Cooler 2 ____ °C | ☐ Cooler 3 ____ °C | ☐ Cooler 4 ____ °C | ☐ Cooler 5 ____ °C |
| | ☐ Cooler 6 ____ °C | ☐ Cooler 7 ____ °C | ☐ Cooler 8 ____ °C | ☐ Cooler 9 ____ °C | ☐ Cooler 10 ____ °C |
| *Thermometer:* | *A - S/N* 130538505 | *B - S/N* 140253070 | *C - S/N* ____ | *D - S/N* ____ | |

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.** FM 10/27/14

Note: _____

## DISCREPANCIES

| LabSampleID | LabSampleContainerID | Code | ClientSample Label ID / Information | Corrective Action |
|---|---|---|---|---|
| | | | | |
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a 10/28/14

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

**NOTES/OBSERVATIONS:**

**LEGEND:**

☐ **Continue to next page.**

| Code | Description- Sample Management | Code | Description-Sample Management | Code | Description-Sample Management |
|---|---|---|---|---|---|
| D1 | Analysis is not indicated in ____ | D13 | Out of Holding Time | R1 | Proceed as indicated in ☐ COC ☐ Label |
| D2 | Analysis mismatch COC vs label | D14 | Bubble is >6mm | R2 | Refer to attached instruction |
| D3 | Sample ID mismatch COC vs label | D15 | No trip blank in cooler | R3 | Cancel the analysis |
| D4 | Sample ID is not indicated in ____ | D16 | Preservation not indicated in ____ | R4 | Use vial with smallest bubble first |
| D5 | Container -[improper] [leaking] [broken] | D17 | Preservation mismatch COC vs label | R5 | Log-in with latest sampling date and time+1 min |
| D6 | Date/Time is not indicated in ____ | D18 | Insufficient chemical preservative | R6 | Adjust pH as necessary |
| D7 | Date/Time mismatch COC vs label | D19 | Insufficient Sample | R7 | Filter and preserved as necessary |
| D8 | Sample listed in COC is not received | D20 | No filtration info for dissolved analysis | R8 | ____ |
| D9 | Sample received is not listed in COC | D21 | No sample for moisture determination | R9 | ____ |
| D10 | No initial/date on corrections in COC/label | D22 | ____ | R10 | ____ |
| D11 | Container count mismatch COC vs received | D23 | ____ | R11 | ____ |
| D12 | Container size mismatch COC vs received | D24 | ____ | R12 | ____ |

**REVIEWS:**

Sample Labeling ____ Date 10/28/14

10-28-14

SRF ____ Date 10/28/14

PM ____ Date 10/28/14

00029

00052

**FedEx Express** Package US Airbill

FedEx Tracking Number 8033 9937 1635

Form ID No. 0215

SLAZ

Recipient's Copy

**1 From**

Date 10-27-14

Sender's Name MITCH JENSEN Phone 801 572-5999

Company PARSONS GOVT

Address 10235 S JORDAN GTWY STE 300 Dept./Floor/Suite/Room

City SOUTH JORDAN State UT ZIP 84095-4188

**2 Your Internal Billing Reference** 640016.0006.7449425.05200.LCR00

**3 To**

Recipient's Name Sample Receiving / Nguyen Phone 310 618 8889

Company Emax Laboratories Inc.

Address 1835 W. 205th Street Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Torrance State CA ZIP 90501

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

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8033 9937 1635

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FedEx Standa Next business after Saturday Delivery N

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**6 Special Ha**

SATURDAY D NOT available for

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Does this ship

No

Dangerous goods (includi or placed in a FedEx Expr

**7 Payment**

Sender Acct. No. in Section 4 will be billed.

Total Packages 1

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Rev. Date 2/12 • Part #16

ORIGIN ID:HNLA (801) 572-5999
PARSONS GOVT
10235 S JORDAN GTWY STE 300
SOUTH JORDAN, UT 840954188
UNITED STATES US

SHIP DATE: 27OCT14
ACTWGT: 36.5 LB
CAD: /POS1525
DIMS: 25x14x14 IN
BILL SENDER

TO **SAMPLE RECEIVING**
**EMAX LABORTORIES**
**1835 W 205TH ST**

**TORRANCE CA 90501**
(310) 618-8889 REF:
INV: PO: DEPT:

#725802 10/27, 522GY/DFGA/RACG

FedEx Express

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CA-US LAX

fedex.com 1.800.GoFedEx 1.800.463.3339

1503

## REPORTING CONVENTIONS

### DATA QUALIFIERS:

| Lab Qualifier | AFCEE Qualifier | Description |
|---|---|---|
| J | F | Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL. |
| N | | Indicates presumptive evidence of a compound. |
| B | B | Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level. |
| E | J | Indicates that the result is above the maximum calibration range. |
| * | * | Out of QC limit. |

**Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.**

### ACRONYMS AND ABBREVIATIONS:

| | |
|---|---|
| **CRDL** | Contract Required Detection Limit |
| **RL** | Reporting Limit |
| **MRL** | Method Reporting Limit |
| **MDL** | Method Detection Limit |
| **DL** | Detection Limit |
| **LOD** | Limit of Detection |
| **LOQ** | Limit of Quantitation |
| **DO** | Diluted out |

### DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 14J206

CASE NARRATIVE

Client : BATTELLE

Project : RED HILL PHASE 1B

SDG : 14J206

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of three (3) water samples were received on 10/28/14 for TPH Gasoline analysis, Method SW5030B/8015B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 and project SAP August 2014.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for VG39J18L/Y were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogate was added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : BATTELLE
Project : RED HILL PHASE 1B
SDG NO. : 14J206
Instrument ID : GCT039

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | WATER Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | VG39J18B | 1 | NA | 10/28/1418:33 | 10/28/1418:33 | EJ28008A | EJ28003A | VG39J18 | Method Blank |
| LCS1W | VG39J18L | 1 | NA | 10/28/1415:21 | 10/28/1415:21 | EJ28004A | EJ28003A | VG39J18 | Lab Control Sample (LCS) |
| LCD1W | VG39J18Y | 1 | NA | 10/28/1417:15 | 10/28/1417:15 | EJ28006A | EJ28003A | VG39J18 | LCS Duplicate |
| RHMW07-GW-01 | J206-01 | 1 | NA | 10/28/1419:12 | 10/28/1419:12 | EJ28009A | EJ28003A | VG39J18 | Field Sample |
| RHMW07-GW-01FD | J206-02 | 1 | NA | 10/28/1419:51 | 10/28/1419:51 | EJ28010A | EJ28003A | VG39J18 | Field Sample |
| TB102714 | J206-03 | 1 | NA | 10/28/1420:30 | 10/28/1420:30 | EJ28011A | EJ28003A | VG39J18 | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/27/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/28/14 |
| Batch No. | : 14J206 | Date Extracted: | 10/28/14 19:12 |
| Sample ID: | RHMW07-GW-01 | Date Analyzed: | 10/28/14 19:12 |
| Lab Samp ID: | J206-01 | Dilution Factor: | 1 |
| Lab File ID: | EJ28009A | Matrix : | WATER |
| Ext Btch ID: | VG39J18 | % Moisture : | NA |
| Calib. Ref.: | EJ28003A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0358 | 0.04000 | 89.4 | 70-130 |

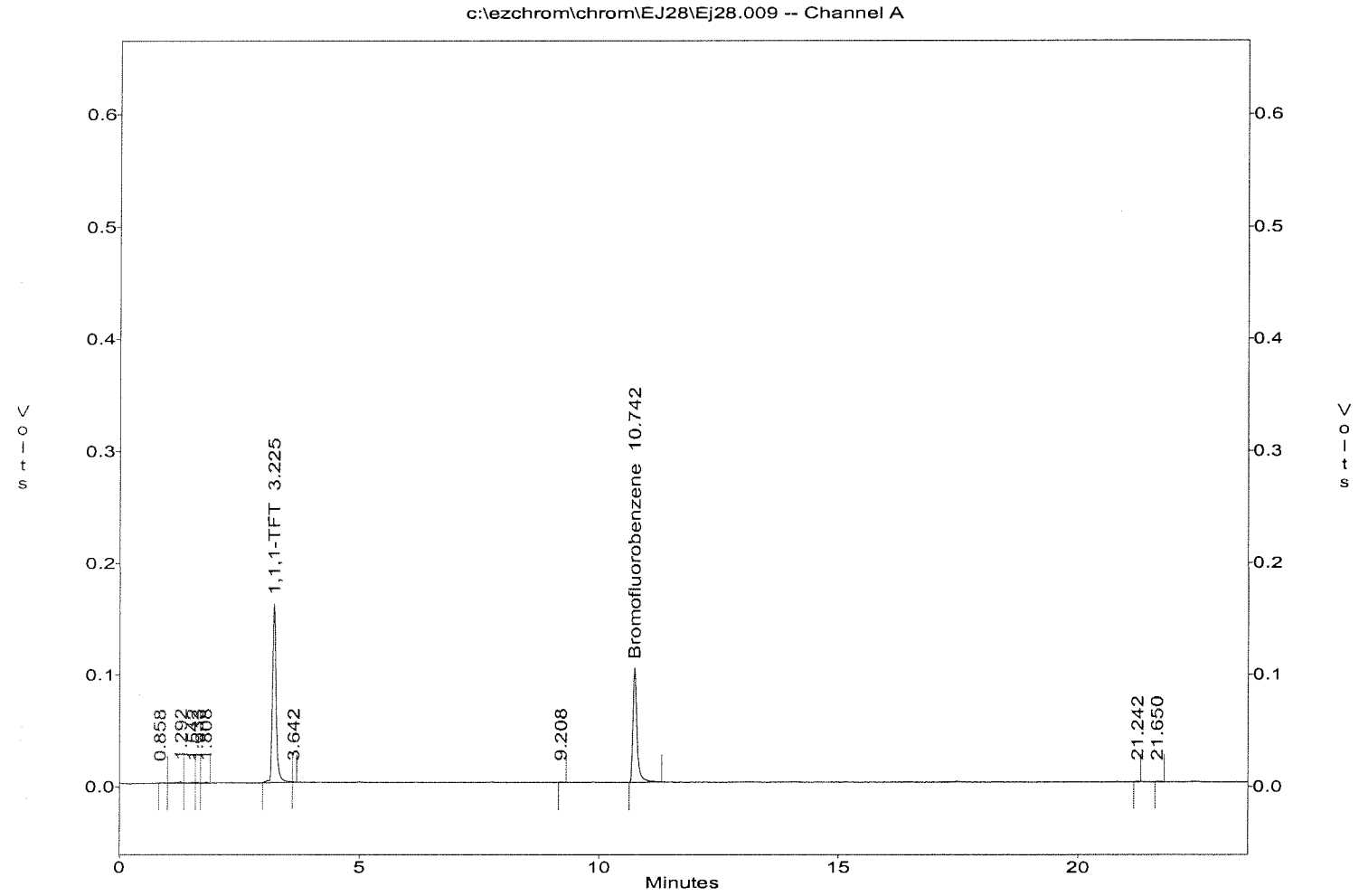
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ28\Ej28.009
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14J206-01 5.0ML W
Acquired : Oct 28, 2014 19:12:21
Printed : Oct 28, 2014 19:35:53
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.225 | 859371.0 | 21400.0 | 40.16 |
| 9 | Bromofluorobenzene | 10.742 | 598394.0 | 16725.9 | 35.78 |
| G1 | GASOLINE(TOTAL) | | 25523.0 | 28261.9 | 0.90 |
| G2 | GRO(C6-C10) | | 9849.0 | 21355.4 | 0.46 |
| G3 | GRO(2MP-124TMB) | | 13257.0 | 21297.0 | 0.62 |
| G4 | GRO(C5-C12) | | 21209.0 | 27928.9 | 0.76 |
| G5 | GRO(C6-C12) | | 9849.0 | 27890.2 | 0.35 |
| G6 | GRO(C5-C10) | | 21209.0 | 21396.8 | 0.99 |



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/27/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/28/14 |
| Batch No. | : 14J206 | Date Extracted: | 10/28/14 19:51 |
| Sample ID: | RHMW07-GW-01FD | Date Analyzed: | 10/28/14 19:51 |
| Lab Samp ID: | J206-02 | Dilution Factor: | 1 |
| Lab File ID: | EJ28010A | Matrix : | WATER |
| Ext Btch ID: | VG39J18 | % Moisture : | NA |
| Calib. Ref.: | EJ28003A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0373 | 0.04000 | 93.4 | 70-130 |

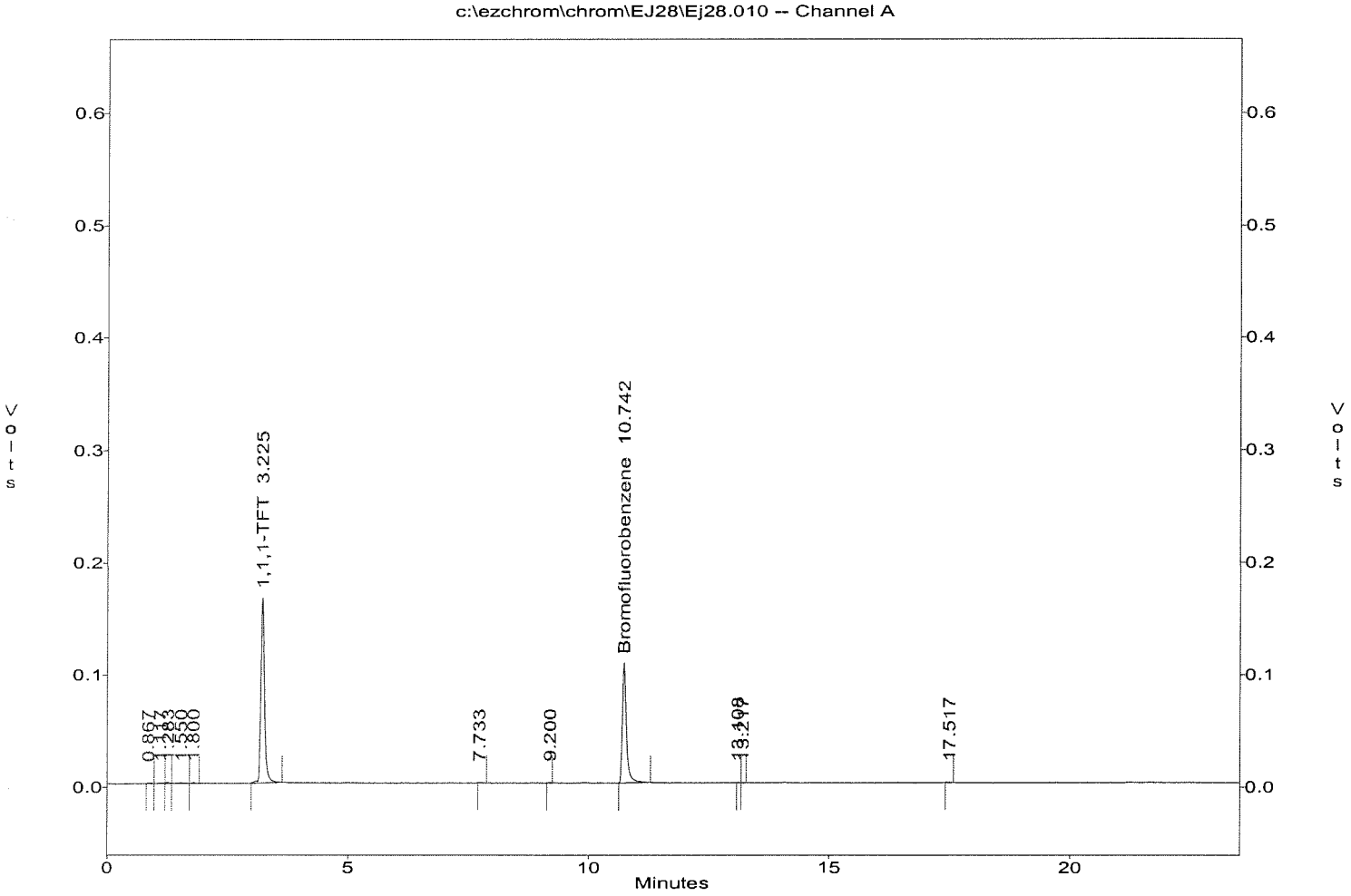
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ28\Ej28.010
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14J206-02 5.0ML W
Acquired : Oct 28, 2014 19:51:17
Printed : Oct 28, 2014 20:14:49
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.225 | 882773.0 | 21400.0 | 41.25 |
| 9 | Bromofluorobenzene | 10.742 | 624570.0 | 16725.9 | 37.34 |
| G1 | GASOLINE(TOTAL) | | 28922.0 | 28261.9 | 1.02 |
| G2 | GRO(C6-C10) | | 7033.0 | 21355.4 | 0.33 |
| G3 | GRO(2MP-124TMB) | | 14991.0 | 21297.0 | 0.70 |
| G4 | GRO(C5-C12) | | 24071.0 | 27928.9 | 0.86 |
| G5 | GRO(C6-C12) | | 11015.0 | 27890.2 | 0.39 |
| G6 | GRO(C5-C10) | | 20089.0 | 21396.8 | 0.94 |



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 10/27/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 10/28/14 |
| Batch No. | : 14J206 | Date Extracted: | 10/28/14 20:30 |
| Sample ID: | TB102714 | Date Analyzed: | 10/28/14 20:30 |
| Lab Samp ID: | J206-03 | Dilution Factor: | 1 |
| Lab File ID: | EJ28011A | Matrix : | WATER |
| Ext Btch ID: | VG39J18 | % Moisture : | NA |
| Calib. Ref.: | EJ28003A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0389 | 0.04000 | 97.3 | 70-130 |

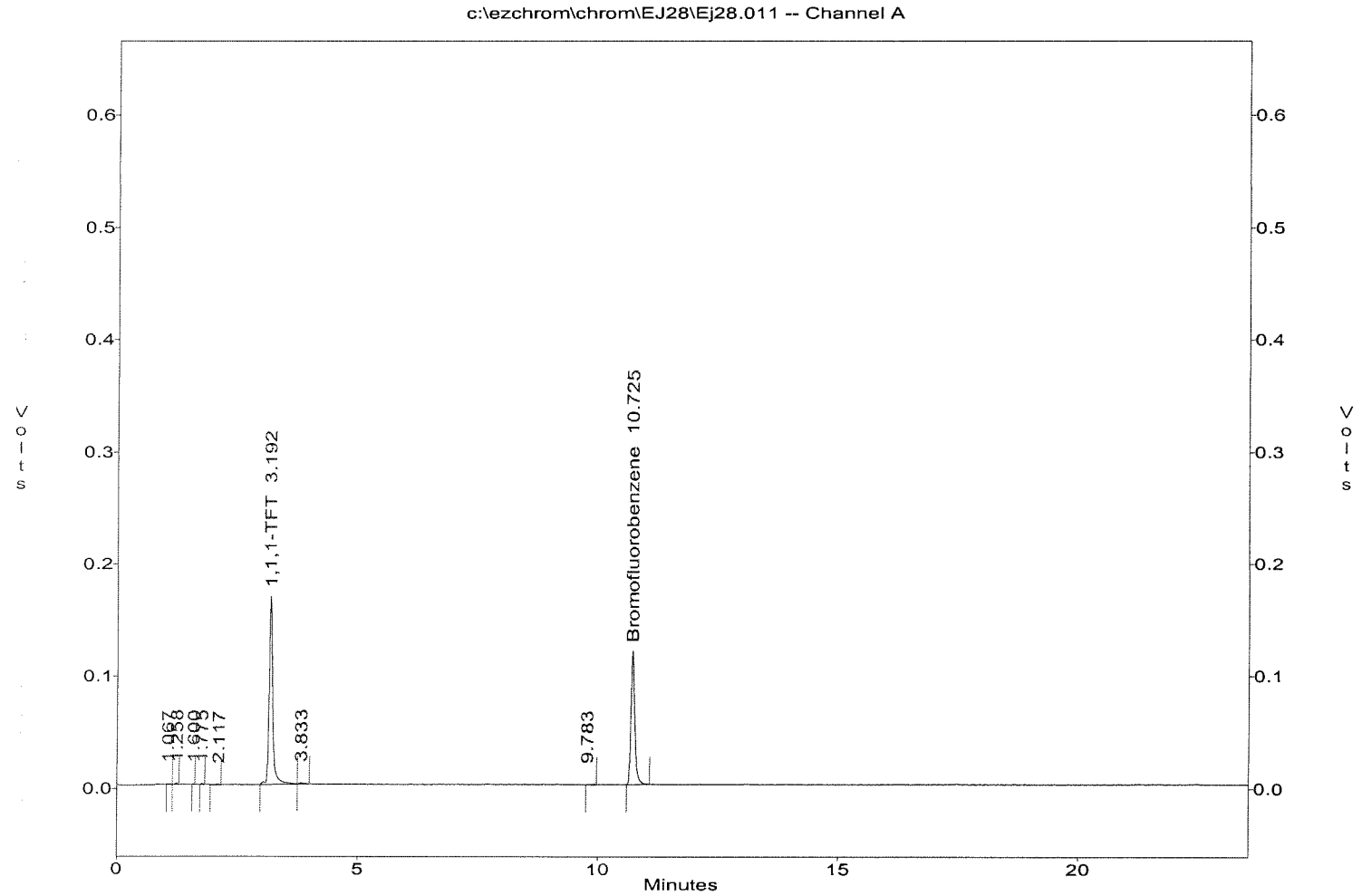
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ28\Ej28.011
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14J206-03 5.0ML W
Acquired : Oct 28, 2014 20:30:09
Printed : Oct 28, 2014 20:53:41
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.192 | 899284.0 | 21400.0 | 42.02 |
| 9 | Bromofluorobenzene | 10.725 | 651145.0 | 16725.9 | 38.93 |
| G1 | GASOLINE(TOTAL) | | 24291.0 | 28261.9 | 0.86 |
| G2 | GRO(C6-C10) | | 15817.0 | 21355.4 | 0.74 |
| G3 | GRO(2MP-124TMB) | | 16688.0 | 21297.0 | 0.78 |
| G4 | GRO(C5-C12) | | 21324.0 | 27928.9 | 0.76 |
| G5 | GRO(C6-C12) | | 15817.0 | 27890.2 | 0.57 |
| G6 | GRO(C5-C10) | | 21324.0 | 21396.8 | 1.00 |



# QC SUMMARIES

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 10/28/14 |
| Batch No. | : 14J206 | Date Extracted: | 10/28/14 18:33 |
| Sample ID: | MBLK1W | Date Analyzed: | 10/28/14 18:33 |
| Lab Samp ID: | VG39J18B | Dilution Factor: | 1 |
| Lab File ID: | EJ28008A | Matrix : | WATER |
| Ext Btch ID: | VG39J18 | % Moisture : | NA |
| Calib. Ref.: | EJ28003A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0382 | 0.04000 | 95.6 | 70-130 |

| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14J206
METHOD: SW5030B/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | VG39J18B | VG39J18L | VG39J18Y | | |
| LAB FILE ID: | EJ28008A | EJ28004A | EJ28006A | | |
| DATE EXTRACTED: | 10/28/1418:33 | 10/28/1415:21 | 10/28/1417:15 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 10/28/1418:33 | 10/28/1415:21 | 10/28/1417:15 | DATE RECEIVED: | 10/28/14 |
| PREP. BATCH: | VG39J18 | VG39J18 | VG39J18 | | |
| CALIB. REF: | EJ28003A | EJ28003A | EJ28003A | | |

ACCESSION:

| PARAMETER | BLNK RSLT (mg/L) | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO | ND | 0.500 | 0.443 | 89 | 0.500 | 0.445 | 89 | 0 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 0.0400 | 0.0411 | 103 | 0.0400 | 0.0413 | 103 | 70-130 |

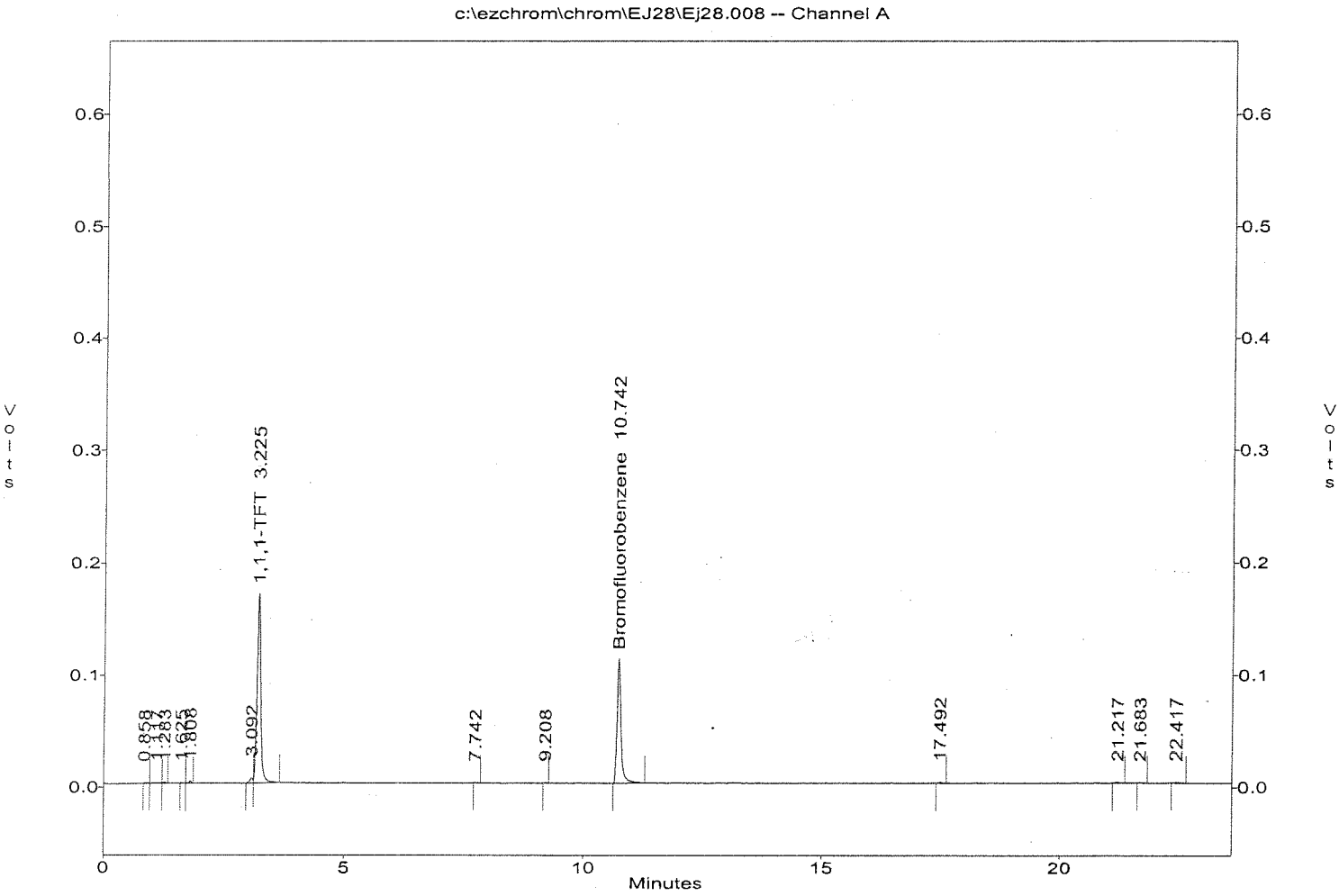
# QC DATA

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ28\Ej28.008
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : VG39J18B 5.0ML W
Acquired : Oct 28, 2014 18:33:19
Printed : Oct 28, 2014 18:56:51
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.225 | 886631.0 | 21400.0 | 41.43 |
| 10 | Bromofluorobenzene | 10.742 | 639406.0 | 16725.9 | 38.23 |
| G1 | GASOLINE(TOTAL) | | 57840.0 | 28261.9 | 2.05 |
| G2 | GRO(C6-C10) | | 32440.0 | 21355.4 | 1.52 |
| G3 | GRO(2MP-124TMB) | | 32440.0 | 21297.0 | 1.52 |
| G4 | GRO(C5-C12) | | 39873.0 | 27928.9 | 1.43 |
| G5 | GRO(C6-C12) | | 36124.0 | 27890.2 | 1.30 |
| G6 | GRO(C5-C10) | | 36189.0 | 21396.8 | 1.69 |



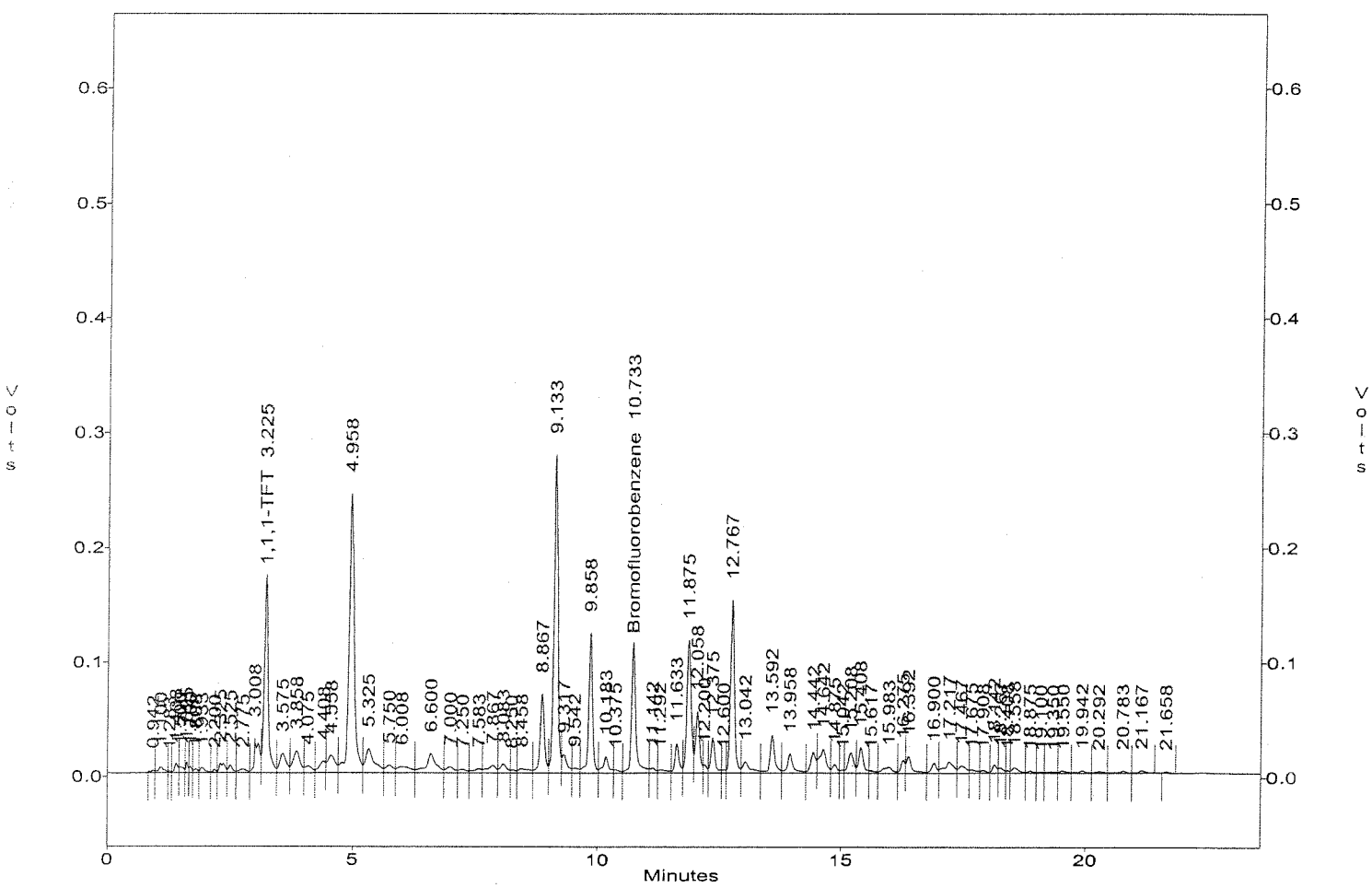
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ28\Ej28.004
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : VG39J18L 5.0ML W
Acquired : Oct 28, 2014 15:21:14
Printed : Oct 28, 2014 15:44:45
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 15 | 1,1,1-TFT | 3.225 | 945326.0 | 21400.0 | 44.17 |
| 40 | Bromofluorobenzene | 10.733 | 688207.0 | 16725.9 | 41.15 |
| G1 | GASOLINE(TOTAL) | | 11491775.0 | 28261.9 | 406.62 |
| G2 | GRO(C6-C10) | | 9466023.0 | 21355.4 | 443.26 |
| G3 | GRO(2MP-124TMB) | | 9427327.0 | 21297.0 | 442.66 |
| G4 | GRO(C5-C12) | | 11312188.0 | 27928.9 | 405.04 |
| G5 | GRO(C6-C12) | | 11237812.0 | 27890.2 | 402.93 |
| G6 | GRO(C5-C10) | | 9540399.0 | 21396.8 | 445.88 |

c:\ezchrom\chrom\EJ28\Ej28.004 -- Channel A




4015

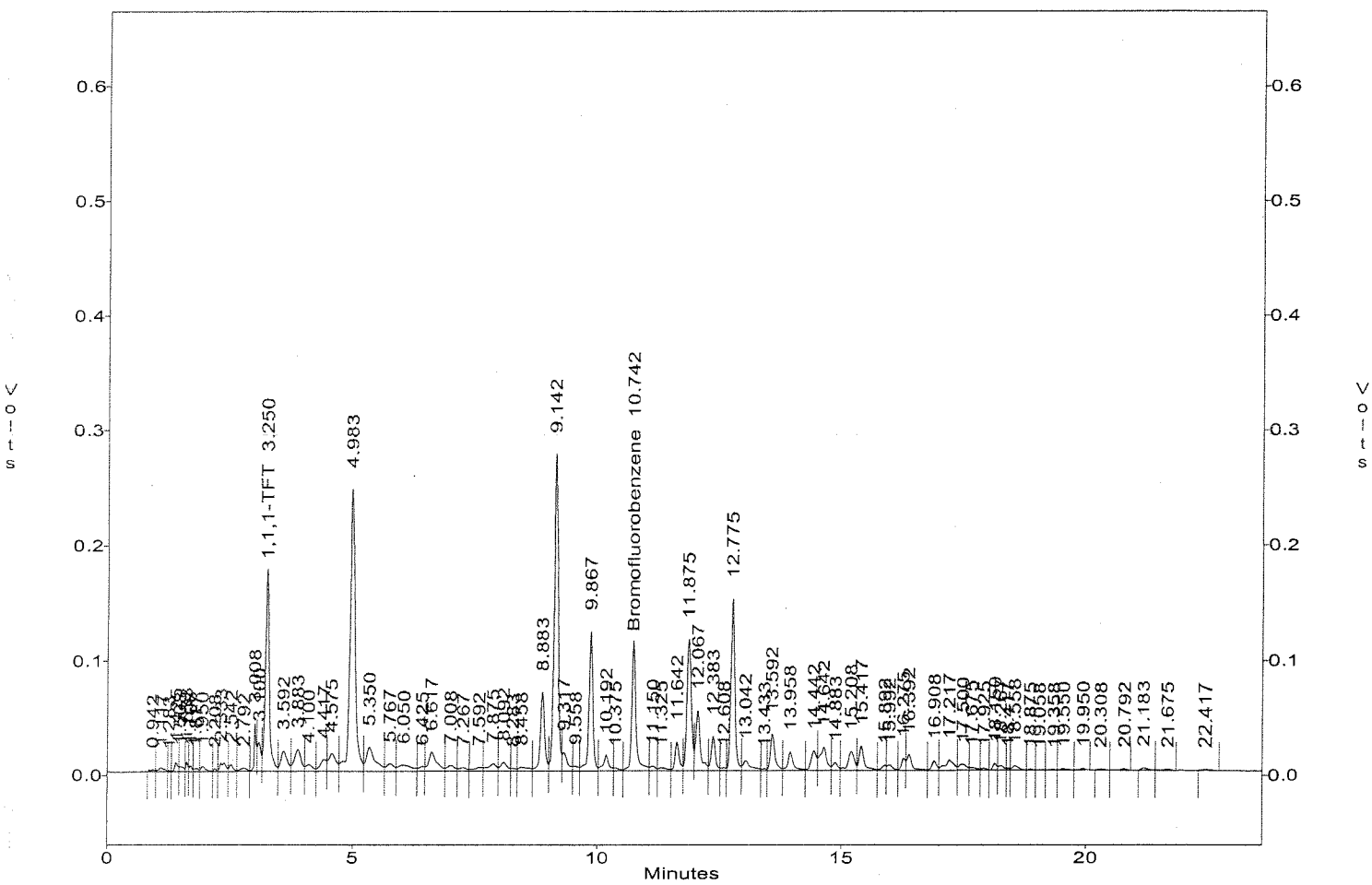
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ28\Ej28.006
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : VG39J18Y 5.0ML W
Acquired : Oct 28, 2014 17:15:26
Printed : Oct 28, 2014 17:38:58
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 16 | 1,1,1-TFT | 3.250 | 958307.0 | 21400.0 | 44.78 |
| 42 | Bromofluorobenzene | 10.742 | 690118.0 | 16725.9 | 41.26 |
| G1 | GASOLINE(TOTAL) | | 11339694.0 | 28261.9 | 401.24 |
| G2 | GRO(C6-C10) | | 9510058.0 | 21355.4 | 445.32 |
| G3 | GRO(2MP-124TMB) | | 9473824.0 | 21297.0 | 444.84 |
| G4 | GRO(C5-C12) | | 11222687.0 | 27928.9 | 401.83 |
| G5 | GRO(C6-C12) | | 11155657.0 | 27890.2 | 399.98 |
| G6 | GRO(C5-C10) | | 9577088.0 | 21396.8 | 447.59 |

c:\ezchrom\chrom\EJ28\Ej28.006 -- Channel A



# INITIAL CALIBRATIONS

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EE02002A 05/02/14 11:39
LFID & Datetime: EE02003A 05/02/14 12:18
LFID & Datetime: EE02004A 05/02/14 12:57
LFID & Datetime: EE02005A 05/02/14 13:36
LFID & Datetime: EE02006A 05/02/14 14:15
LFID & Datetime: EE02007A 05/02/14 14:54
CONC UNIT: ppb

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 1.00X | 2.50X | 5.00X | 25.00X | 50.00X | 75.00X | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | 20.00 | 27801 | 27719 | 28723 | 28893 | 27835 | 28600 | 28261.9 | 1.9 |
| GRO(C6-C10) | 20.00 | 21440 | 21614 | 22072 | 21470 | 20441 | 21095 | 21355.4 | 2.6 |
| GRO(2MP-124TMB) | 20.00 | 21440 | 21614 | 21962 | 21379 | 20360 | 21028 | 21297.0 | 2.6 |
| GRO(C5-C12) | 20.00 | 27412 | 27451 | 28534 | 28563 | 27415 | 28199 | 27928.9 | 2.0 |
| GRO(C6-C12) | 20.00 | 27293 | 27392 | 28506 | 28556 | 27411 | 28184 | 27890.2 | 2.1 |
| GRO(C5-C10) | 20.00 | 21558 | 21673 | 22100 | 21481 | 20451 | 21117 | 21396.8 | 2.6 |
| SURROGATE | X | 1.00X | 2.00X | 3.00X | 4.00X | 5.00X | 8.00X | MEAN | %RSD |
| Bromofluorobenzene | 10.00 | 14346 | 14383 | 15057 | 18957 | 18920 | 18692 | 16725.9 | 14.0 |
| 1,1,1-Trifluorotoluene | 10.00 | 21580 | 20507 | 21018 | 21584 | 21776 | 21933 | 21400.0 | 2.5 |

VG39E02.MET

AA 05/05/14

FORM VI 8015P -2 1/96

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EE02002A 05/02/14 11:39
LFID & Datetime: EE02003A 05/02/14 12:18
LFID & Datetime: EE02004A 05/02/14 12:57
LFID & Datetime: EE02005A 05/02/14 13:36
LFID & Datetime: EE02006A 05/02/14 14:15
LFID & Datetime: EE02007A 05/02/14 14:54

| COMPOUND | RT OF STANDARDS (MIN) 1.0X | 2.5X | 5.0X | 25.0X | 50.0X | 75.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C6-C10) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(2MP-124TMB) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C5-C12) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C6-C12) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C5-C10) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| SURROGATE | 1.0X | 2.0X | 3.0X | 4.0X | 5.0X | 8.0X | RT | FROM | TO | WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 10.733 | 10.725 | 10.725 | 10.725 | 10.725 | 10.717 | 10.725 | 10.682 | 10.768 | 0.043 |
| 1,1,1-Trifluorotoluene | 3.217 | 3.217 | 3.217 | 3.208 | 3.208 | 3.208 | 3.212 | 3.088 | 3.336 | 0.124 |

VG39E02.MET

At
05/05/12

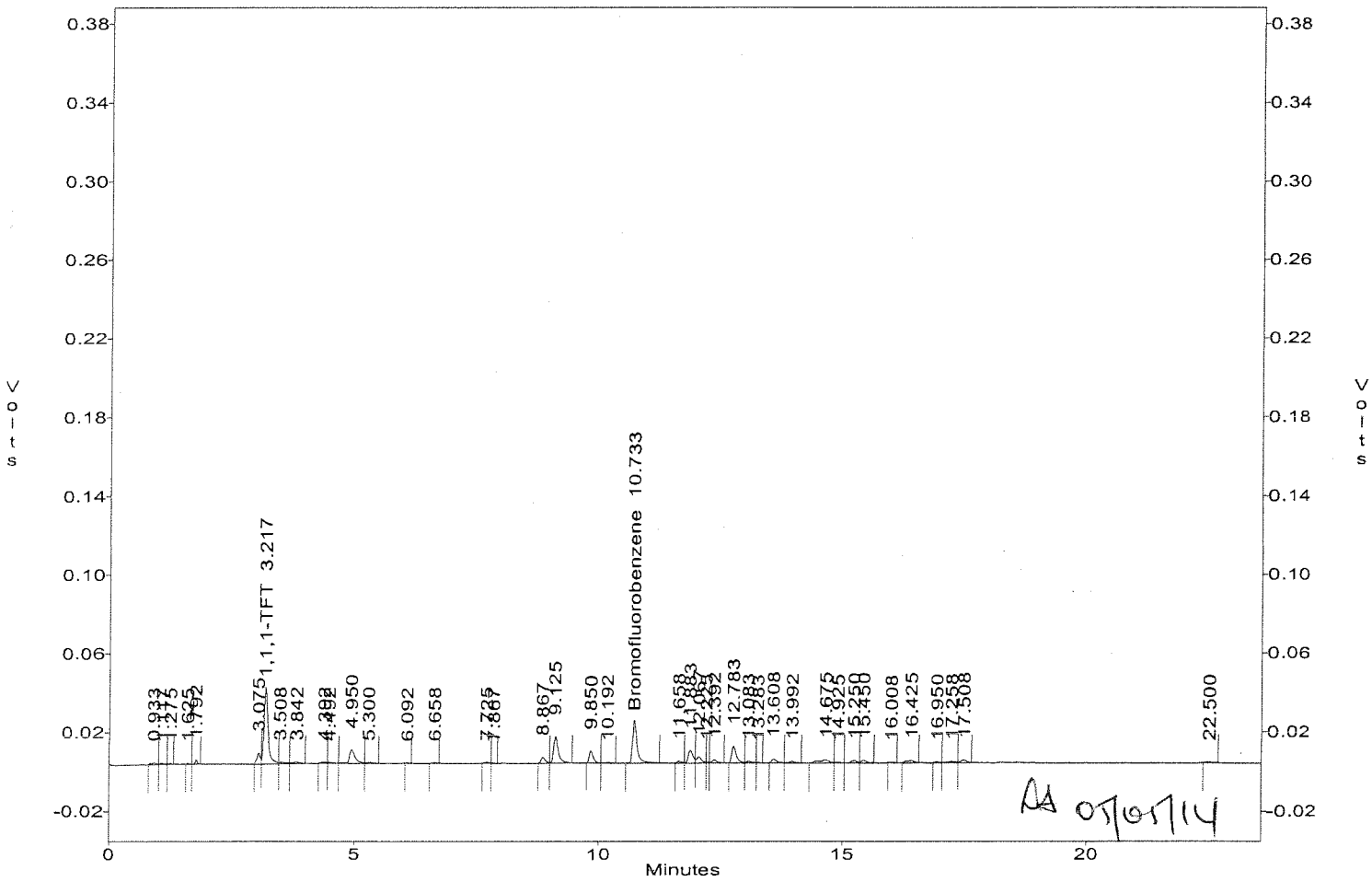
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.002
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0201 20/10
Acquired : May 02, 2014 11:39:55
Printed : May 05, 2014 09:31:15
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.217 | 215802.0 ✓ | 21400.0 | 10.00 |
| 22 | Bromofluorobenzene | 10.733 | 143459.0 ✓ | 16725.9 | 10.00 |
| G1 | GASOLINE(TOTAL) | | 556018.0 ✓ | 28261.9 | 20.00 |
| G2 | GRO(C6-C10) | | 428798.0 ✓ | 21355.4 | 20.00 |
| G3 | GRO(2MP-124TMB) | | 428798.0 ✓ | 21297.0 | 20.00 |
| G4 | GRO(C5-C12) | | 548233.0 ✓ | 27928.9 | 20.00 |
| G5 | GRO(C6-C12) | | 545864.0 ✓ | 27890.2 | 20.00 |
| G6 | GRO(C5-C10) | | 431167.0 ✓ | 21396.8 | 20.00 |

c:\ezchrom\chrom\ee02\ee02.002 -- Channel A



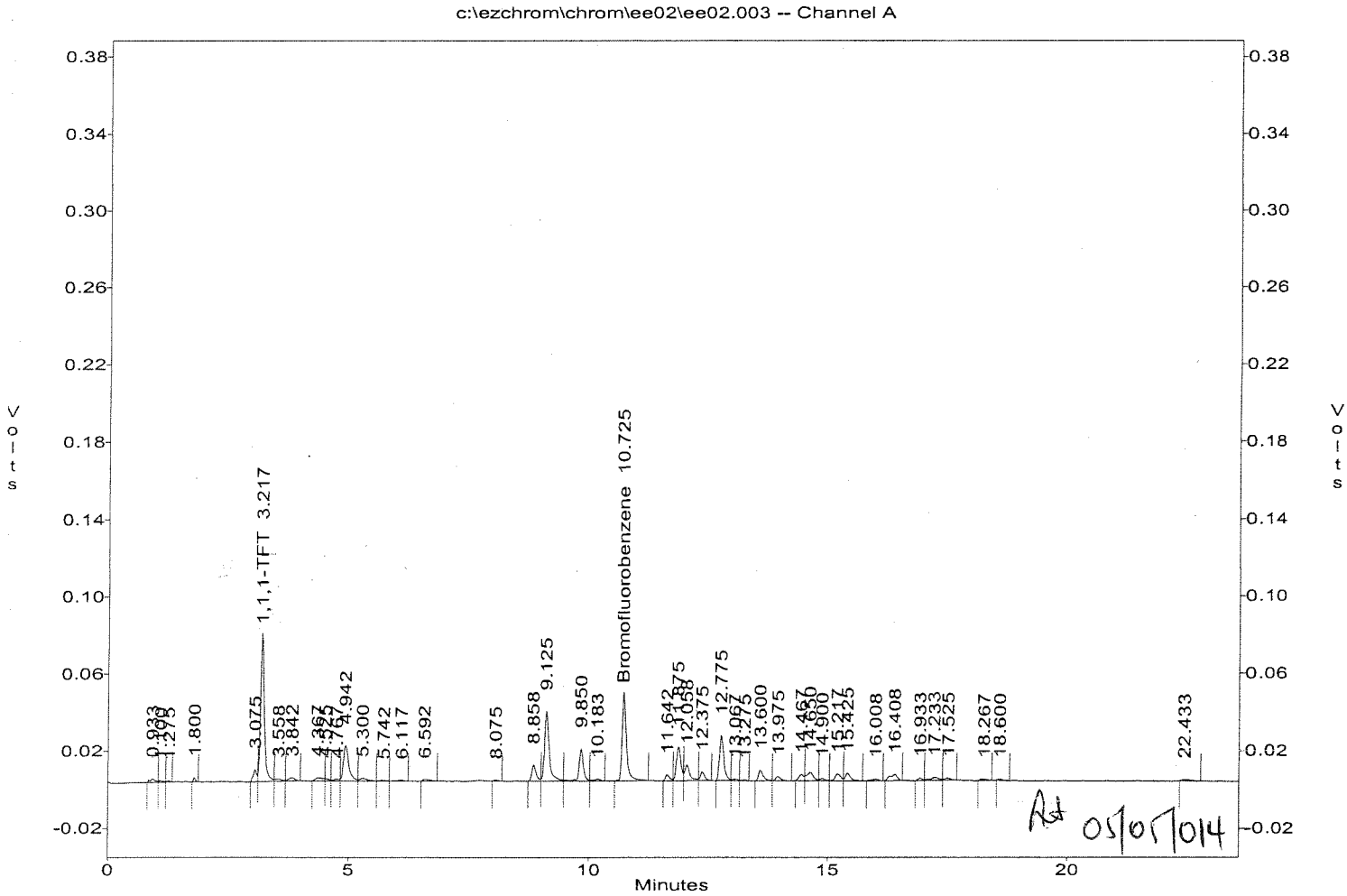

4020

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.003
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0202 50/20
Acquired : May 02, 2014 12:18:52
Printed : May 05, 2014 09:31:23
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.217 | 410145.0 | 21400.0 | 20.00 |
| 22 | Bromofluorobenzene | 10.725 | 287659.0 | 16725.9 | 20.00 |
| G1 | GASOLINE(TOTAL) | | 1385955.0 | 28261.9 | 50.00 |
| G2 | GRO(C6-C10) | | 1080683.0 | 21355.4 | 50.00 |
| G3 | GRO(2MP-124TMB) | | 1080683.0 | 21297.0 | 50.00 |
| G4 | GRO(C5-C12) | | 1372563.0 | 27928.9 | 50.00 |
| G5 | GRO(C6-C12) | | 1369606.0 | 27890.2 | 50.00 |
| G6 | GRO(C5-C10) | | 1083640.0 | 21396.8 | 50.00 |



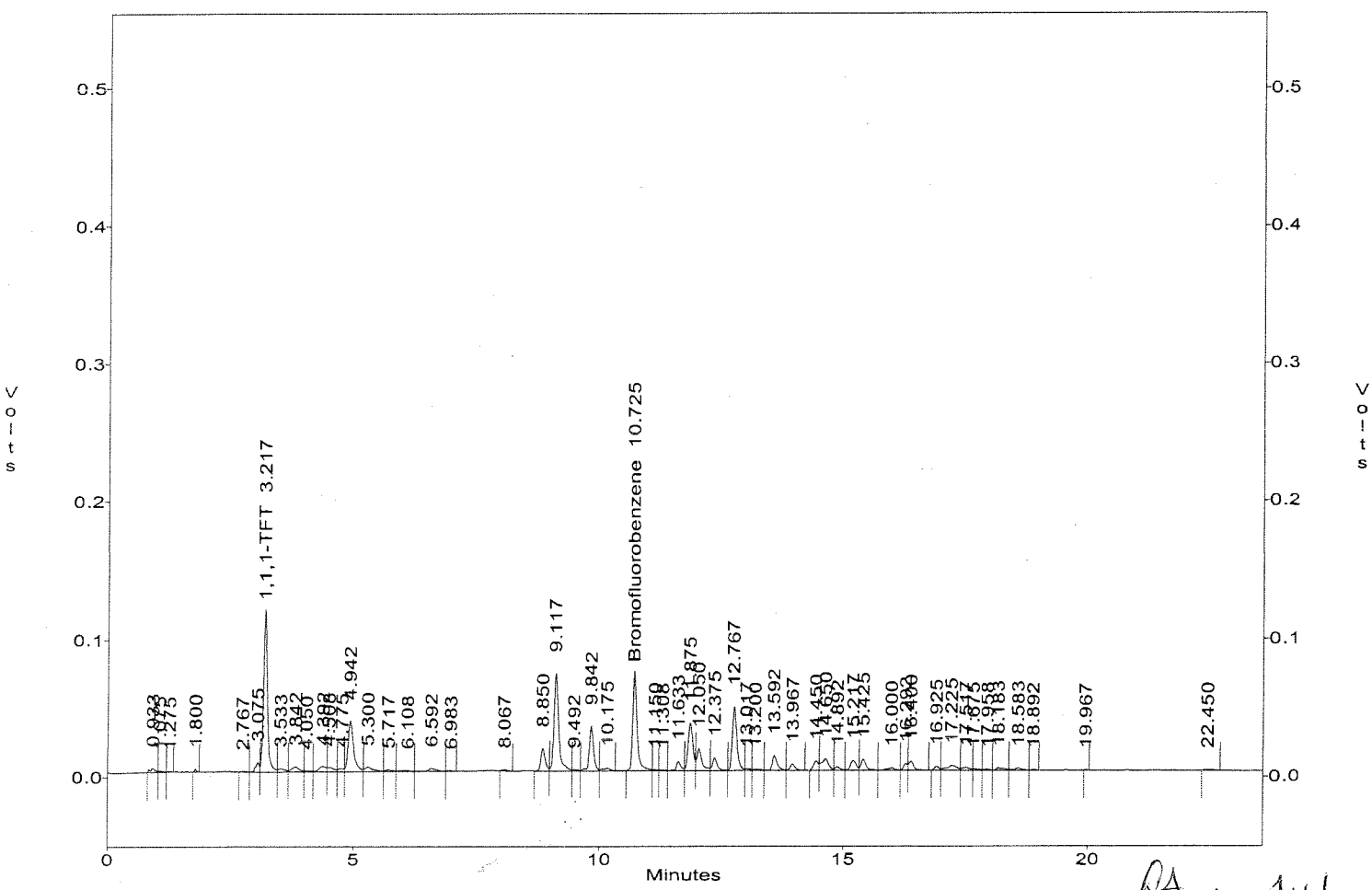
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.004
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0203 100/30
Acquired : May 02, 2014 12:57:53
Printed : May 05, 2014 09:31:56
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.217 | 630554.0 | 21400.0 | 30.00 |
| 26 | Bromofluorobenzene | 10.725 | 451712.0 | 16725.9 | 30.00 |
| G1 | GASOLINE(TOTAL) | | 2872293.0 | 28261.9 | 100.00 |
| G2 | GRO(C6-C10) | | 2207233.0 | 21355.4 | 100.00 |
| G3 | GRO(2MP-124TMB) | | 2196184.0 | 21297.0 | 100.00 |
| G4 | GRO(C5-C12) | | 2853376.0 | 27928.9 | 100.00 |
| G5 | GRO(C6-C12) | | 2850571.0 | 27890.2 | 100.00 |
| G6 | GRO(C5-C10) | | 2210038.0 | 21396.8 | 100.00 |

c:\ezchrom\chrom\ee02\ee02.004 -- Channel A




RS 05/05/14

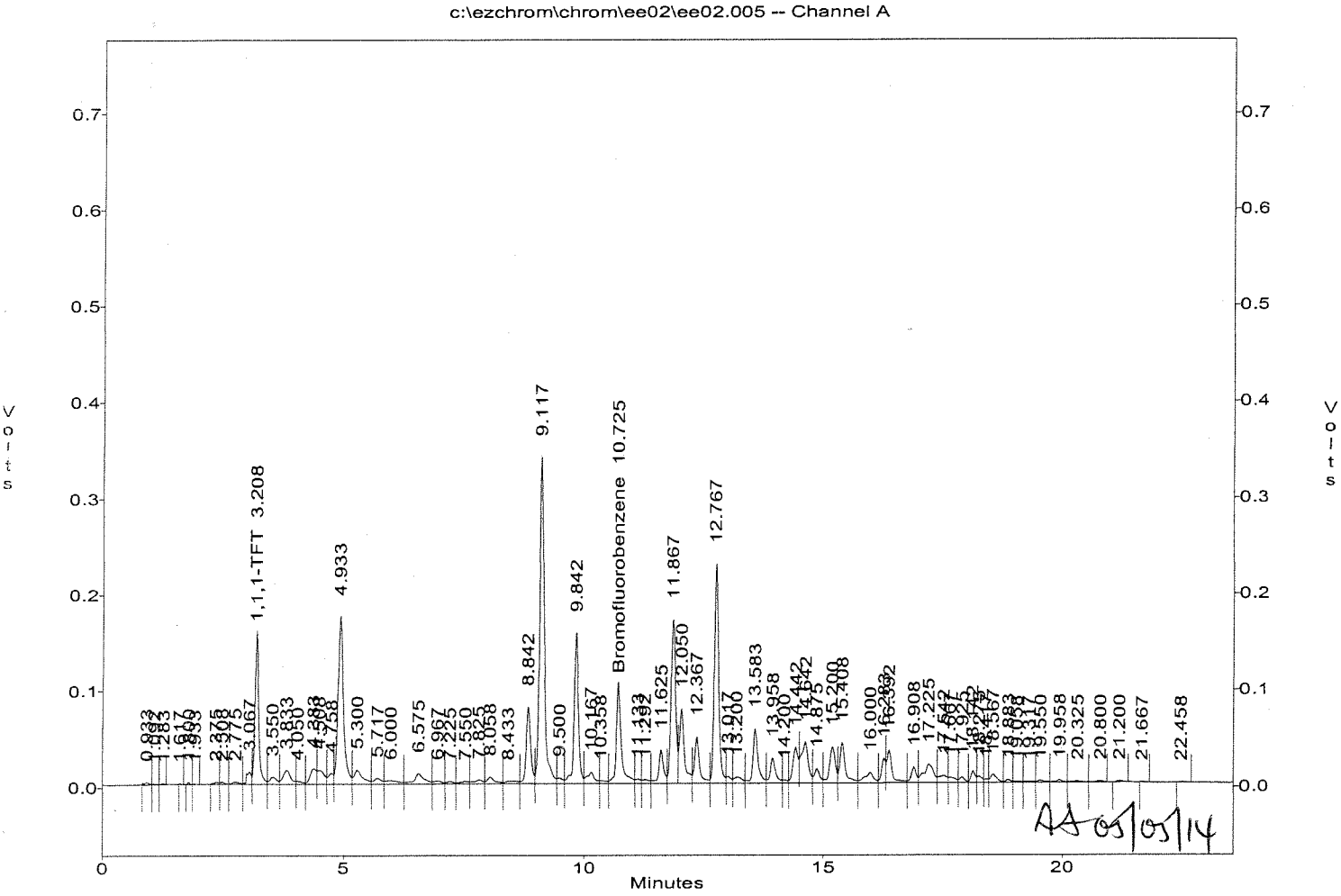
4022

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.005
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0204 500/40
Acquired : May 02, 2014 13:36:49
Printed : May 05, 2014 09:32:30
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.208 | 863365.0 | 21400.0 | 40.00 |
| 35 | Bromofluorobenzene | 10.725 | 758288.0 | 16725.9 | 40.00 |
| G1 | GASOLINE(TOTAL) | | 14446530.0 | 28261.9 | 500.00 |
| G2 | GRO(C6-C10) | | 10735124.0 | 21355.4 | 500.00 |
| G3 | GRO(2MP-124TMB) | | 10689338.0 | 21297.0 | 500.00 |
| G4 | GRO(C5-C12) | | 14281643.0 | 27928.9 | 500.00 |
| G5 | GRO(C6-C12) | | 14278004.0 | 27890.2 | 500.00 |
| G6 | GRO(C5-C10) | | 10740735.0 | 21396.8 | 500.00 |



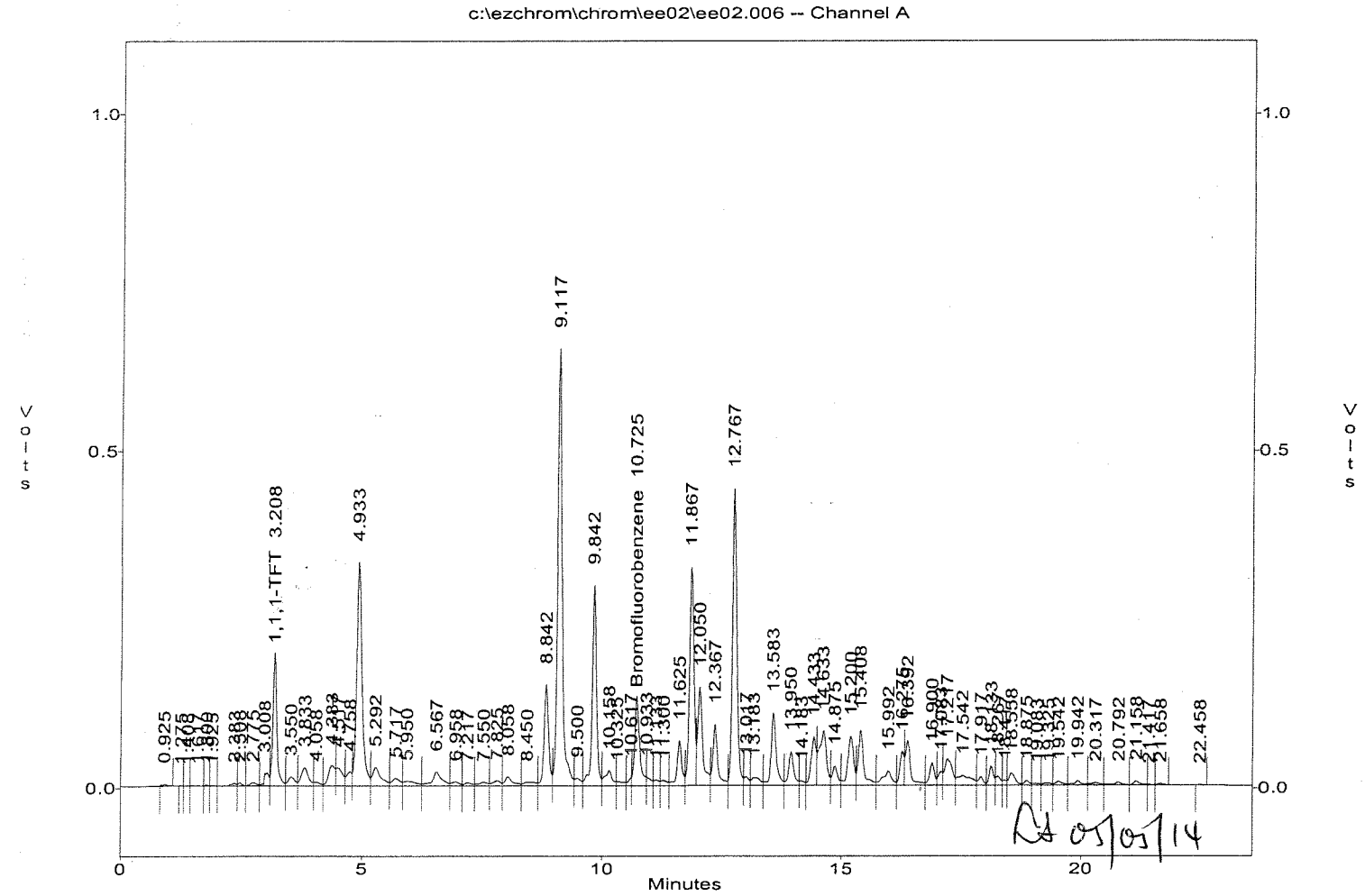

4023

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.006
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0205 1000/50
Acquired : May 02, 2014 14:15:41
Printed : May 05, 2014 09:34:01
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.208 | 1088814.0 | 21400.0 | 50.00 |
| 36 | Bromofluorobenzene | 10.725 | 946013.0 | 16725.9 | 50.00 |
| G1 | GASOLINE(TOTAL) | | 27834716.0 | 28261.9 | 1000.00 |
| G2 | GRO(C6-C10) | | 20441208.0 | 21355.4 | 1000.00 |
| G3 | GRO(2MP-124TMB) | | 20359526.0 | 21297.0 | 1000.00 |
| G4 | GRO(C5-C12) | | 27414706.0 | 27928.9 | 1000.00 |
| G5 | GRO(C6-C12) | | 27410822.0 | 27890.2 | 1000.00 |
| G6 | GRO(C5-C10) | | 20451276.0 | 21396.8 | 1000.00 |



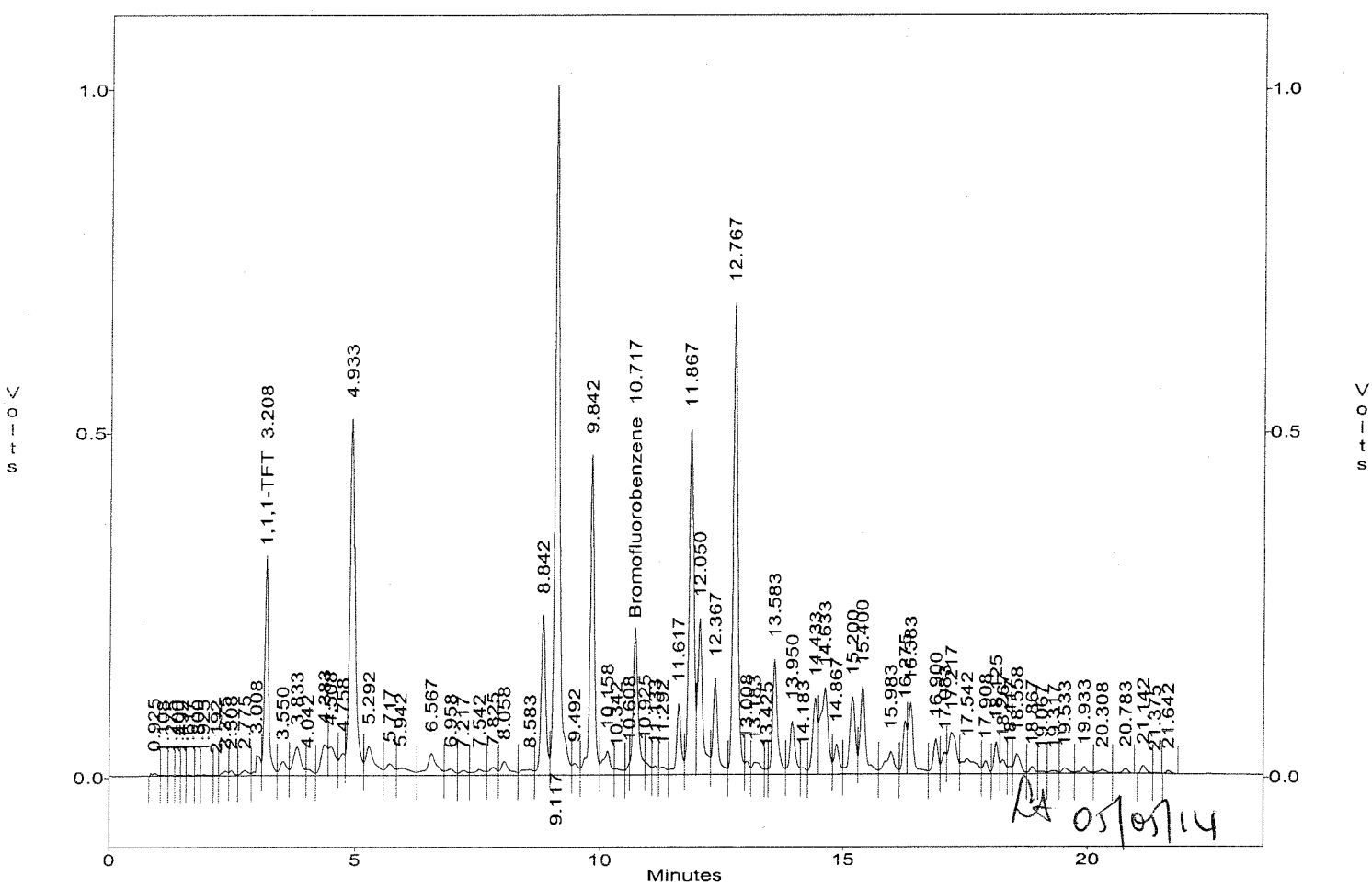
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.007
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0206 1500/80
Acquired : May 02, 2014 14:54:32
Printed : May 05, 2014 09:34:29
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 14 | 1,1,1-TFT | 3.208 | 1754672.0 | 21400.0 | 80.00 |
| 39 | Bromofluorobenzene | 10.717 | 1495364.0 | 16725.9 | 80.00 |
| G1 | GASOLINE(TOTAL) | | 42900720.0 | 28261.9 | 1500.00 |
| G2 | GRO(C6-C10) | | 31643026.0 | 21355.4 | 1500.00 |
| G3 | GRO(2MP-124TMB) | | 31542302.0 | 21297.0 | 1500.00 |
| G4 | GRO(C5-C12) | | 42297752.0 | 27928.9 | 1500.00 |
| G5 | GRO(C6-C12) | | 42275336.0 | 27890.2 | 1500.00 |
| G6 | GRO(C5-C10) | | 31675030.0 | 21396.8 | 1500.00 |

c:\ezchrom\chrom\ee02\ee02.007 -- Channel A




05/05/14

# SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EE02008A 05/02/2014 15:33
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 13053470 | 461.88 | -8 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10134937 | 474.58 | -5 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10247177 | 481.16 | -4 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 12590737 | 450.82 | -10 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 12493550 | 447.95 | -10 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10304659 | 481.60 | -4 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.717 | 10.674 | 10.760 | 40.0 | 16725.9 | 696321 | 41.63 | 4 | | 20 |
| 1,1,1-Trifluorotoluene | 3.208 | 3.084 | 3.332 | 40.0 | 21400.0 | 954586 | 44.61 | 12 | | 20 |

VG39E02.MET

AS
05/05/14

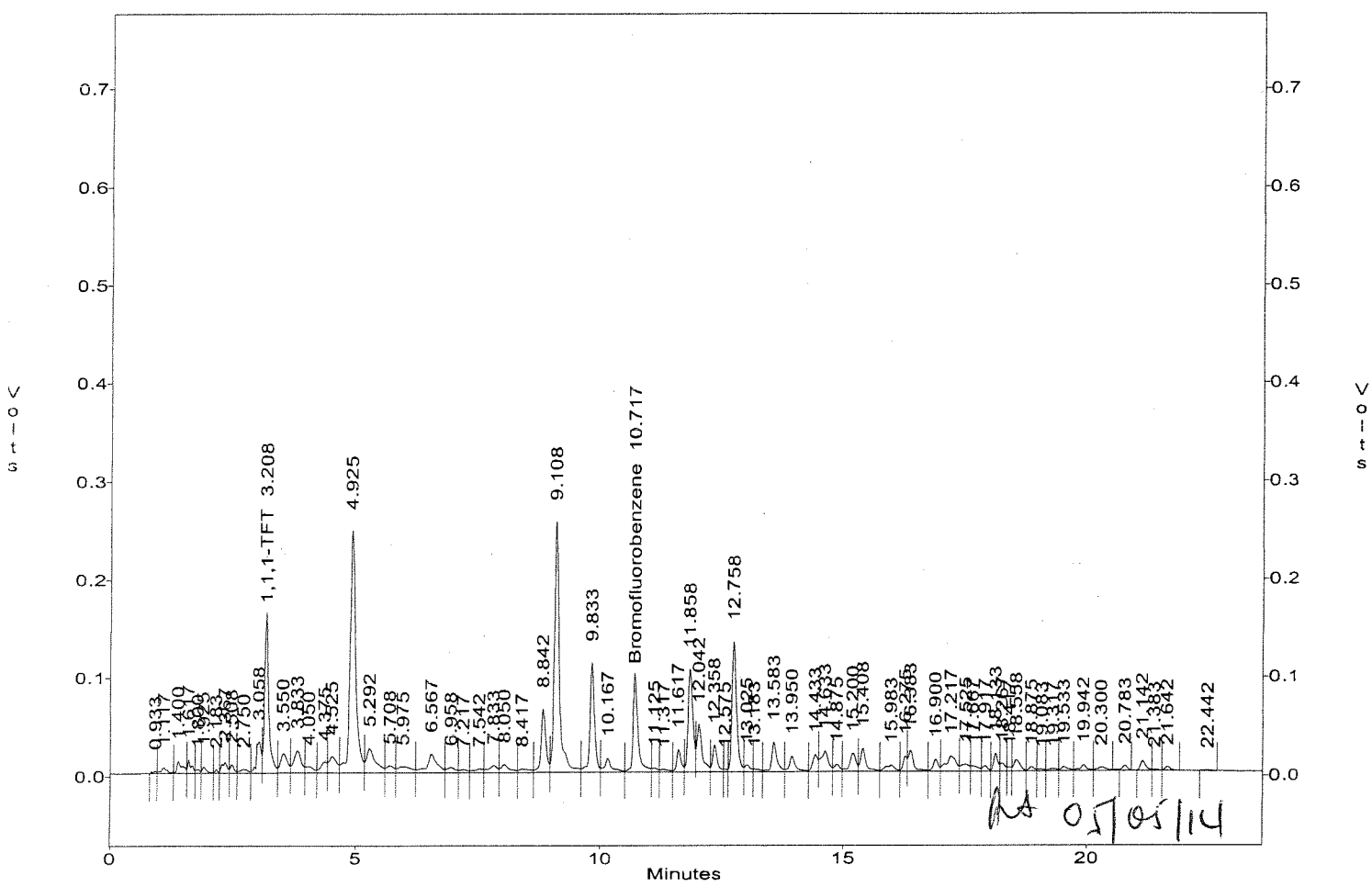
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.008
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : IVG39E02001 500/40
Acquired : May 02, 2014 15:33:24
Printed : May 05, 2014 09:35:55
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 12 | 1,1,1-TFT | 3.208 | 954586.0 | 21400.0 | 44.61 |
| 33 | Bromofluorobenzene | 10.717 | 696321.0 | 16725.9 | 41.63 |
| G1 | GASOLINE(TOTAL) | | 13053470.0 | 28261.9 | 461.88 |
| G2 | GRO(C6-C10) | | 10134937.0 | 21355.4 | 474.58 |
| G3 | GRO(2MP-124TMB) | | 10247177.0 | 21297.0 | 481.16 |
| G4 | GRO(C5-C12) | | 12590737.0 | 27928.9 | 450.81 |
| G5 | GRO(C6-C12) | | 12493550.0 | 27890.2 | 447.95 |
| G6 | GRO(C5-C10) | | 10304659.0 | 21396.8 | 481.60 |

c:\ezchrom\chrom\ee02\ee02.008 -- Channel A



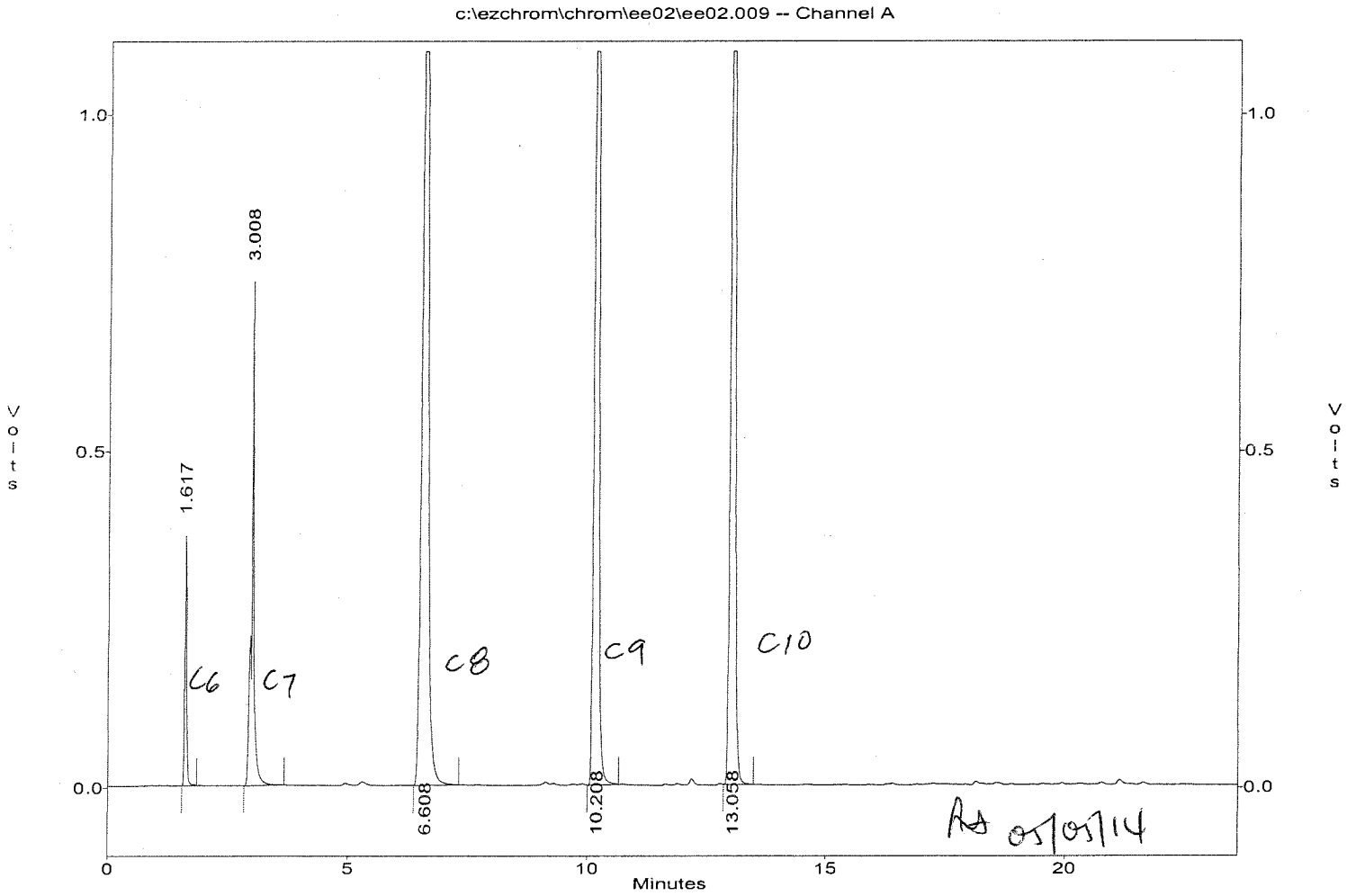

4028

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.009
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : GRO 1UL
Acquired : May 02, 2014 16:12:18
Printed : May 05, 2014 09:36:36
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 32746974.0 | 28261.9 | 1158.70 |
| G2 | GRO(C6-C10) | | 22835384.0 | 21355.4 | 1069.30 |
| G3 | GRO(2MP-124TMB) | | 23874628.0 | 21297.0 | 1121.03 |
| G4 | GRO(C5-C12) | | 32746974.0 | 27928.9 | 1172.51 |
| G5 | GRO(C6-C12) | | 32746974.0 | 27890.2 | 1174.14 |
| G6 | GRO(C5-C10) | | 23874628.0 | 21396.8 | 1115.80 |

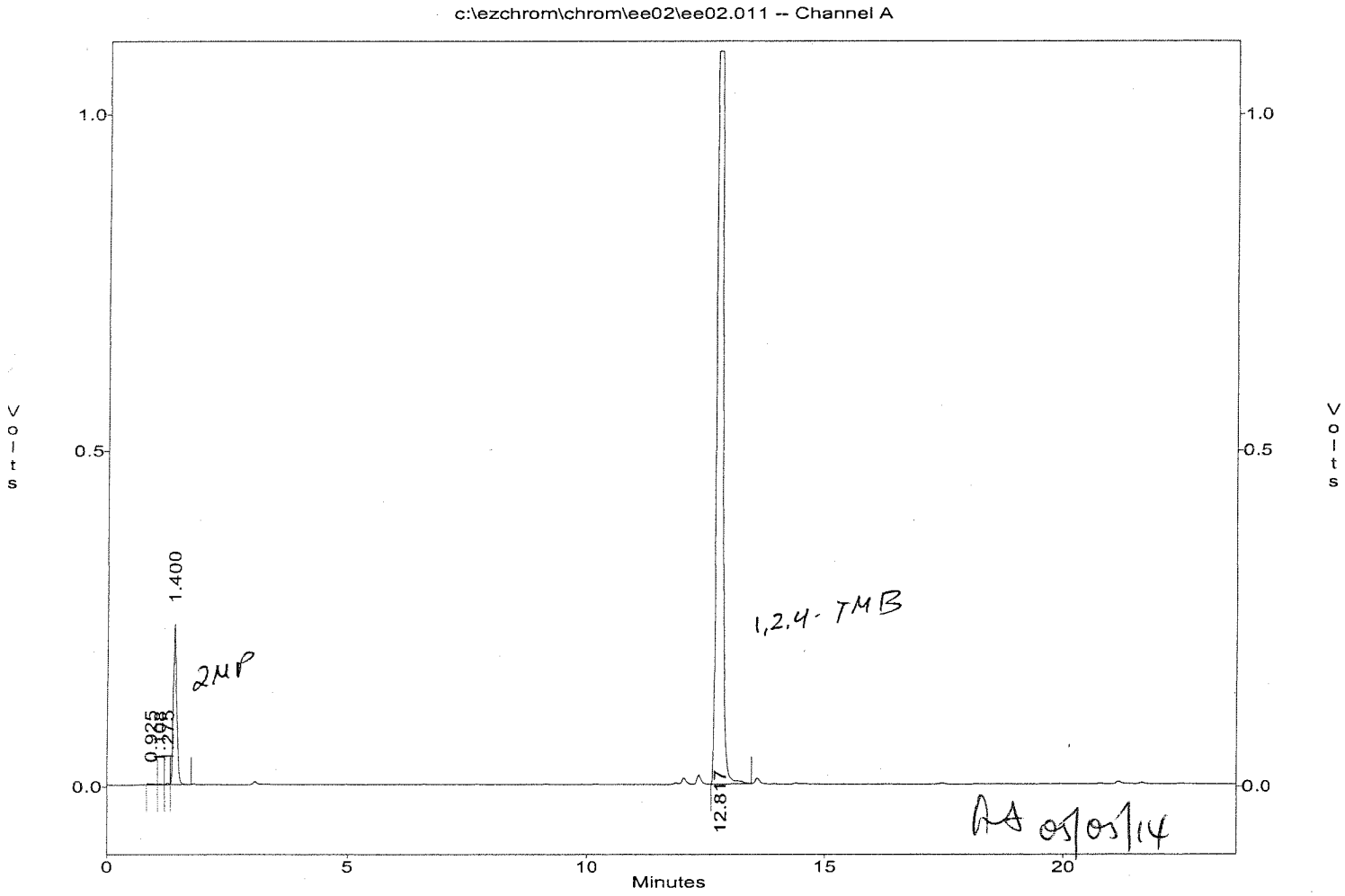


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.011
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : 2MP/1,2,4-TMB
Acquired : May 02, 2014 17:30:38
Printed : May 05, 2014 09:36:43
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 11435951.0 | 28261.9 | 404.64 |
| G2 | GRO(C6-C10) | | 10280670.0 | 21355.4 | 481.41 |
| G3 | GRO(2MP-124TMB) | | 11417507.0 | 21297.0 | 536.11 |
| G4 | GRO(C5-C12) | | 11428096.0 | 27928.9 | 409.19 |
| G5 | GRO(C6-C12) | | 10280670.0 | 27890.2 | 368.61 |
| G6 | GRO(C5-C10) | | 11428096.0 | 21396.8 | 534.10 |



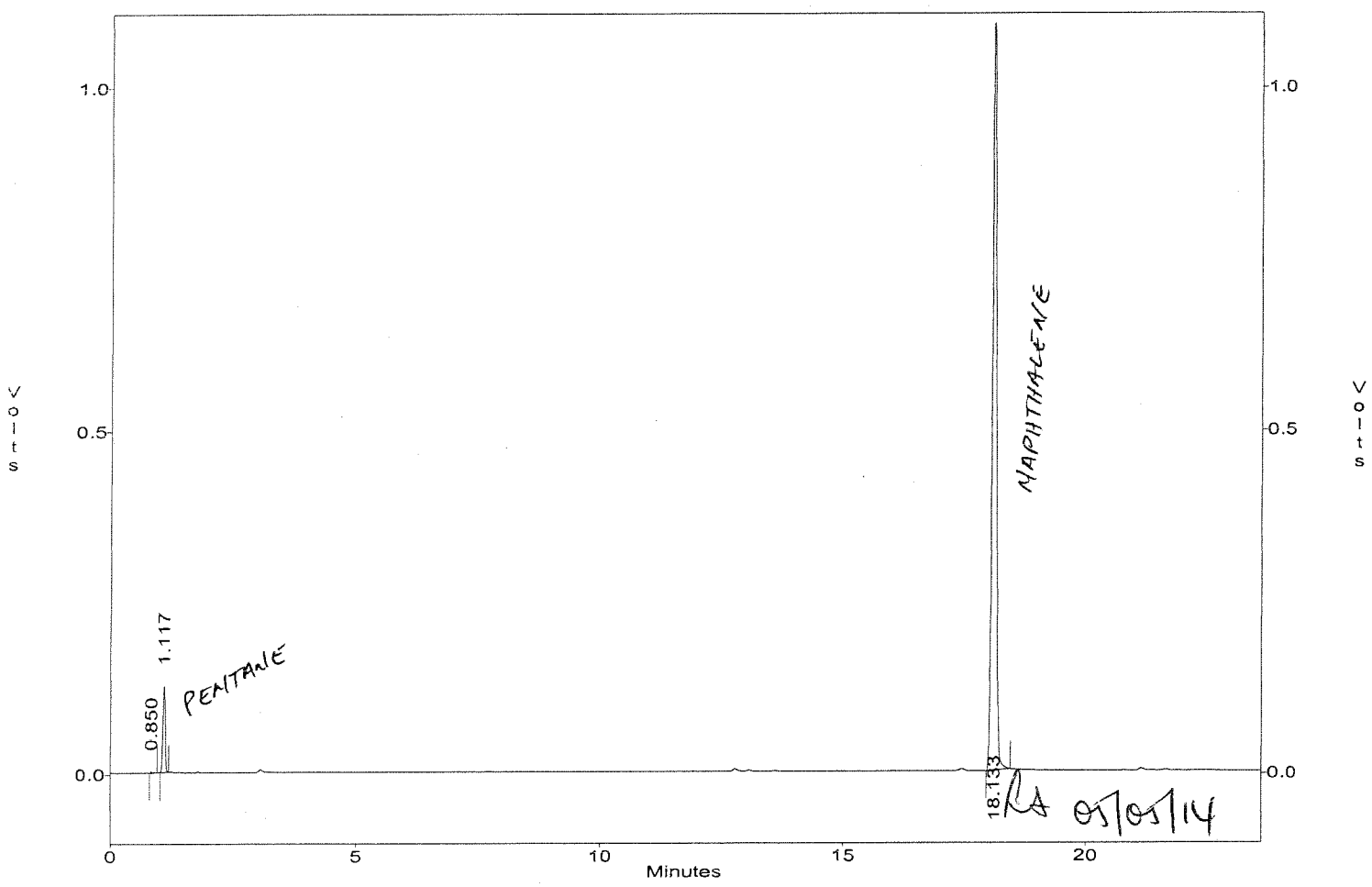
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.013
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : PENTANE/NAPHTHALENE
Acquired : May 02, 2014 18:48:50
Printed : May 05, 2014 09:37:29
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 7086992.0 | 28261.9 | 250.76 |
| G2 | GRO(C6-C10) | | 0.0 | 21355.4 | 0.00 |
| G3 | GRO(2MP-124TMB) | | 0.0 | 21297.0 | 0.00 |
| G4 | GRO(C5-C12) | | 6645801.0 | 27928.9 | 237.95 |
| G5 | GRO(C6-C12) | | 6645801.0 | 27890.2 | 238.28 |
| G6 | GRO(C5-C10) | | 0.0 | 21396.8 | 0.00 |

c:\ezchrom\chrom\ee02\ee02.013 -- Channel A

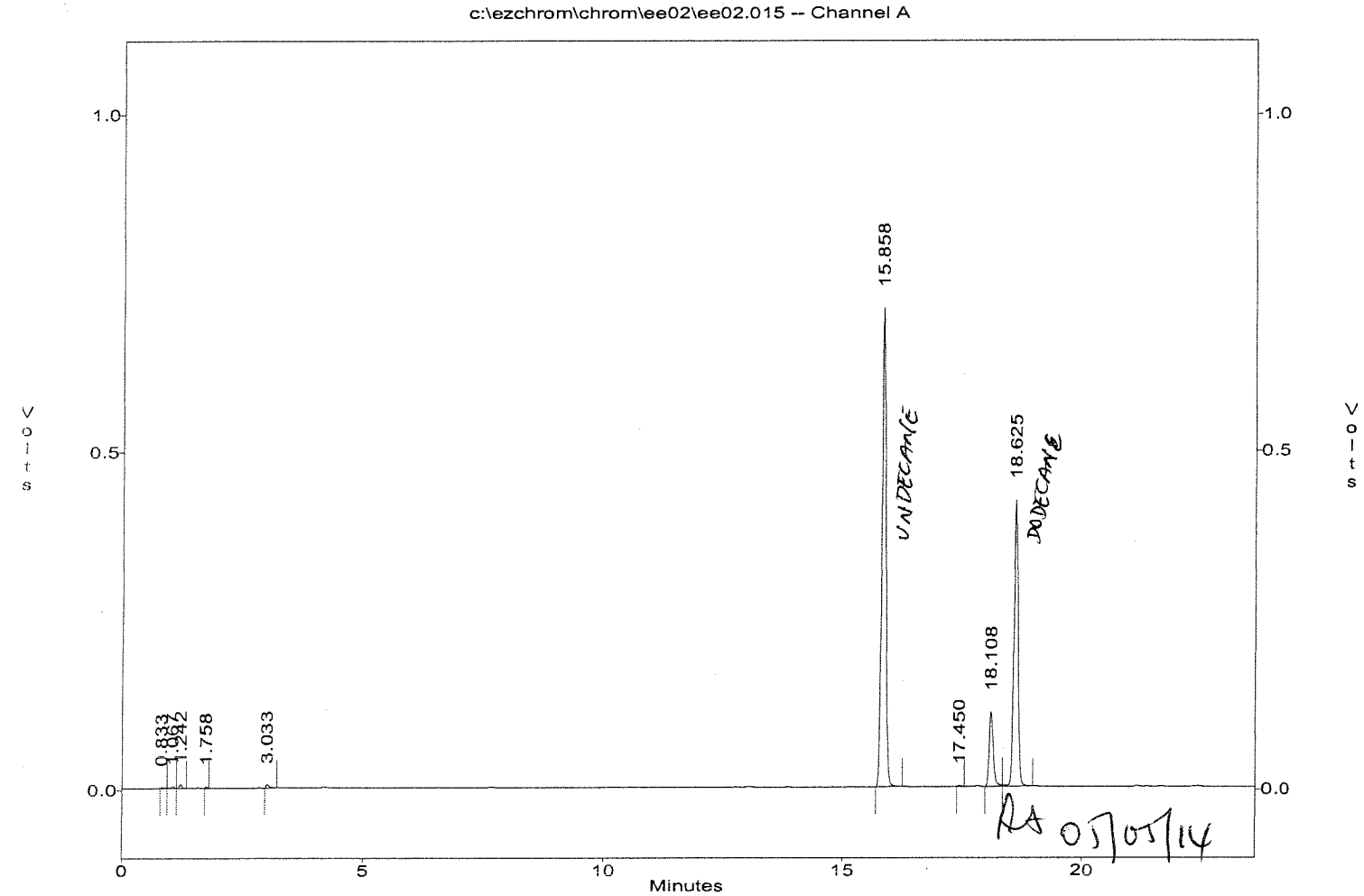


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.015
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : UNDECANE/DODECANE
Acquired : May 02, 2014 20:06:47
Printed : May 05, 2014 09:38:16
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 7612846.0 | 28261.9 | 269.37 |
| G2 | GRO(C6-C10) | | 30808.0 | 21355.4 | 1.44 |
| G3 | GRO(2MP-124TMB) | | 30808.0 | 21297.0 | 1.45 |
| G4 | GRO(C5-C12) | | 7599145.0 | 27928.9 | 272.09 |
| G5 | GRO(C6-C12) | | 7579660.0 | 27890.2 | 271.77 |
| G6 | GRO(C5-C10) | | 50293.0 | 21396.8 | 2.35 |



# DAILY CALIBRATIONS

CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EJ28003A 10/28/2014 14:42
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 14282132 | 505.35 | 1 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10720391 | 502.00 | 0 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10548734 | 495.32 | -1 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 14139696 | 506.27 | 1 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 14131865 | 506.70 | 1 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10728222 | 501.39 | 0 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.733 | 10.690 | 10.776 | 40.0 | 16725.9 | 744173 | 44.49 | 11 | | 20 |
| 1,1,1-Trifluorotoluene | 3.225 | 3.101 | 3.349 | 40.0 | 21400.0 | 867709 | 40.55 | 1 | | 20 |

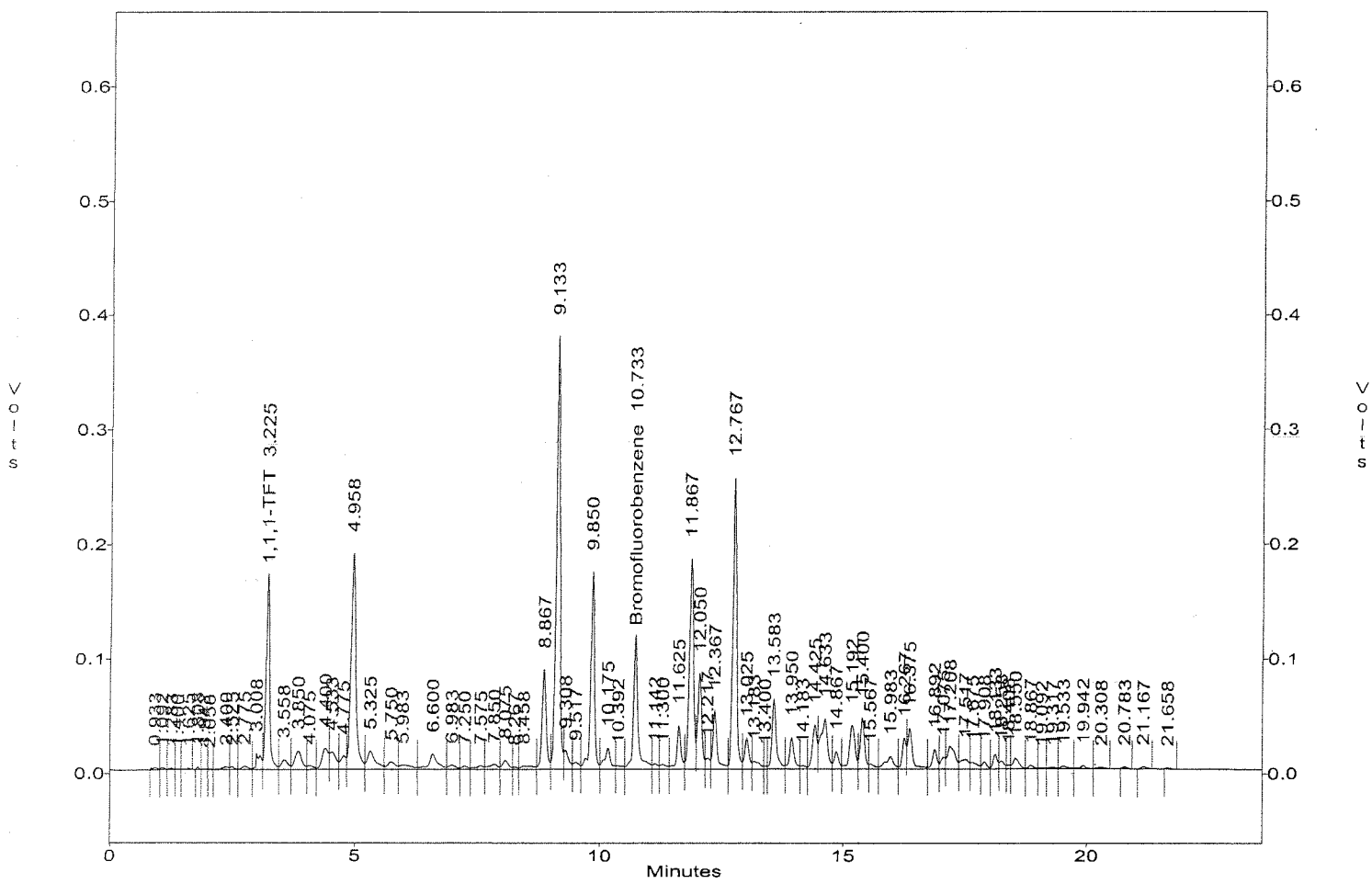
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EJ28\Ej28.003
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : CVG39E02751 500/40
Acquired : Oct 28, 2014 14:42:02
Printed : Oct 28, 2014 15:05:34
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 13 | 1,1,1-TFT | 3.225 | 867709.0 | 21400.0 | 40.55 |
| 39 | Bromofluorobenzene | 10.733 | 744173.0 | 16725.9 | 44.49 |
| G1 | GASOLINE(TOTAL) | | 14282132.0 | 28261.9 | 505.35 |
| G2 | GRO(C6-C10) | | 10720391.0 | 21355.4 | 502.00 |
| G3 | GRO(2MP-124TMB) | | 10548734.0 | 21297.0 | 495.32 |
| G4 | GRO(C5-C12) | | 14139696.0 | 27928.9 | 506.28 |
| G5 | GRO(C6-C12) | | 14131865.0 | 27890.2 | 506.70 |
| G6 | GRO(C5-C10) | | 10728222.0 | 21396.8 | 501.39 |

c:\ezchrom\chrom\EJ28\Ej28.003 -- Channel A



CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EJ28015A 10/28/2014 23:05
CONC UNIT : ppb

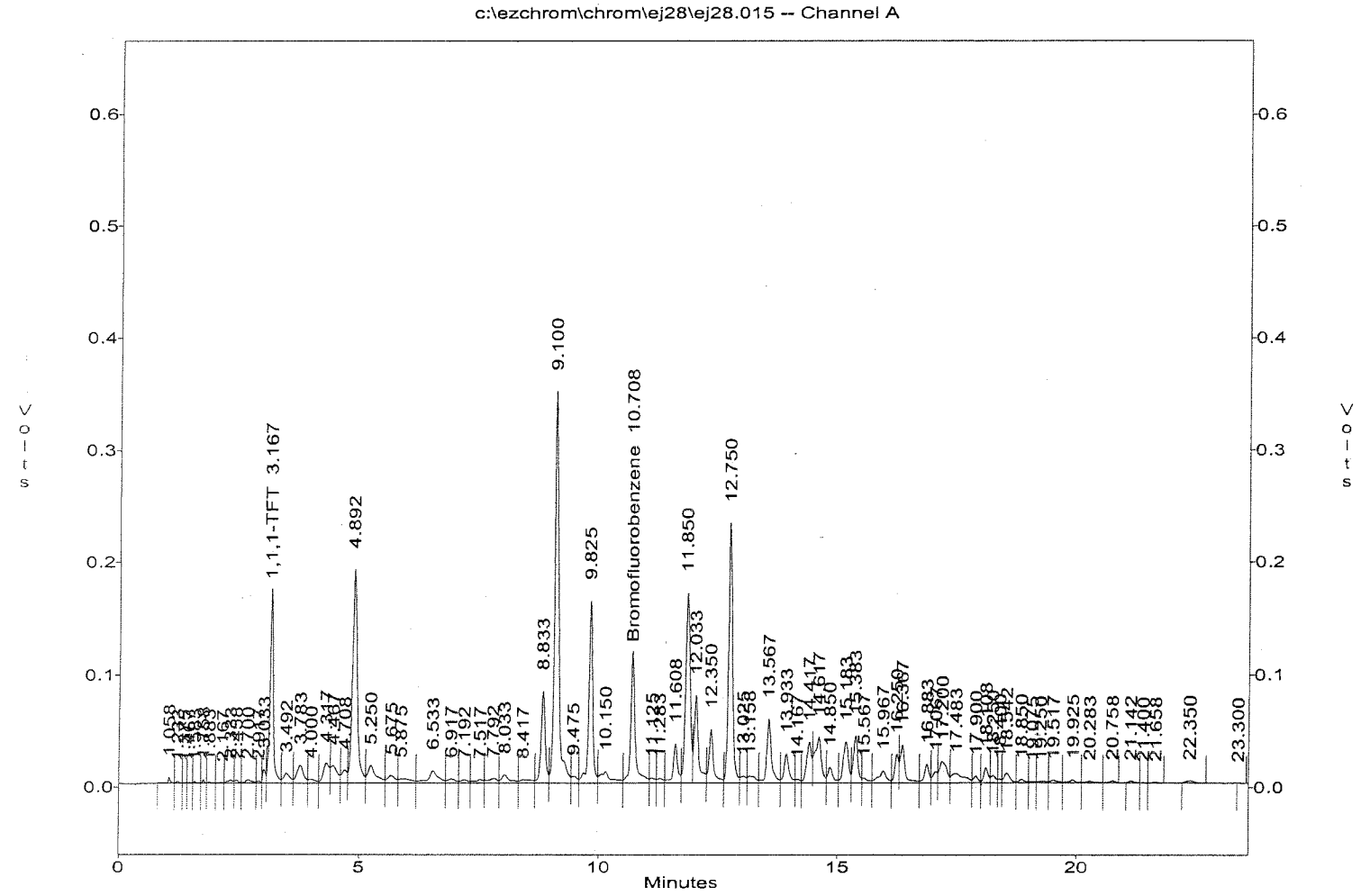
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 14031133 | 496.47 | -1 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10467119 | 490.14 | -2 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10425062 | 489.51 | -2 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 13833343 | 495.31 | -1 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 13815455 | 495.35 | -1 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10485007 | 490.03 | -2 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.708 | 10.665 | 10.751 | 40.0 | 16725.9 | 765132 | 45.74 | 14 | | 20 |
| 1,1,1-Trifluorotoluene | 3.167 | 3.043 | 3.291 | 40.0 | 21400.0 | 866965 | 40.51 | 1 | | 20 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ej28\ej28.015
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : CVG39E02752 500/40
Acquired : Oct 28, 2014 23:05:20
Printed : Oct 29, 2014 09:18:19
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 14 | 1,1,1-TFT | 3.167 | 866965.0 | 21400.0 | 40.51 |
| 37 | Bromofluorobenzene | 10.708 | 765132.0 | 16725.9 | 45.75 |
| G1 | GASOLINE(TOTAL) | | 14031133.0 | 28261.9 | 496.47 |
| G2 | GRO(C6-C10) | | 10467119.0 | 21355.4 | 490.14 |
| G3 | GRO(2MP-124TMB) | | 10425062.0 | 21297.0 | 489.51 |
| G4 | GRO(C5-C12) | | 13833343.0 | 27928.9 | 495.31 |
| G5 | GRO(C6-C12) | | 13815455.0 | 27890.2 | 495.35 |
| G6 | GRO(C5-C10) | | 10485007.0 | 21396.8 | 490.03 |



# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# PURGEABLE TPH

**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

Purge Volume = 5 ml

GASOLINE ICAL

GRO - SV2-07-02-13
2MP - SV2-09-06-01
TMB - SV2-05-23
PENTANE - SV2-07-01-03
NAPHTHALENE - SV2-05-24
UNDECANE - SV2-07-01-02
DODECANE - SV2-07-01-06

| | |
|---|---|
| Book #: | A39-047 |
| Instrument No.: | 39 |
| Analytical Sequence: | EE02 |
| Method File: | ☑ VG39E02 |
| | ☐ |
| | ☐ |
| Analytical Batch: | N/A |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-5030B | 3 |
| ☐ EMAX-BTEXM | 1 |
| ☑ EMAX-8015G | 4 |
| ☐ EMAX-AK101 | 2 |
| ☐ EMAX- | |

| STANDARDS ID | | Amt Added (µL) | Conc. (mg/L) |
|---|---|---|---|
| ICAL | — | — | — |
| ICAL | SV2-07-02-06 | See Analysis Run logbook | 5000 |
| ICV | SV2-07-02-04 | 0.5ml | 5000 |
| ICV | — | — | — |
| DCC GAS | — | — | — |
| DCC BTEX | — | — | — |
| DCC | — | — | — |
| BFB/TFT | SV2-09-08-03 (Sample) (~~Std~~) | SC 5/02/14 See Analysis Run Logbook | 100 |
| LCS/LCSD | — | — | — |
| MS/MSD | — | — | — |
| GRO (HC-Chain) | SV2-07-02-13 | 1ml | 2000 |
| | | | |

| Solvent | ID/Lot # |
|---|---|
| Methanol | |
| Reagent Water | RW2-12-001 |
| | Lot # |
| pH strip | — |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZC-3-BTEX SC | 5/05/14 |

Analyzed By: SC

Date: 5/02/14

Method: Vg39e02.met Batch: Ee02.seq Data: Ee02.030 - [Batch: ee02.seq]

File Edit Method Batch Options Analysis Control Window Help

Method | Data | Batch | Setup | Batch | Preview | Single | STOP | Recalib | Analyze | Reports

| Run | Sample ID | Method | Filename | Description |
|---|---|---|---|---|
| 1 | IB39E0201 | vg39e02.met | EE02.001 | |
| 2 | VG39E0201 20/10 0.02ml GAS ICAL STD / 0.5ml SUM | vg39e02.met | EE02.002 | |
| 3 | VG39E0202 50/20 0.05ml / 1ml | vg39e02.met | EE02.003 | |
| 4 | VG39E0203 100/30 0.1ml / 1.5ml | vg39e02.met | EE02.004 | |
| 5 | VG39E0204 500/40 0.5ml / 2ml | vg39e02.met | EE02.005 | GASOLINE ICAL |
| 6 | VG39E0205 1000/50 1ml / 2.5ml | vg39e02.met | EE02.006 | |
| 7 | VG39E0206 1500/80 1.5ml / 4ml | vg39e02.met | EE02.007 | |
| 8 | IVG39E02001 500/40 0.5ml GAS ICV STD / 2ml SUM | vg39e02.met | EE02.008 | GASOLINE ICV |
| 9 | GRO 1UL | vg39e02.met | EE02.009 | |
| 10 | RINSE | vg39e02.met | EE02.010 | |
| 11 | 2MP/1,2,4-TMB | vg39e02.met | EE02.011 | |
| 12 | RINSE | vg39e02.met | EE02.012 | |
| 13 | PENTANE/NAPHTHALENE | vg39e02.met | EE02.013 | FINAL |
| 14 | RINSE | vg39e02.met | EE02.014 | |
| 15 | UNDECANE/DODECANE | vg39e02.met | EE02.015 | |
| 16 | RINSE | vg39e02.met | EE02.016 | |
| 17 | IB | vg39e02.met | EE02.017 | |
| 18 | IB | vg39e02.met | EE02.018 | |
| 19 | IB | vg39e02.met | EE02.019 | |
| 20 | IB | vg39e02.met | EE02.020 | |
| 21 | IB | vg39e02.met | EE02.021 | |
| 22 | IB | vg39e02.met | EE02.022 | |
| 23 | IB SC 5/05/14 | vg39e02.met | EE02.023 | |
| 24 | IB | vg39e02.met | EE02.024 | |
| 25 | IB | vg39e02.met | EE02.025 | |
| 26 | IB | vg39e02.met | EE02.026 | |
| 27 | IB | vg39e02.met | EE02.027 | |
| 28 | IB | vg39e02.met | EE02.028 | |
| 29 | IB | vg39e02.met | EE02.029 | |
| 30 | IB | vg39e02.met | EE02.030 | |
| 31 | IB | vg39e02.met | EE02.031 | |
| 32 | IB | vg39e02.met | EE02.032 | |
| 33 | IB | vg39e02.met | EE02.033 | |
| 34 | IB | vg39e02.met | EE02.034 | |

Instrument 1: T-039

Start | EZChrom Chromatography | untitled - Paint | Exploring - Export | Method: Vg39e02.me... | Monday, May 05, 2014

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# PURGEABLE TPH



**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

Purge Volume = 5 ml

V639J18 (water): J206, J208, J200

| | |
|---|---|
| **Book #:** | A39-049 |
| **Instrument No.:** | 39 |
| **Analytical Sequence:** | EJ28 |
| **Method File:** | ☑ V639E02 |
| | ☐ |
| | ☐ |
| **Analytical Batch:** | CV639E02751 |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-5030B | 3 |
| ☑ EMAX-8015G | 5 |
| ☐ EMAX-AK101 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | Amt Added (µL) | Conc. (mg/L) |
|---|---|---|
| ICAL | | |
| ICAL | | SC 10/29/14 |
| ICV | | |
| ICV | | |
| DCC GAS SV2-07-02-24 | 0.5ml | 5000 |
| DCC | | SC 10/29/14 |
| DCC | | |
| BFB/TFT SV2-09-17-03 (Sample) | 2ml | 100 |
| (DCC) | 2ml | 100 |
| LCS/LCSD SV2-07-02-20 | 0.5ml | 5000 |
| MS/MSD ↓ | ↓ | ↓ |
| GRO (HC-Chain) SV2-07-02-13 | 1ml | 2000 |
| | | |

| Solvent | ID/Lot # |
|---|---|
| Methanol | |
| Reagent Water | RW2-12-001 |
| | Lot # |
| pH strip | HC 412469 |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZC-3-BTEX | |

Analyzed By: SC

Date: 10/28/14

Method: Vg39e02.met Batch: Ej28.seq Data: Ej28.006 - [Batch: ej28.seq]

File Edit Method Batch Options Analysis Control Window Help

Method | Data | Batch | Setup | Batch | Preview | Single | STOP | Recalib | Analyze | Reports

| Run | Sample ID | Method | Filename | Description |
|---|---|---|---|---|
| 1 | IB39J2801 | vg39e02.met | EJ28.001 | |
| 2 | GRO 1uL | vg39e02.met | EJ28.002 | SV2-07-02-13 |
| 3 | CVG39E02751 500/40 | vg39e02.met | EJ28.003 | |
| 4 | VG39J18L 5.0ML W | vg39e02.met | EJ28.004 | Conc. 500/40 |
| 5 | VG39J18C 5.0ML W NOT evaluated | vg39e02.met | EJ28.005 | AIR PROBLEM, NOT EVALUATED |
| 6 | VG39J18Y 5.0ML W | vg39e02.met | EJ28.006 | Conc. 500/40 |
| 7 | VG39J18Q 5.0ML W NOT evaluated | vg39e02.met | EJ28.007 | |
| 8 | VG39J18B 5.0ML W | vg39e02.met | EJ28.008 | |
| 9 | 14J206-01 5.0ML W | vg39e02.met | EJ28.009 | PH~7 |
| 10 | 14J206-02 5.0ML W | vg39e02.met | EJ28.010 | PH~7 |
| 11 | 14J206-03 5.0ML W | vg39e02.met | EJ28.011 | PH~7 |
| 12 | 14J208-01 5.0ML W | vg39e02.met | EJ28.012 | PH<2 FINAL |
| 13 | 14J208-02 5.0ML W | vg39e02.met | EJ28.013 | PH<2 |
| 14 | 14J208-03 5.0ML W | vg39e02.met | EJ28.014 | PH<2 |
| 15 | CVG39E02752 500/40 | vg39e02.met | EJ28.015 | |
| 16 | BLANK | vg39e02.met | EJ28.016 | |
| 17 | 14J200-05 5.0ML W | vg39e02.met | EJ28.017 | PH<2 |
| 18 | 14J200-02 5.0ML W | vg39e02.met | EJ28.018 | PH<2 |
| 19 | 14J200-02M 5.0ML W | vg39e02.met | EJ28.019 | PH<2 |
| 20 | 14J200-02S 5.0ML W | vg39e02.met | EJ28.020 | PH<2 |
| 21 | 14J200-01 5.0ML W | vg39e02.met | EJ28.021 | PH<2 |
| 22 | 14J200-03 5.0ML W | vg39e02.met | EJ28.022 | PH<2 |
| 23 | 14J200-04 5.0ML W | vg39e02.met | EJ28.023 | PH<2 |
| 24 | CVG39E02753 500/40 | vg39e02.met | EJ28.024 | |
| 25 | IB | vg39e02.met | EJ28.025 | |
| 26 | IB | vg39e02.met | EJ28.026 | |
| 27 | IB | vg39e02.met | EJ28.027 | |
| 28 | IB SC 10/29/14 | vg39e02.met | EJ28.028 | |
| 29 | IB | vg39e02.met | EJ28.029 | |
| 30 | IB | vg39e02.met | EJ28.030 | |
| 31 | IB | vg39e02.met | EJ28.031 | |
| 32 | IB | vg39e02.met | EJ28.032 | |
| 33 | IB | vg39e02.met | EJ28.033 | |
| 34 | IB | vg39e02.met | EJ28.034 | |

Waiting For Trigger...

Start | EZChrom Chromatogra... | Method: Vg55h01h.me... | untitled - Paint | Method: Vg39e02.met... | Exploring - Export | Method: Vg35e02... | Tuesday, October 28, 2014

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**PROJECT:** **RED HILL PHASE IB**

**SDG:** **14K089**


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| GC-VOA | METHOD 5030B/8015B | 4000 – 4045 |
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| HPLC | ** | 6000 – |
| METALS | ** | 7000 – |
| WET | ** | 8000 – |
| OTHERS | ** | 9000 – |


** - Not Requested

**EMAX**
**LABORATORIES, INC.**
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 12-02-2014
EMAX Batch No.: 14K089

Attn: Carolyn Scala

Battelle
301 South State St., Suite N001
Newton PA 18940

Subject: Laboratory Report
Project: Red Hill Phase 1b

---

Enclosed is the Laboratory report for samples received on 11/13/14.
The data reported relate only to samples listed below :

| Sample ID | Control # | Col Date | Matrix | Analysis |
|---|---|---|---|---|
| TR1P111214 | K089-01 | 11/12/14 | WATER | TPH GASOLINE |
| HW111214-01 | K089-02 | 11/12/14 | WATER | TPH GASOLINE |
| | | | | TPH |
| | | | | PAH BY 8270C SIM ULTRA LOW |
| HW111214-02 | K089-03 | 11/12/14 | WATER | TPH GASOLINE |
| | | | | TPH |
| | | | | PAH BY 8270C SIM ULTRA LOW |

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

# CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. * 14K089

PROJECT CODE:

CLIENT Battelle
PROJECT Red Hill Phase 1b
COORDINATOR Carolyn Scala
TEL 215-504-5003 FAX 614-458-6620 EMAIL scalac@battelle.com
SEND REPORT TO Carolyn Scala
COMPANY Battelle
ADDRESS 301 South State St., Ste. N001, Newtown, PA 18940
EMAX PM Andy Mai

| MATRIX CODE | PRESERVATIVE CODE |
|---|---|
| DW=Drinking Water | IC = Ice |
| GW=Ground Water | HC = HCl |
| WW=Waste Water | HN=HNO3 |
| SD=Solid Waste SL=Sludge | SH=NaOH |
| SS=Soil/ Sediment | ST=Na2S2O3 |
| WP=Wipes PP=Pure Products | ZA=Zinc Acetate |
| AR=Air | HS=$H_2SO_4$ |
| O= | |

ANALYSIS REQUIRED: PAHs (SW8270C); TPH-GRO (EPA 8015B-P); TPH-DRO, HRO (EPA 8015B m-E)

TAT:
- ☐ Rush ____hrs.
- ☐ Rush ____days
- ☐ 7 days
- ☐ 14 days
- ☒ 21 days
- ☐ 30 days
- ☐ ____days
- ☐

| LAB | SAMPLE ID CLIENT | SAMPLING LOCATION | DATE | TIME | CONTAINER NO. | SIZE | TYPE | MATRIX CODE | QC | PRESERVATIVE CODE PAHs (SW8270C) IC | TPH-GRO (EPA 8015B-P) IC | TPH-DRO, HRO (EPA 8015B m-E) IC | | | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TRIP111214 | | 11/12/14 | 0930 | 3 | 40 mL | VOA | O | X | | X | | | | | | | |
| 2 | HW111214-01 | 99-048 Koaba Way | ↓ | 1000 | 7 | 40 mL 1-L | VOA + Amber | O | | X | X | X | | | | | | |
| 3 | HW111214-02 | ↓ | ↓ | 1015 | 7 | ↓ | ↓ | O | | X | X | X | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | | |

Instructions

| Cooler # | Temp. (°C) | Sample #s |
|---|---|---|
| 1 | 5.4 | |

SAMPLER

COURIER/AIRBILL

| RELINQUISHED BY | Date | Time | RECEIVED BY |
|---|---|---|---|
| James Terry / James Terry | 11/12/14 | 1400 | |
| | 11-13-14 | 0930 | Stefanie |

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

# SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

| Type of Delivery | Airbill / Tracking Number | ECN 14K089 |
|---|---|---|
| ☑ Fedex ☐ UPS ☐ GSO ☐ Others | 8764 1243 2545 | Recipient Shegfame |
| ☐ EMAX Courier ☐ Client Delivery | | Date 11-13-14 Time 0931 |

## COC INSPECTION

| | | | | | |
|---|---|---|---|---|---|
| ☑ Client Name | ☑ Client PM/FC | ☐ Sampler Name | ☑ Sampling Date/Time | ☑ Sample ID | ☑ Matrix |
| ☑ Address | ☑ Tel # / Fax # | ☐ Courier Signature | ☑ Analysis Required | ☑ Preservative (if any) | ☑ TAT |
| Safety Issues (if any) | ☐ High concentrations expected | ☐ From Superfund Site | ☐ Rad screening required | | |

Note:

## PACKAGING INSPECTION

| | | | | | |
|---|---|---|---|---|---|
| Container | ☑ Cooler | ☐ Box | ☐ Other | | |
| Condition | ☑ Custody Seal | ☐ Intact | ☐ Damaged | | |
| Packaging | ☑ Bubble Pack | ☐ Styrofoam | ☐ Popcorn | ☑ Sufficient | ☐ |
| Temperatures (Cool, ≤6 °C but not frozen) | ☑ Cooler 1 5.4 °C | ☐ Cooler 2 °C | ☐ Cooler 3 °C | ☐ Cooler 4 °C | ☐ Cooler 5 °C |
| | ☐ Cooler 6 °C | ☐ Cooler 7 °C | ☐ Cooler 8 °C | ☐ Cooler 9 °C | ☐ Cooler 10 °C |
| *Thermometer:* | *A - S/N* 130538205 | *B - S/N* 140252070 | *C - S/N* | *D - S/N* | |

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.** FM 10/27/14

Note:

## DISCREPANCIES

| LabSampleID | LabSampleContainerID | Code | ClientSample Label ID / Information | Corrective Action |
|---|---|---|---|---|
| 2-3 | 4-17 | D10 | | 36 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

11/13/14

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

**NOTES/OBSERVATIONS:**

**LEGEND:**

☐ **Continue to next page.**

| Code | Description- Sample Management | Code | Description-Sample Management | Code | Description-Sample Management |
|---|---|---|---|---|---|
| D1 | Analysis is not indicated in _____ | D13 | Out of Holding Time | R1 | Proceed as indicated in ☐ COC ☐ Label |
| D2 | Analysis mismatch COC vs label | D14 | Bubble is >6mm | R2 | Refer to attached instruction |
| D3 | Sample ID mismatch COC vs label | D15 | No trip blank in cooler | R3 | Cancel the analysis |
| D4 | Sample ID is not indicated in _____ | D16 | Preservation not indicated in _____ | R4 | Use vial with smallest bubble first |
| D5 | Container -[improper] [leaking] [broken] | D17 | Preservation mismatch COC vs label | R5 | Log-in with latest sampling date and time+1 min |
| D6 | Date/Time is not indicated in _____ | D18 | Insufficient chemical preservative | R6 | Adjust pH as necessary |
| D7 | Date/Time mismatch COC vs label | D19 | Insufficient Sample | R7 | Filter and preserved as necessary |
| D8 | Sample listed in COC is not received | D20 | No filtration info for dissolved analysis | R8 | |
| D9 | Sample received is not listed in COC | D21 | No sample for moisture determination | R9 | |
| D10 | No initial/date on corrections in COC/label | D22 | | R10 | |
| D11 | Container count mismatch COC vs received | D23 | | R11 | |
| D12 | Container size mismatch COC vs received | D24 | | R12 | |

**REVIEWS:**

**Sample Labeling** _____ **Date** 11/13/14

**SRF** _____ **Date** 11/13/14

**PM** _____ **Date** 11/13/14

00016

00100

**FedEx** Express **NEW Package US Airbill**

FedEx Tracking Number 8764 1243 2545

**1 From** This portion can be removed for Recipient's records.

Date 11/12/14 FedEx Tracking Number 876412432545

Sender's Name CARLINE HIGART Phone 808 833-2225

Company ENVIRONET, INCORPORATED

Address 650 IWILEI RD STE 204 Dept./Floor/Suite/Room

City HONOLULU State HI ZIP 96817-5812

**2 Your Internal Billing Reference**

**3 To**

Recipient's Name Phone

Company

Address 1435 W. 205th Street

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

0441295593

8764 1243 2545

RECIPIENT: PEEL HERE

fedex.com 1.800.GoFedEx 1.800.463.3339

Recipient's Copy

**4 Express Package Service**

Packages up to 150 lbs. Check boxes below for additional options.

**Next Business Day**

- ☐ **FedEx First Overnight** Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☒ **FedEx Priority Overnight** Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ **FedEx Standard Overnight** Next business afternoon.* Saturday Delivery NOT available.

**2 or 3 Business Days**

- ☐ **NEW FedEx 2Day A.M.** Second business morning.* Saturday Delivery NOT available.
- ☐ **FedEx 2Day** Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ **FedEx Express Saver** Third business day.* Saturday Delivery NOT available.

**5 Packaging** *Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

**6 Special Handling and Delivery Signature Options**

☐ **SATURDAY Delivery** NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ **No Signature Required** Package may be left without obtaining a signature for delivery.

☐ **Direct Signature** Someone at recipient's address may sign for delivery. *Fee applies.*

☐ **Indirect Signature** If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

**Does this shipment contain dangerous goods?**

One box must be checked.

☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

**7 Payment** *Bill to:*

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611

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CA-US **LAX**

Part # 156297-455 RIN/1/1/1 SHP/1/1/1 ©ERDSE 11/12v2©2014

## REPORTING CONVENTIONS

### DATA QUALIFIERS:

| Lab Qualifier | AFCEE Qualifier | Description |
|---|---|---|
| J | F | Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL. |
| N | | Indicates presumptive evidence of a compound. |
| B | B | Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level. |
| E | J | Indicates that the result is above the maximum calibration range. |
| * | * | Out of QC limit. |

**Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.**

### ACRONYMS AND ABBREVIATIONS:

| | |
|---|---|
| **CRDL** | Contract Required Detection Limit |
| **RL** | Reporting Limit |
| **MRL** | Method Reporting Limit |
| **MDL** | Method Detection Limit |
| **DL** | Detection Limit |
| **LOD** | Limit of Detection |
| **LOQ** | Limit of Quantitation |
| **DO** | Diluted out |

### DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

# LABORATORY REPORT FOR

# BATTELLE

# RED HILL PHASE 1B

METHOD 3520C/8270C SIM
PAH BY 8270S SIM ULTRA LOW

SDG#: 14K089

CASE NARRATIVE

Client : BATTELLE

Project: RED HILL PHASE 1B

SDG : 14K089

METHOD SW3520C/8270C SIM
PAH BY 8270C SIM ULTRA LOW

A total of two(2) water samples were received on 11/13/14 to be analyzed for PAH BY 8270C SIM Ultra Low in accordance with Method SW3520C/8270C SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. There was one(1)CCV associated with this SDG: Target analytes in CCV(Datafile ID:RKF112) were within calibration acceptance criteria. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. SVK020WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. SVK020WL/SVK020WC - all analytes were within of LCS QC limits. %RPD of Benzo(b)fluoranthene was above the limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE

SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

Client : BATTELLE
Project : RED HILL PHASE 1B

SDG NO. : 14K089
Instrument ID : T-OFO

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| LCS1W | SVK020WL | 1 | NA | 11/20/1412:02 | 11/17/1410:00 | RKF113 | RKF112 | SVK020W | Lab Control Sample (LCS) |
| LCD1W | SVK020WC | 1 | NA | 11/20/1412:20 | 11/17/1410:00 | RKF114 | RKF112 | SVK020W | LCS Duplicate |
| MBLK1W | SVK020WB | 1 | NA | 11/20/1412:44 | 11/17/1410:00 | RKF115 | RKF112 | SVK020W | Method Blank |
| HW111214-01 | K089-02 | 1.05 | NA | 11/20/1413:08 | 11/17/1410:00 | RKF116 | RKF112 | SVK020W | Field Sample |
| HW111214-02 | K089-03 | 1.1 | NA | 11/20/1413:31 | 11/17/1410:00 | RKF117 | RKF112 | SVK020W | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 11/12/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/17/14 10:00 |
| Sample ID: | HW111214-01 | Date Analyzed: | 11/20/14 13:08 |
| Lab Samp ID: | K089-02 | Dilution Factor: | 1.05 |
| Lab File ID: | RKF116 | Matrix : | WATER |
| Ext Btch ID: | SVK020W | % Moisture : | NA |
| Calib. Ref.: | RKF112 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.021 | 0.0052 | 0.011 |
| ACENAPHTHYLENE | ND | 0.021 | 0.0052 | 0.011 |
| ANTHRACENE | ND | 0.021 | 0.0052 | 0.011 |
| BENZO(A)ANTHRACENE | ND | 0.021 | 0.0052 | 0.011 |
| BENZO(A)PYRENE | ND | 0.021 | 0.0052 | 0.011 |
| BENZO(B)FLUORANTHENE | ND | 0.021 | 0.0052 | 0.011 |
| BENZO(K)FLUORANTHENE | ND | 0.021 | 0.0052 | 0.011 |
| BENZO(G,H,I)PERYLENE | ND | 0.021 | 0.0052 | 0.011 |
| CHRYSENE | ND | 0.021 | 0.0052 | 0.011 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.021 | 0.0052 | 0.011 |
| FLUORANTHENE | ND | 0.021 | 0.0052 | 0.011 |
| FLUORENE | ND | 0.021 | 0.0052 | 0.011 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.021 | 0.0052 | 0.011 |
| NAPHTHALENE | ND | 0.10 | 0.026 | 0.052 |
| PHENANTHRENE | ND | 0.021 | 0.0052 | 0.011 |
| PYRENE | ND | 0.021 | 0.0052 | 0.011 |
| 2-METHYLNAPHTHALENE | ND | 0.021 | 0.0052 | 0.011 |
| 1-METHYLNAPHTHALENE | ND | 0.021 | 0.0052 | 0.011 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.598 | 0.5250 | 114 | 50-135 |

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14K20\RKF116.D Vial: 7
Acq On : 20 Nov 2014 13:08 Operator: KVu
Sample : 14K089-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 13:38:40 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

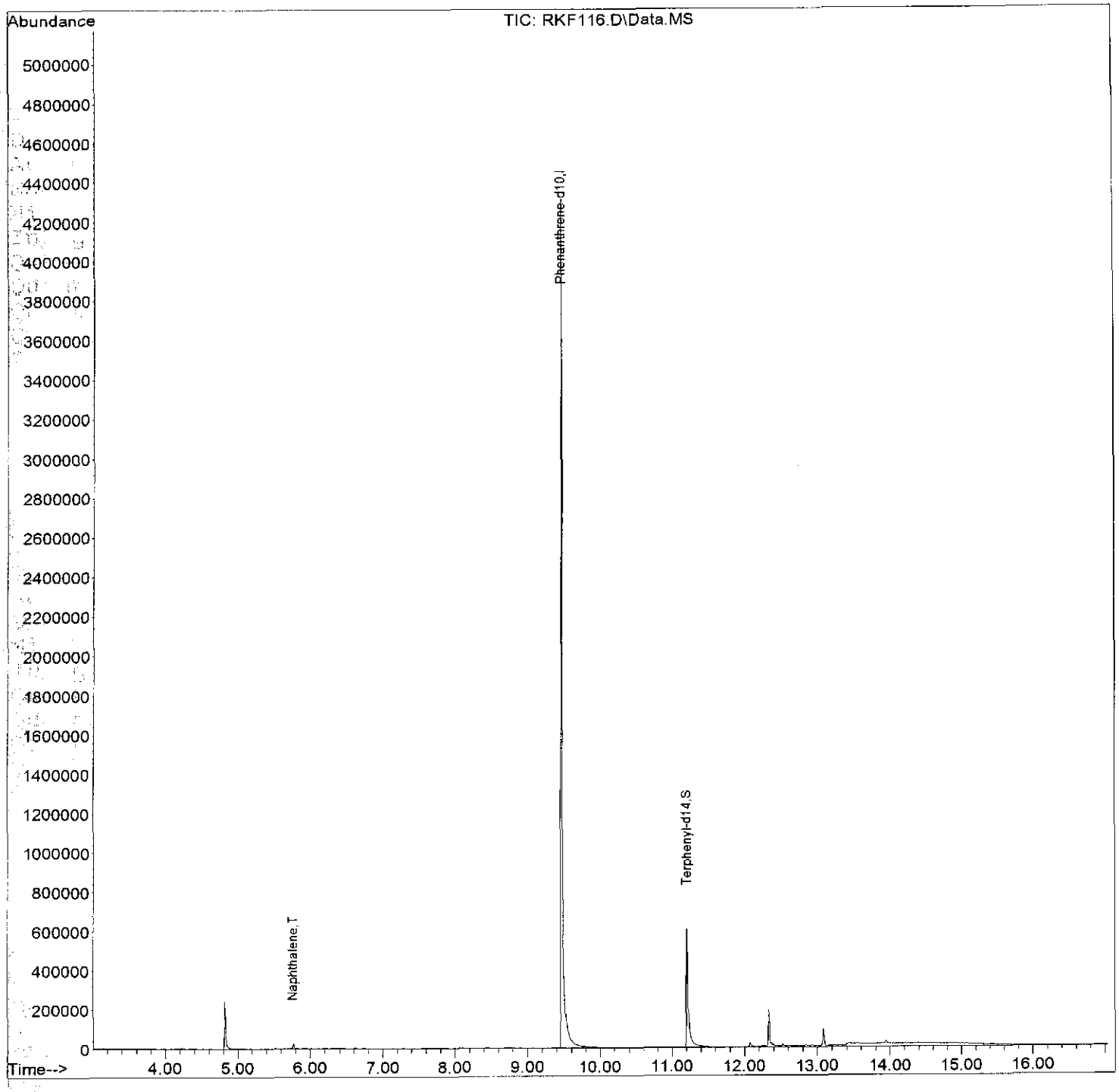
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.469 | 188 | 4443986 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.208 | 244 | 935660 | 569.29 ppb | 0.03 |
| Spiked Amount 500.000 | | | Recovery | = 113.86% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.766 | 128 | 33738 | 11.09 ppb | 99 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14K20\RKF116.D
Acq On : 20 Nov 2014 13:08
Sample : 14K089-02
Misc : F0
Integrator: RTE
Quant Time: Nov 20 13:38:40 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 7
Operator: KVu
Inst : DSQ
Multiplr: 1.00



METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 11/12/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/17/14 10:00 |
| Sample ID: | HW111214-02 | Date Analyzed: | 11/20/14 13:31 |
| Lab Samp ID: | K089-03 | Dilution Factor: | 1.1 |
| Lab File ID: | RKF117 | Matrix : | WATER |
| Ext Btch ID: | SVK020W | % Moisture : | NA |
| Calib. Ref.: | RKF112 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.022 | 0.0055 | 0.011 |
| ACENAPHTHYLENE | ND | 0.022 | 0.0055 | 0.011 |
| ANTHRACENE | ND | 0.022 | 0.0055 | 0.011 |
| BENZO(A)ANTHRACENE | ND | 0.022 | 0.0055 | 0.011 |
| BENZO(A)PYRENE | ND | 0.022 | 0.0055 | 0.011 |
| BENZO(B)FLUORANTHENE | ND | 0.022 | 0.0055 | 0.011 |
| BENZO(K)FLUORANTHENE | ND | 0.022 | 0.0055 | 0.011 |
| BENZO(G,H,I)PERYLENE | ND | 0.022 | 0.0055 | 0.011 |
| CHRYSENE | ND | 0.022 | 0.0055 | 0.011 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.022 | 0.0055 | 0.011 |
| FLUORANTHENE | ND | 0.022 | 0.0055 | 0.011 |
| FLUORENE | ND | 0.022 | 0.0055 | 0.011 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.022 | 0.0055 | 0.011 |
| NAPHTHALENE | ND | 0.11 | 0.028 | 0.055 |
| PHENANTHRENE | ND | 0.022 | 0.0055 | 0.011 |
| PYRENE | ND | 0.022 | 0.0055 | 0.011 |
| 2-METHYLNAPHTHALENE | ND | 0.022 | 0.0055 | 0.011 |
| 1-METHYLNAPHTHALENE | ND | 0.022 | 0.0055 | 0.011 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.649 | 0.5500 | 118 | 50-135 |

Quantitation Report (QT Reviewed)

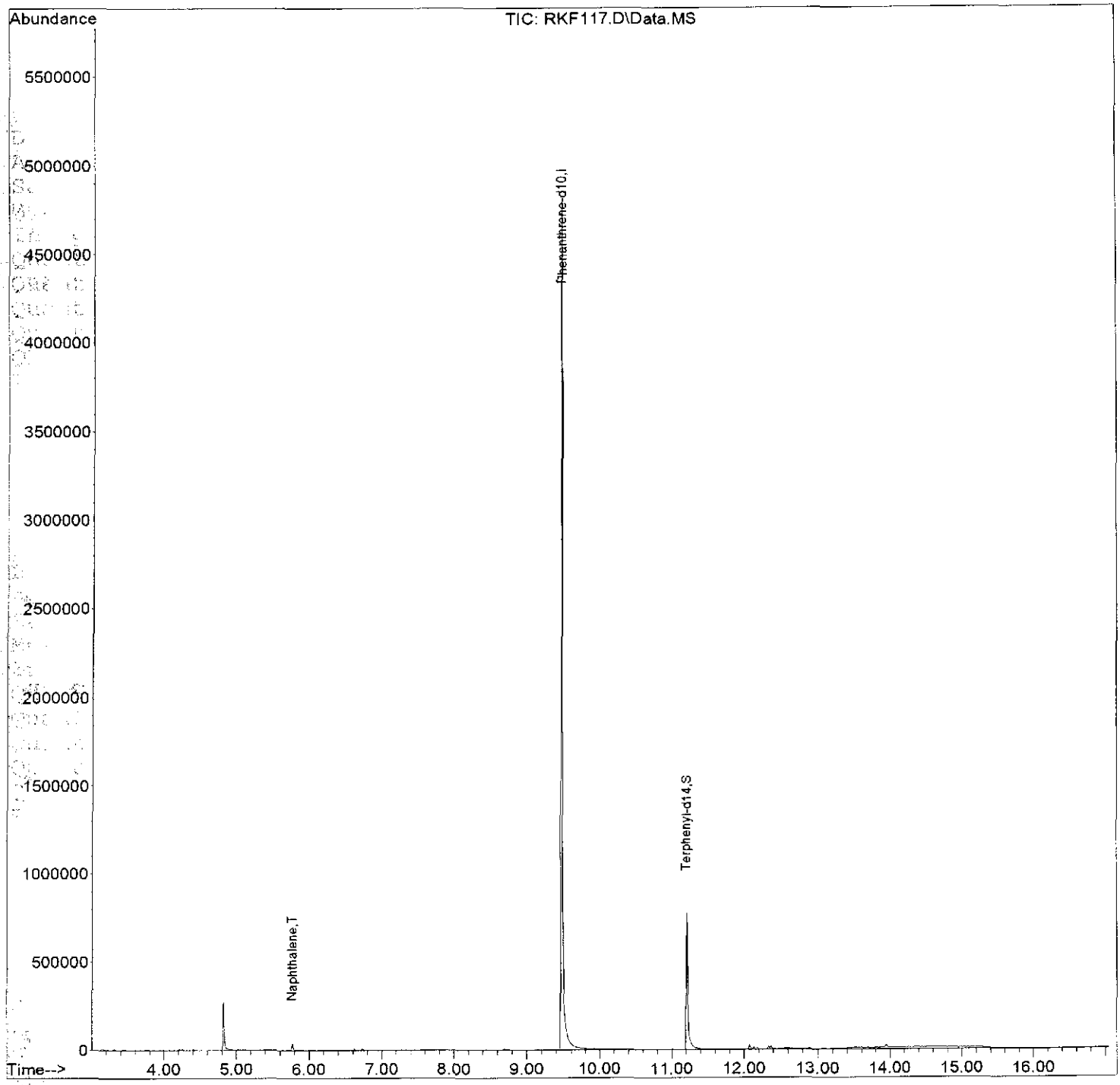
Data File : C:\msdchem\1\DATA\14K20\RKF117.D
Vial: 8
Acq On : 20 Nov 2014 13:31
Operator: KVu
Sample : 14K089-03
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 13:56:56 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.469 | 188 | 4949157 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.206 | 244 | 1080449 | 590.28 ppb | 0.03 |
| Spiked Amount 500.000 | | | | Recovery = 118.06% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.767 | 128 | 45478 | 13.43 ppb < RL | 98 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14K20\RKF117.D
Vial: 8
Acq On : 20 Nov 2014 13:31
Operator: KVu
Sample : 14K089-03
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 13:56:56 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# QC SUMMARIES

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 11/17/14 |
| Batch No. | : 14KD89 | Date Extracted: | 11/17/14 10:00 |
| Sample ID: | MBLK1W | Date Analyzed: | 11/20/14 12:44 |
| Lab Samp ID: | SVK020WB | Dilution Factor: | 1 |
| Lab File ID: | RKF115 | Matrix : | WATER |
| Ext Btch ID: | SVK020W | % Moisture : | NA |
| Calib. Ref.: | RKF112 | Instrument ID : | T-OFO |

| PARAMETERS | RESULTS (ug/L) | LOQ (ug/L) | DL (ug/L) | LOD (ug/L) |
|---|---|---|---|---|
| ACENAPHTHENE | ND | 0.020 | 0.0050 | 0.010 |
| ACENAPHTHYLENE | ND | 0.020 | 0.0050 | 0.010 |
| ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(A)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(B)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(K)FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| BENZO(G,H,I)PERYLENE | ND | 0.020 | 0.0050 | 0.010 |
| CHRYSENE | ND | 0.020 | 0.0050 | 0.010 |
| DIBENZO(A,H)ANTHRACENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORANTHENE | ND | 0.020 | 0.0050 | 0.010 |
| FLUORENE | ND | 0.020 | 0.0050 | 0.010 |
| INDENO(1,2,3-CD)PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| NAPHTHALENE | ND | 0.10 | 0.025 | 0.050 |
| PHENANTHRENE | ND | 0.020 | 0.0050 | 0.010 |
| PYRENE | ND | 0.020 | 0.0050 | 0.010 |
| 2-METHYLNAPHTHALENE | ND | 0.020 | 0.0050 | 0.010 |
| 1-METHYLNAPHTHALENE | ND | 0.020 | 0.0050 | 0.010 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| TERPHENYL-D14 | 0.670 | 0.5000 | 134 | 50-135 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14K089
METHOD: SW3520C/8270C SIM

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | SVK020WB | SVK020WL | SVK020WC | | |
| LAB FILE ID: | RKF115 | RKF113 | RKF114 | | |
| DATE EXTRACTED: | 11/17/1410:00 | 11/17/1410:00 | 11/17/1410:00 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 11/20/1412:44 | 11/20/1412:02 | 11/20/1412:20 | DATE RECEIVED: | 11/17/14 |
| PREP. BATCH: | SVK020W | SVK020W | SVK020W | | |
| CALIB. REF: | RKF112 | RKF112 | RKF112 | | |

ACCESSION:

| PARAMETER | BLNK RSLT (ug/L) | SPIKE AMT (ug/L) | BS RSLT (ug/L) | BS % REC | SPIKE AMT (ug/L) | BSD RSLT (ug/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | 0.500 | 0.388 | 78 | 0.500 | 0.355 | 71 | 9 | 45-110 | 30 |
| Acenaphthylene | ND | 0.500 | 0.372 | 74 | 0.500 | 0.353 | 71 | 5 | 50-105 | 30 |
| Anthracene | ND | 0.500 | 0.342 | 68 | 0.500 | 0.326 | 65 | 5 | 55-110 | 30 |
| Benzo(a)anthracene | ND | 0.500 | 0.414 | 83 | 0.500 | 0.437 | 87 | 5 | 55-110 | 30 |
| Benzo(a)pyrene | ND | 0.500 | 0.362 | 72 | 0.500 | 0.432 | 86 | 18 | 55-110 | 30 |
| Benzo(b)fluoranthene | ND | 0.500 | 0.368 | 74 | 0.500 | 0.587 | 117 | 46* | 45-120 | 30 |
| Benzo(k)fluoranthene | ND | 0.500 | 0.447 | 89 | 0.500 | 0.596 | 119 | 29 | 45-125 | 30 |
| Benzo(g,h,i)perylene | ND | 0.500 | 0.359 | 72 | 0.500 | 0.383 | 77 | 7 | 40-125 | 30 |
| Chrysene | ND | 0.500 | 0.441 | 88 | 0.500 | 0.464 | 93 | 5 | 55-110 | 30 |
| Dibenzo(a,h)anthracene | ND | 0.500 | 0.286 | 57 | 0.500 | 0.307 | 61 | 7 | 40-125 | 30 |
| Fluoranthene | ND | 0.500 | 0.347 | 69 | 0.500 | 0.323 | 65 | 7 | 55-115 | 30 |
| Fluorene | ND | 0.500 | 0.335 | 67 | 0.500 | 0.311 | 62 | 7 | 50-110 | 30 |
| Indeno(1,2,3-cd)pyrene | ND | 0.500 | 0.320 | 64 | 0.500 | 0.341 | 68 | 6 | 45-125 | 30 |
| Naphthalene | ND | 0.500 | 0.414 | 83 | 0.500 | 0.396 | 79 | 4 | 40-100 | 30 |
| Phenanthrene | ND | 0.500 | 0.323 | 65 | 0.500 | 0.302 | 60 | 7 | 50-115 | 30 |
| Pyrene | ND | 0.500 | 0.328 | 66 | 0.500 | 0.319 | 64 | 3 | 50-130 | 30 |
| 2-Methylnaphthalene | ND | 0.500 | 0.337 | 67 | 0.500 | 0.335 | 67 | 1 | 45-105 | 30 |
| 1-Methylnaphthalene | ND | 0.500 | 0.378 | 76 | 0.500 | 0.367 | 73 | 3 | 30-160 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (ug/L) | BS RSLT (ug/L) | BS % REC | SPIKE AMT (ug/L) | BSD RSLT (ug/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Terphenyl-d14 | 0.500 | 0.542 | 108 | 0.500 | 0.464 | 93 | 50-135 |

# QC DATA

Quantitation Report (QT Reviewed)

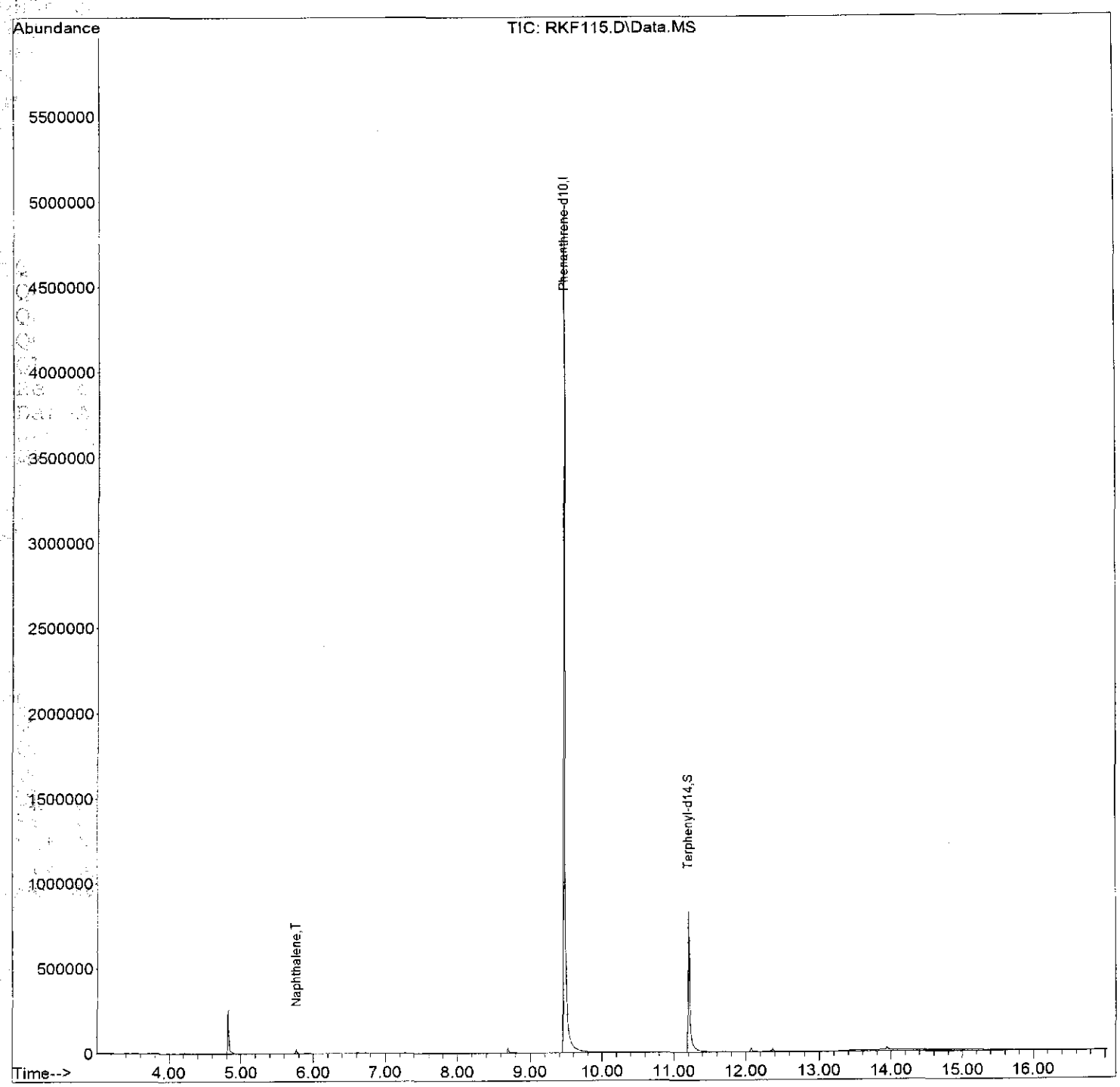
Data File : C:\msdchem\1\DATA\14K20\RKF115.D
Vial: 6
Acq On : 20 Nov 2014 12:44
Operator: KVu
Sample : SVK020WB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 13:37:41 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.469 | 188 | 4966584 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.208 | 244 | 1231073 | 670.21 ppb | 0.03 |
| Spiked Amount 500.000 | | | Recovery | = 134.04% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.766 | 128 | 28910 | 8.51 ppb <DL | 91 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14K20\RKF115.D
Vial: 6
Acq On : 20 Nov 2014 12:44
Operator: KVu
Sample : SVK020WB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 13:37:41 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

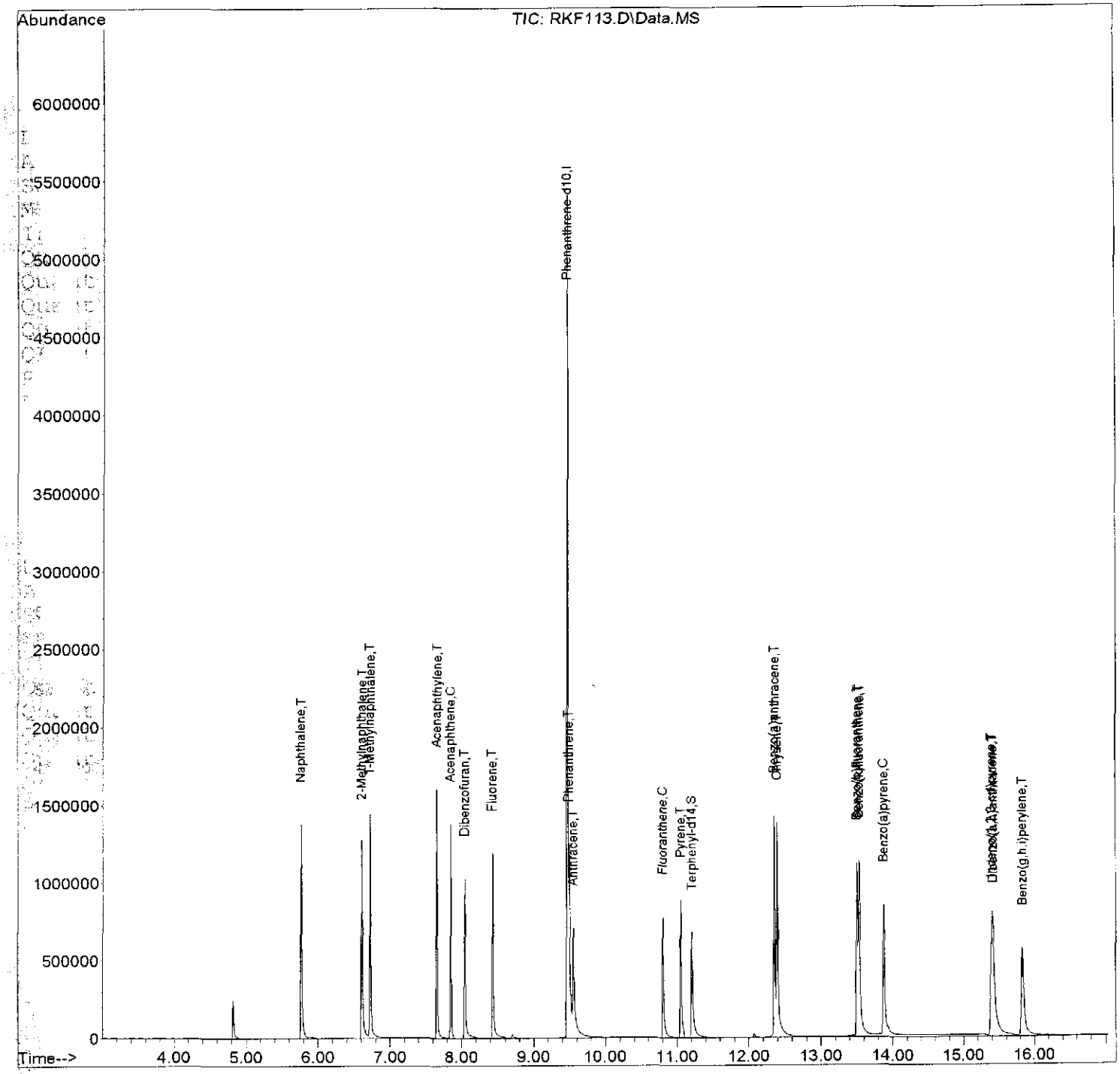
Data File : C:\msdchem\1\DATA\14K20\RKF113.D
Vial: 4
Acq On : 20 Nov 2014 12:02
Operator: KVu
Sample : SVK020WL
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:45:06 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.469 | 188 | 5218746 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.208 | 244 | 1046821 | 542.37 ppb | 0.03 |
| Spiked Amount 500.000 | | | Recovery | = 108.47% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.766 | 128 | 1478034 | 413.87 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.608 | 142 | 807588 | 337.19 ppb | 96 |
| 4) 1-Methylnaphthalene | 6.724 | 142 | 830388 | 377.53 ppb | 97 |
| 5) Acenaphthylene | 7.657 | 152 | 1184532 | 372.32 ppb | 99 |
| 6) Acenaphthene | 7.853 | 153 | 803707 | 388.41 ppb | 98 |
| 7) Dibenzofuran | 8.049 | 168 | 920904 | 348.12 ppb | 97 |
| 8) Fluorene | 8.430 | 166 | 707984 | 335.22 ppb | 99 |
| 9) Phenanthrene | 9.495 | 178 | 873605 | 322.83 ppb | 97 |
| 10) Anthracene | 9.554 | 178 | 930906 | 342.43 ppb | 95 |
| 11) Fluoranthene | 10.804 | 202 | 871160 | 346.78 ppb | 88 |
| 12) Pyrene | 11.054 | 202 | 890926 | 327.90 ppb | 89 |
| 14) Benzo(a)anthracene | 12.356 | 228 | 1533675 | 413.98 ppb | 82 |
| 15) Chrysene | 12.397 | 228 | 1580486 | 440.91 ppb | 86 |
| 16) Benzo(b)fluoranthene | 13.504 | 252 | 1300772 | 367.82 ppb | 86 |
| 17) Benzo(k)fluoranthene | 13.534 | 252 | 1579976 | 447.34 ppb | 86 |
| 18) Benzo(a)pyrene | 13.877 | 252 | 1215777 | 361.93 ppb | 92 |
| 19) Indeno(1,2,3-cd)pyrene | 15.397 | 276 | 1309111 | 320.18 ppb | 67 |
| 20) Dibenzo(a,h)anthracene | 15.416 | 278 | 965293 | 286.06 ppb | 70 |
| 21) Benzo(g,h,i)perylene | 15.829 | 276 | 1215310 | 358.74 ppb | 74 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14K20\RKF113.D
Vial: 4
Acq On : 20 Nov 2014 12:02
Operator: KVu
Sample : SVK020WL
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:45:06 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

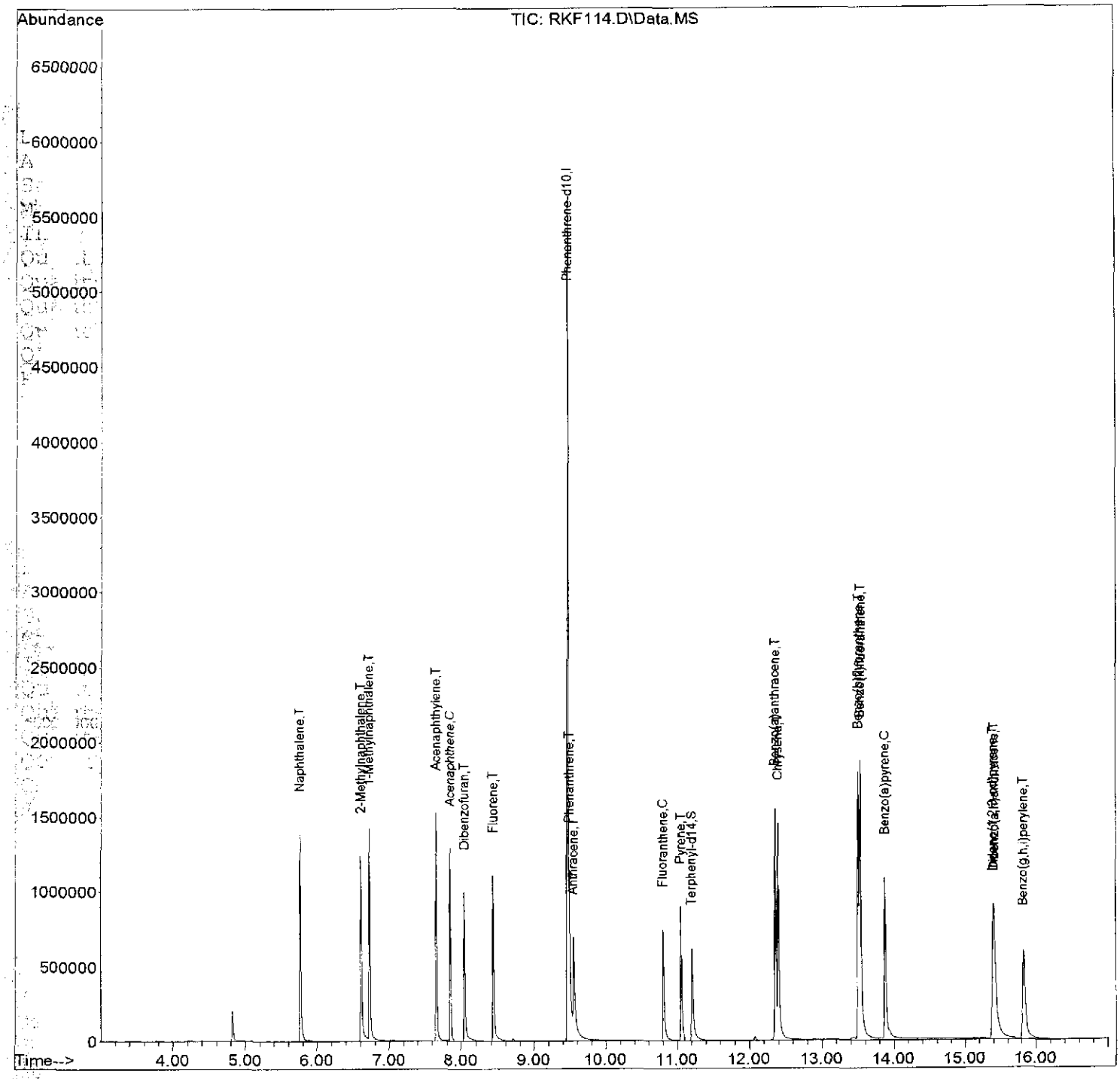
Data File : C:\msdchem\1\DATA\14K20\RKF114.D
Vial: 5
Acq On : 20 Nov 2014 12:20
Operator: KVu
Sample : SVK020WC
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:47:36 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.468 | 188 | 5354199 | 2000.00 ppb | 0.0 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.210 | 244 | 919278 | 464.24 ppb | 0.03 |
| Spiked Amount 500.000 | | | Recovery | = 92.85% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.769 | 128 | 1452631 | 396.46 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.610 | 142 | 822761 | 334.83 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.726 | 142 | 828701 | 367.23 ppb | 99 |
| 5) Acenaphthylene | 7.657 | 152 | 1151093 | 352.66 ppb | 99 |
| 6) Acenaphthene | 7.853 | 153 | 754553 | 355.43 ppb | 97 |
| 7) Dibenzofuran | 8.049 | 168 | 876507 | 322.96 ppb | 96 |
| 8) Fluorene | 8.432 | 166 | 673942 | 311.03 ppb | 99 |
| 9) Phenanthrene | 9.498 | 178 | 837826 | 301.78 ppb | 98 |
| 10) Anthracene | 9.553 | 178 | 908524 | 325.74 ppb | 95 |
| 11) Fluoranthene | 10.804 | 202 | 833489 | 323.39 ppb | 90 |
| 12) Pyrene | 11.055 | 202 | 888347 | 318.68 ppb | 89 |
| 14) Benzo(a)anthracene | 12.356 | 228 | 1657596 | 436.56 ppb | 74 |
| 15) Chrysene | 12.397 | 228 | 1705280 | 463.69 ppb | 84 |
| 16) Benzo(b)fluoranthene | 13.506 | 252 | 2131465 | 587.47 ppb | 80 |
| 17) Benzo(k)fluoranthene | 13.535 | 252 | 2160123 | 596.13 ppb | 81 |
| 18) Benzo(a)pyrene | 13.878 | 252 | 1488885 | 432.02 ppb | 85 |
| 19) Indeno(1,2,3-cd)pyrene | 15.398 | 276 | 1432245 | 341.43 ppb | 70 |
| 20) Dibenzo(a,h)anthracene | 15.416 | 278 | 1063237 | 307.11 ppb | 73 |
| 21) Benzo(g,h,i)perylene | 15.833 | 276 | 1332787 | 383.47 ppb | 74 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14K20\RKF114.D
Vial: 5
Acq On : 20 Nov 2014 12:20
Operator: KVu
Sample : SVK020WC
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:47:36 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# INITIAL CALIBRATIONS

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
## DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF012
Instrument ID: TOF0

Project: RED HILL PHASE 1B
SDG No.: 14K089
DFTPP Injection Date: 05/08/14
DFTPP Injection Time: 11:44

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 44.44 |
| 68 | Less than 2% of mass 69 | 0.14( 0.8)1 |
| 69 | Relative abundance of mass 198 | 17.73 |
| 70 | Less than 2.0% of mass 69 | 0.02( 0.1)1 |
| 127 | 40.0 - 60.0% of mass 198 | 44.87 |
| 197 | Less than 1.0% of mass 198 | 0.67 |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 199 | 5.0 - 9.0% of mass 198 | 6.24 |
| 275 | 10.0 - 30.0% of mass 198 | 22.93 |
| 365 | Greater than 1.00% of mass 198 | 1.66 |
| 441 | Present, but less than mass 443 | 13.99( 81.1)3 |
| 442 | Greater than 40.0% of mass 198 | 92.91 |
| 443 | 17.0 - 23.0% of mass 442 | 17.25( 18.6)2 |

1-Value is % mass 69 2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 1 | SSTD1000 | SVF0E081 | REF013 | 05/08/14 | 12:10 |
| 2 | SSTD500 | SVF0E082 | REF014 | 05/08/14 | 12:31 |
| 3 | SSTD100 | SVF0E083 | REF015 | 05/08/14 | 12:54 |
| 4 | SSTD080 | SVF0E084 | REF016 | 05/08/14 | 13:17 |
| 5 | SSTD040 | SVF0E085 | REF017 | 05/08/14 | 13:40 |
| 6 | SSTD020 | SVF0E086 | REF018 | 05/08/14 | 14:03 |
| 7 | SSTD500 | ISVF0E081 | REF019 | 05/08/14 | 14:26 |

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: REF014
Instrument ID: TOF0

Project:ICAL
SDG No.:ICAL
Date Analyzed: 05/08/14
Time Analyzed: 12:31

| | | IS4(PHN) AREA # | RT # | IS5(CRY) AREA # | RT # | IS6(PRY) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 5005097 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| | UPPER LIMIT | 10010194 | 9.94 | 0 | 0.50 | 0 | 0.50 |
| | LOWER LIMIT | 2502549 | 8.94 | 0 | -0.50 | 0 | -0.50 |
| | SAMPLE ID | | | | | | |
| 1 | SVF0E081 | 5187965 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 2 | SVF0E083 | 5327101 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 3 | SVF0E084 | 7937548 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 4 | SVF0E085 | 5477844 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 5 | SVF0E086 | 4821286 | 9.44 | 0 | 0.00 | 0 | 0.00 |
| 6 | ISVF0E081 | 6284290 | 9.44 | 0 | 0.00 | 0 | 0.00 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.



FORM VIII SV-2 OLM02.0

RW 7-11-14

3022

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-SEMI ID:0.25MM
Beginning DateTime :05/08/14 12:10 Ending DateTime :05/08/14 14:03
IC File :REF015 HPChem Method :SVF0E08

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

| IDX | Parameters | ON_COL UG/L | WATER UG/L | SOIL UG/KG | R_FILE |
|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | IntSTD | IntSTD | IntSTD | IntSTD |
| 2 | Naphthalene | 20 | .02 | .6667 | REF018 |
| 3 | 2-Methylnaphthalene | 20 | .02 | .6667 | REF018 |
| 4 | 1-Methylnaphthalene | 20 | .02 | .6667 | REF018 |
| 5 | Acenaphthylene | 20 | .02 | .6667 | REF018 |
| 6 | Acenaphthene | 20 | .02 | .6667 | REF018 |
| 7 | Dibenzofuran | 20 | .02 | .6667 | REF018 |
| 8 | Fluorene | 20 | .02 | .6667 | REF018 |
| 9 | Phenanthrene | 20 | .02 | .6667 | REF018 |
| 10 | Anthracene | 20 | .02 | .6667 | REF018 |
| 11 | Fluoranthene | 20 | .02 | .6667 | REF018 |
| 12 | Pyrene | 20 | .02 | .6667 | REF018 |
| 13 | Terphenyl-d14 | 20 | .02 | .6667 | REF018 |
| 14 | Benzo(a)anthracene | 20 | .02 | .6667 | REF018 |
| 15 | Chrysene | 20 | .02 | .6667 | REF018 |
| 16 | Benzo(b)fluoranthene | 20 | .02 | .6667 | REF018 |
| 17 | Benzo(k)fluoranthene | 20 | .02 | .6667 | REF018 |
| 18 | Benzo(a)pyrene | 20 | .02 | .6667 | REF018 |
| 19 | Indeno(1,2,3-cd)pyrene | 20 | .02 | .6667 | REF018 |
| 20 | Dibenzo(a,h)anthracene | 20 | .02 | .6667 | REF018 |
| 21 | Benzo(g,h,i)perylene | 20 | .02 | .6667 | REF018 |

RU 7-11-14

3023

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :05/08/14 12:10
Spike Units :PPB
IC File :REF015

Column Spec :ZB-SEMI ID:0.25MM
Ending DateTime :05/08/14 14:03
HPChem Method :SVF0E08

| IDX | Parameters | 20<br>14:03<br>REF018 | 40<br>13:40<br>REF017 | 80<br>13:17<br>REF016 | 100<br>12:54<br>REF015 | 500<br>12:31<br>REF014 | 1000<br>12:10<br>REF013 | Av_RRF | %_RSD | Av_Rt_M |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9.4429 |
| 2 | Naphthalene | 1.584 | 1.389 | 1.265 | 1.344 | 1.392 | 1.238 | 1.369 | 8.99 | 5.7405 |
| 3 | 2-Methylnaphthalene | 1.049 | 0.917 | 0.855 | 0.919 | 0.934 | 0.833 | 0.918 | 8.25 | 6.5772 |
| 4 | 1-Methylnaphthalene | 0.978 | 0.846 | 0.789 | 0.836 | 0.849 | 0.759 | 0.843 | 8.93 | 6.6945 |
| 5 | Acenaphthylene | 1.353 | 1.215 | 1.133 | 1.232 | 1.245 | 1.139 | 1.219 | 6.61 | 7.6248 |
| 6 | Acenaphthene | 0.908 | 0.800 | 0.739 | 0.802 | 0.787 | 0.723 | 0.793 | 8.22 | 7.8215 |
| 7 | Dibenzofuran | 1.143 | 1.026 | 0.947 | 1.015 | 1.018 | 0.934 | 1.014 | 7.34 | 8.0151 |
| 8 | Fluorene | 0.905 | 0.823 | 0.759 | 0.820 | 0.805 | 0.744 | 0.809 | 7.05 | 8.4032 |
| 9 | Phenanthrene | 1.167 | 1.073 | 0.982 | 1.046 | 1.026 | 0.928 | 1.037 | 7.86 | 9.4701 |
| 10 | Anthracene | 1.165 | 1.048 | 0.987 | 1.044 | 1.047 | 0.960 | 1.042 | 6.78 | 9.5262 |
| 11 | Fluoranthene | 1.107 | 0.997 | 0.907 | 0.952 | 0.957 | 0.857 | 0.963 | 8.86 | 10.7756 |
| 12 | Pyrene | 1.199 | 1.055 | 0.985 | 1.029 | 1.031 | 0.949 | 1.041 | 8.26 | 11.0270 |
| 13 | Terphenyl-d14 | 0.872 | 0.761 | 0.690 | 0.714 | 0.734 | 0.667 | 0.740 | 9.81 | 11.1795 |
| 14 | Benzo(a)anthracene | 2.042 | 1.655 | 1.458 | 1.489 | 1.522 | 1.358 | 1.587 | 15.30 | 12.3298 |
| 15 | Chrysene | 1.582 | 1.404 | 1.292 | 1.326 | 1.388 | 1.250 | 1.374 | 8.55 | 12.3690 |
| 16 | Benzo(b)fluoranthene | 1.516 | 1.347 | 1.270 | 1.310 | 1.410 | 1.278 | 1.355 | 6.94 | 13.4730 |
| 17 | Benzo(k)fluoranthene | 1.505 | 1.292 | 1.253 | 1.348 | 1.449 | 1.275 | 1.354 | 7.55 | 13.5020 |
| 18 | Benzo(a)pyrene | 1.418 | 1.249 | 1.173 | 1.251 | 1.378 | 1.255 | 1.287 | 7.12 | 13.8406 |
| 19 | Indeno(1,2,3-cd)pyrene | 1.722 | 1.553 | 1.448 | 1.510 | 1.657 | 1.512 | 1.567 | 6.56 | 15.3334 |
| 20 | Dibenzo(a,h)anthracene | 1.458 | 1.286 | 1.193 | 1.247 | 1.347 | 1.229 | 1.293 | 7.44 | 15.3500 |
| 21 | Benzo(g,h,i)perylene | 1.390 | 1.273 | 1.236 | 1.265 | 1.389 | 1.237 | 1.298 | 5.54 | 15.7617 |

Ave_%RSD : 8.1 Max_%RSD : 15.3

Use Least Square Linear Regression with weighting factor of inverse concentration
Resp_Ratio = xo + x1 * Amt_Ratio

| IDX | Parameter | x0 | x1 | CCF |
|---|---|---|---|---|
| 14 | Benzo(a)anthracene | 0.00585 | 1.39154 | 0.9984 |

RCA
7-11-14

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :05/08/14 12:10
Spike Units :PPB
IC File :REF015

Column Spec :ZB-SEMI ID:0.25MM
Ending DateTime :05/08/14 14:03
HPChem Method :SVF0E08

| IDX | Parameters | 20<br>14:03<br>REF018 | 40<br>13:40<br>REF017 | 80<br>13:17<br>REF016 | 100<br>12:54<br>REF015 | 500<br>12:31<br>REF014 | 1000<br>12:10<br>REF013 | AvDRec | %_RSD | Av_Rt_M |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9.4429 |
| 2 | Naphthalene | 116 | 101 | 92 | 98 | 102 | 90 | 6.3 | 8.99 | 5.7405 |
| 3 | 2-Methylnaphthalene | 114 | 100 | 93 | 100 | 102 | 91 | 5.4 | 8.25 | 6.5772 |
| 4 | 1-Methylnaphthalene | 116 | 100 | 94 | 99 | 101 | 90 | 5.7 | 8.93 | 6.6945 |
| 5 | Acenaphthylene | 111 | 100 | 93 | 101 | 102 | 93 | 4.7 | 6.61 | 7.6248 |
| 6 | Acenaphthene | 115 | 101 | 93 | 101 | 99 | 91 | 5.5 | 8.22 | 7.8215 |
| 7 | Dibenzofuran | 113 | 101 | 93 | 100 | 100 | 92 | 4.8 | 7.34 | 8.0151 |
| 8 | Fluorene | 112 | 102 | 94 | 101 | 100 | 92 | 4.9 | 7.05 | 8.4032 |
| 9 | Phenanthrene | 113 | 103 | 95 | 101 | 99 | 89 | 5.6 | 7.86 | 9.4701 |
| 10 | Anthracene | 112 | 101 | 95 | 100 | 100 | 92 | 4.4 | 6.78 | 9.5262 |
| 11 | Fluoranthene | 115 | 104 | 94 | 99 | 99 | 89 | 6.2 | 8.86 | 10.7756 |
| 12 | Pyrene | 115 | 101 | 95 | 99 | 99 | 91 | 5.5 | 8.26 | 11.0270 |
| 13 | Terphenyl-d14 | 118 | 103 | 93 | 96 | 99 | 90 | 6.9 | 9.81 | 11.1795 |
| 14 | Benzo(a)anthracene | 105 | 98 | 94 | 99 | 108 | 97 | 4.2 | 5.1 | 12.3298 |
| 15 | Chrysene | 115 | 102 | 94 | 97 | 101 | 91 | 6.1 | 8.55 | 12.3690 |
| 16 | Benzo(b)fluoranthene | 112 | 99 | 94 | 97 | 104 | 94 | 5.3 | 6.94 | 13.4730 |
| 17 | Benzo(k)fluoranthene | 111 | 95 | 93 | 100 | 107 | 94 | 6.1 | 7.55 | 13.5020 |
| 18 | Benzo(a)pyrene | 110 | 97 | 91 | 97 | 107 | 98 | 5.7 | 7.12 | 13.8406 |
| 19 | Indeno(1,2,3-cd)pyrene | 110 | 99 | 92 | 96 | 106 | 96 | 5.2 | 6.56 | 15.3334 |
| 20 | Dibenzo(a,h)anthracene | 113 | 99 | 92 | 96 | 104 | 95 | 5.6 | 7.44 | 15.3500 |
| 21 | Benzo(g,h,i)perylene | 107 | 98 | 95 | 97 | 107 | 95 | 4.7 | 5.54 | 15.7617 |

7-11-14

3925

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0E08.M
Title : SEMIVOLATILES - SIM
Last Update : Thu May 08 14:37:46 2014
Response Via : Initial Calibration

Total Cpnds : 21

| PK# | | Compound Name | QIon | Exp_RT | Rel_RT | Cal | #Qual | A/H | ID |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 188 | 9.444 | 1.000 | A | 1 | A | B |
| 2 | T | Naphthalene | 128 | 5.741 | 0.608 | A | 1 | A | B |
| 3 | T | 2-Methylnaphthalene | 142 | 6.577 | 0.696 | A | 1 | A | B |
| 4 | T | 1-Methylnaphthalene | 142 | 6.695 | 0.709 | A | 1 | A | B |
| 5 | T | Acenaphthylene | 152 | 7.626 | 0.807 | A | 1 | A | B |
| 6 | C | Acenaphthene | 153 | 7.821 | 0.828 | A | 1 | A | B |
| 7 | T | Dibenzofuran | 168 | 8.015 | 0.849 | A | 1 | A | B |
| 8 | T | Fluorene | 166 | 8.403 | 0.890 | A | 1 | A | B |
| 9 | T | Phenanthrene | 178 | 9.471 | 1.003 | A | 1 | A | B |
| 10 | T | Anthracene | 178 | 9.527 | 1.009 | A | 1 | A | B |
| 11 | C | Fluoranthene | 202 | 10.777 | 1.141 | A | 1 | A | B |
| 12 | T | Pyrene | 202 | 11.029 | 1.168 | A | 1 | A | B |
| 13 | S | Terphenyl-d14 | 244 | 11.181 | 1.184 | A | 1 | A | B |
| 14 | T | Benzo(a)anthracene | 228 | 12.331 | 1.306 | L | 1 | A | B |
| 15 | T | Chrysene | 228 | 12.370 | 1.310 | A | 1 | A | B |
| 16 | T | Benzo(b)fluoranthene | 252 | 13.475 | 1.427 | A | 1 | A | B |
| 17 | T | Benzo(k)fluoranthene | 252 | 13.504 | 1.430 | A | 1 | A | B |
| 18 | #C | Benzo(a)pyrene | 252 | 13.842 | 1.466 | A | 1 | A | B |
| 19 | T | Indeno(1,2,3-cd)pyrene | 276 | 15.336 | 1.624 | A | 1 | A | B |
| 20 | T | Dibenzo(a,h)anthracene | 278 | 15.353 | 1.626 | A | 1 | A | B |
| 21 | T | Benzo(g,h,i)perylene | 276 | 15.763 | 1.669 | A | 1 | A | B |

Cal = A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID = R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

SVF0E08.M Thu May 08 14:38:06 2014 F0

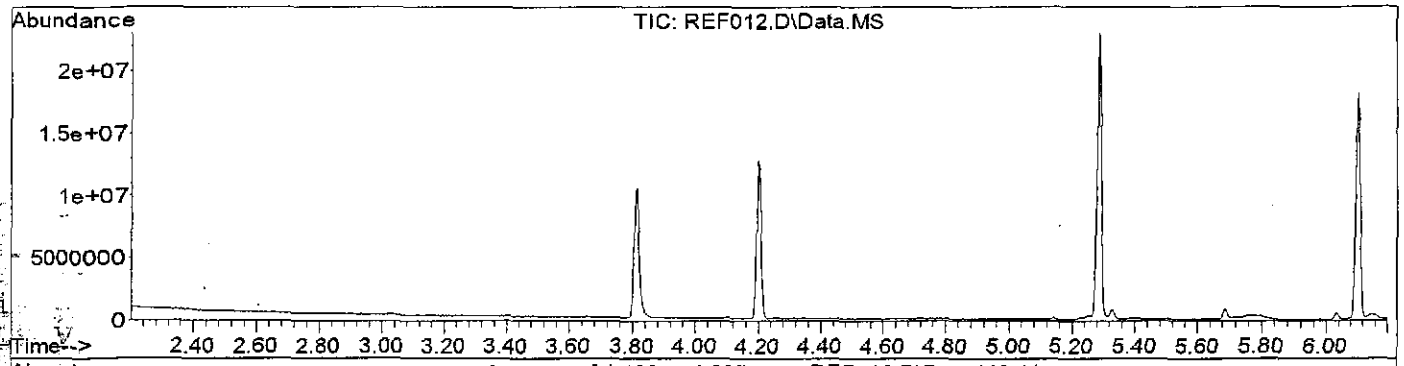
dw 7-11-14

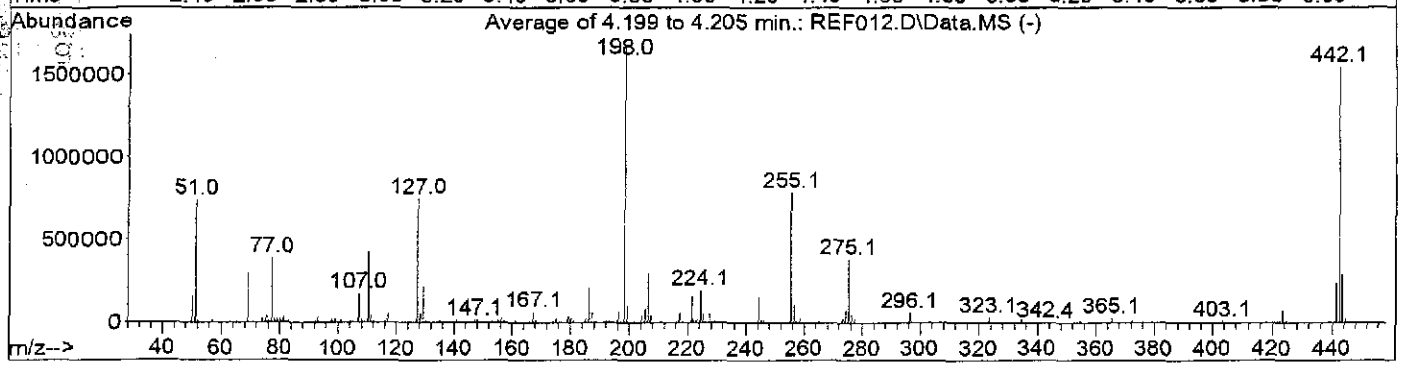
3025

Data Path : C:\msdchem\1\DATA\14E08\
Data File : REF012.D
Acq On : 08 May 2014 11:44
Operator : KV
Sample : DFTF0F0801
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Fri May 09 13:48:37 2014




AutoFind: Scans 725, 726, 727; Background Corrected with Scan 716

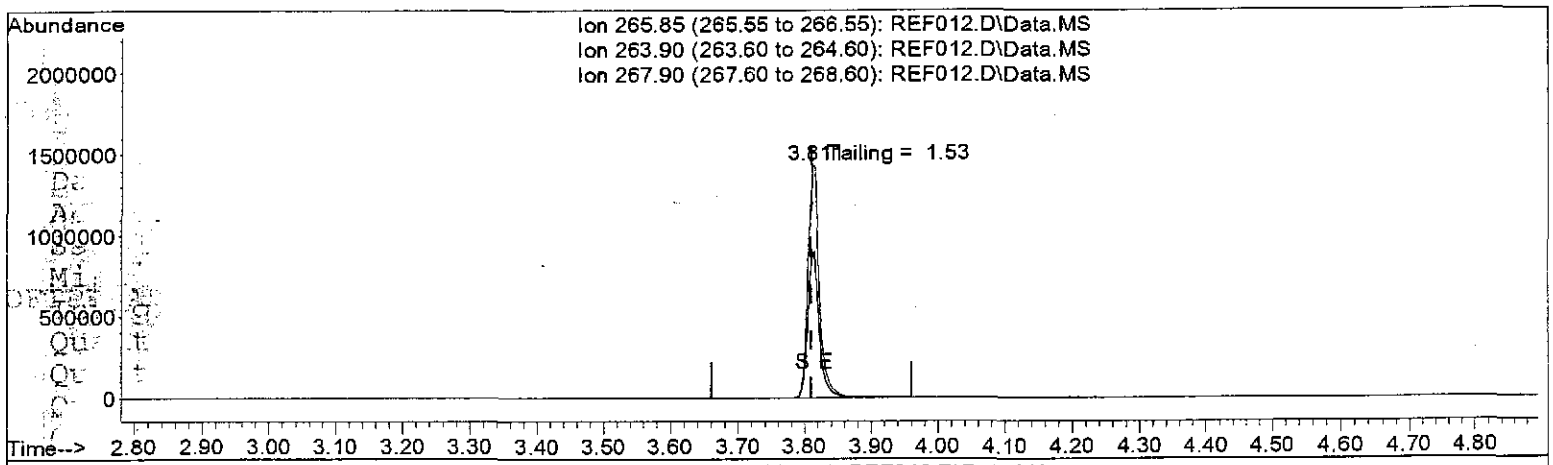
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 30 | 60 | 44.4 | 737448 | PASS |
| 68 | 69 | 0.00 | 2 | 0.8 | 2241 | PASS |
| 69 | 198 | 0.00 | 100 | 17.7 | 294208 | PASS |
| 70 | 69 | 0.00 | 2 | 0.1 | 361 | PASS |
| 127 | 198 | 40 | 60 | 44.9 | 744448 | PASS |
| 197 | 198 | 0.00 | 1 | 0.7 | 11039 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1659221 | PASS |
| 199 | 198 | 5 | 9 | 6.2 | 103579 | PASS |
| 275 | 198 | 10 | 30 | 22.9 | 380501 | PASS |
| 365 | 198 | 1 | 100 | 1.7 | 27571 | PASS |
| 441 | 443 | 0.01 | 100 | 81.1 | 232107 | PASS |
| 442 | 198 | 40 | 100 | 92.9 | 1541632 | PASS |
| 443 | 442 | 17 | 23 | 18.6 | 286251 | PASS |

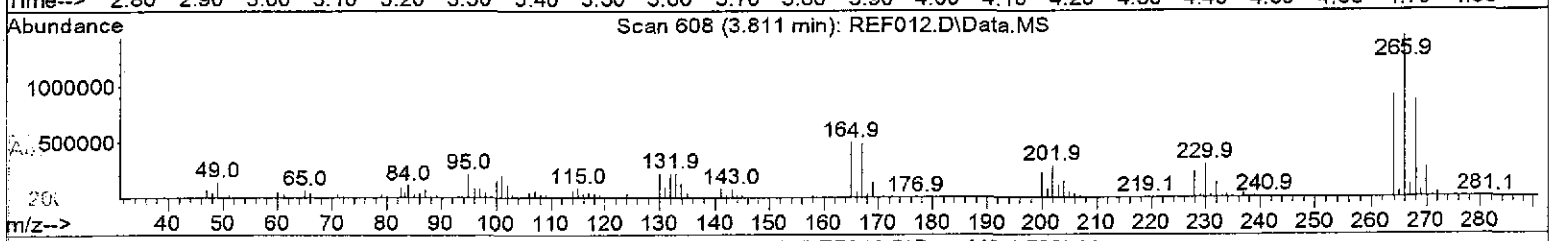
7-11-14

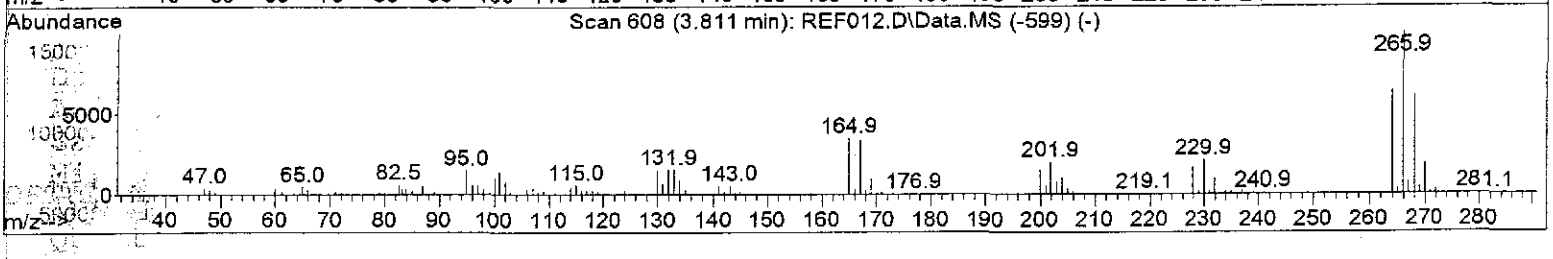
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(1) Pentachlorophenol (T)

3.811min (+0.000) 50.00 ppm

response 1690635

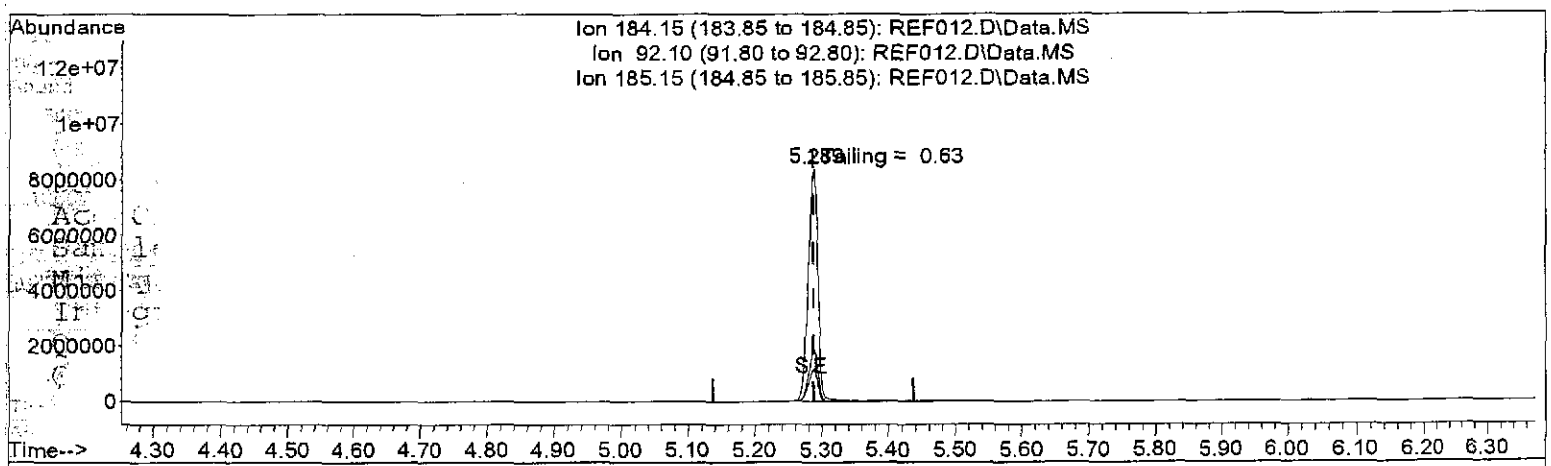
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 61.80 |
| 267.90 | 62.70 | 62.72 |
| 0.00 | 0.00 | 0.00 |

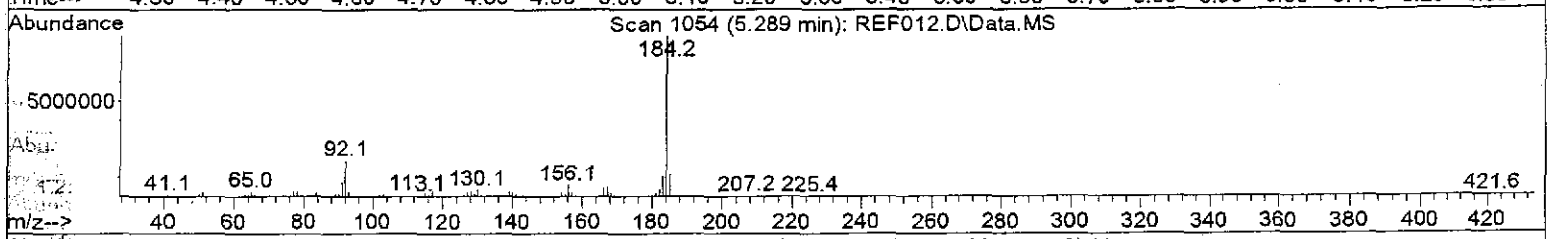
7-11-14

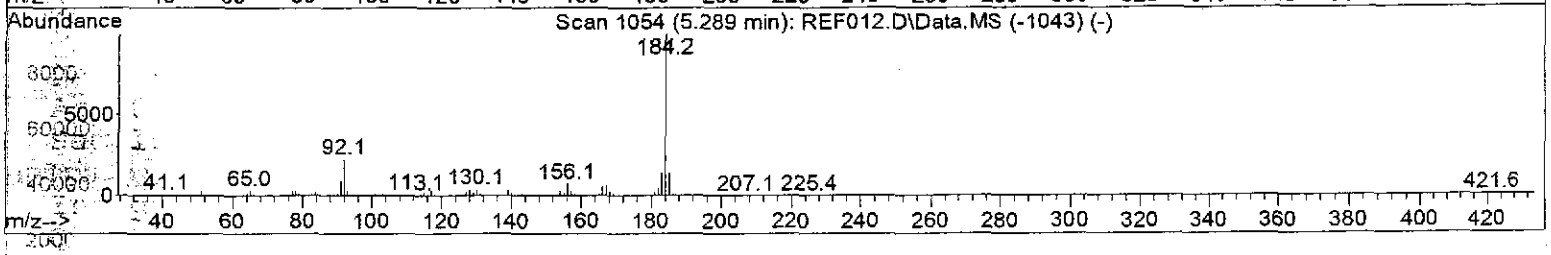
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(3) Benzidine (T)

5.289min (0.000) 50.00 ppm

response 8591117

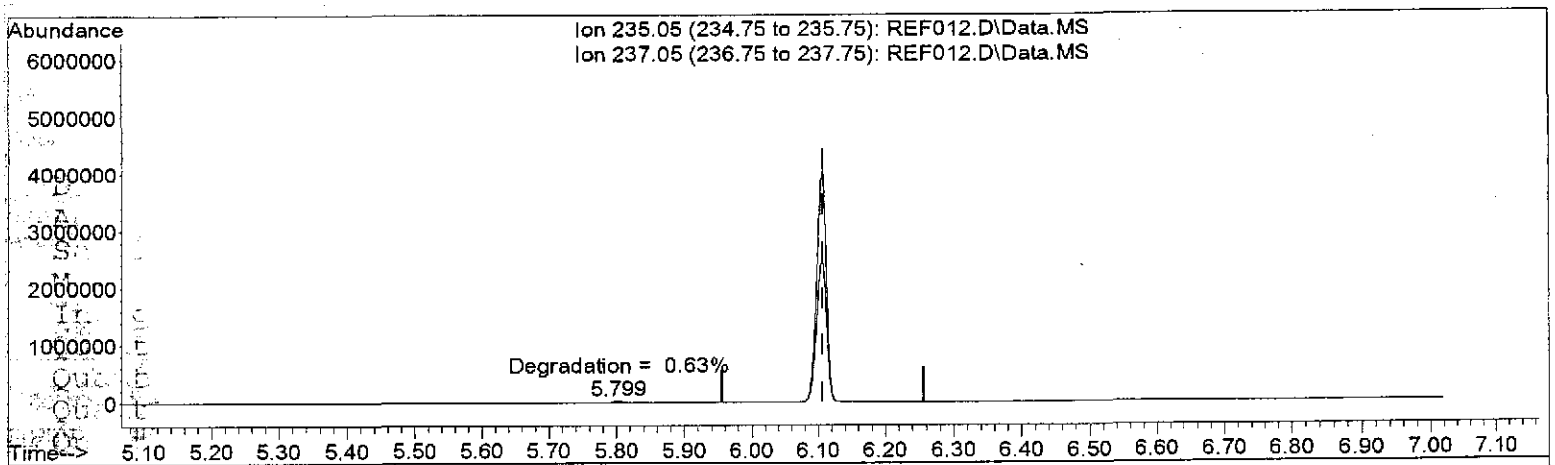
| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.65 |
| 185.15 | 13.30 | 13.29 |
| 0.00 | 0.00 | 0.00 |

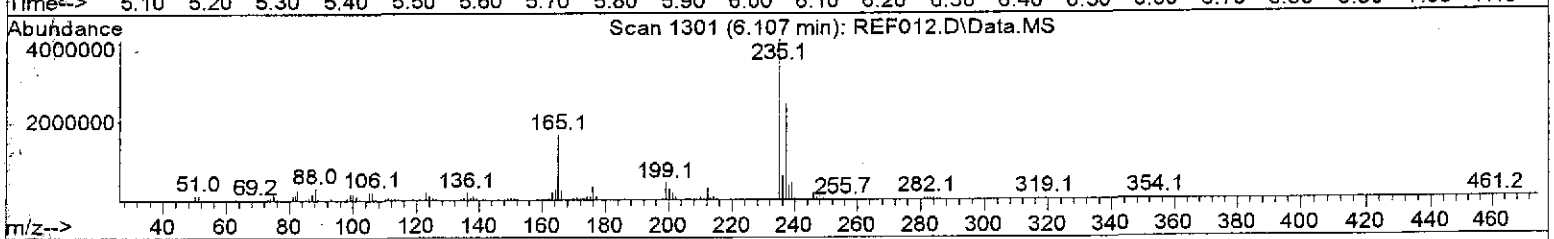
7-11-14

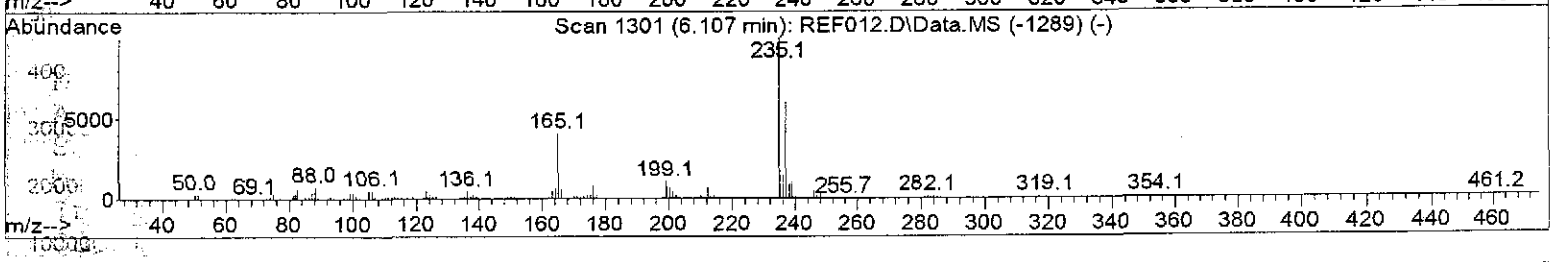
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:48:40 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:38 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(6) DDT (T)

6.107min (0.000) 50.00 ppm

response 4079265

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.24 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

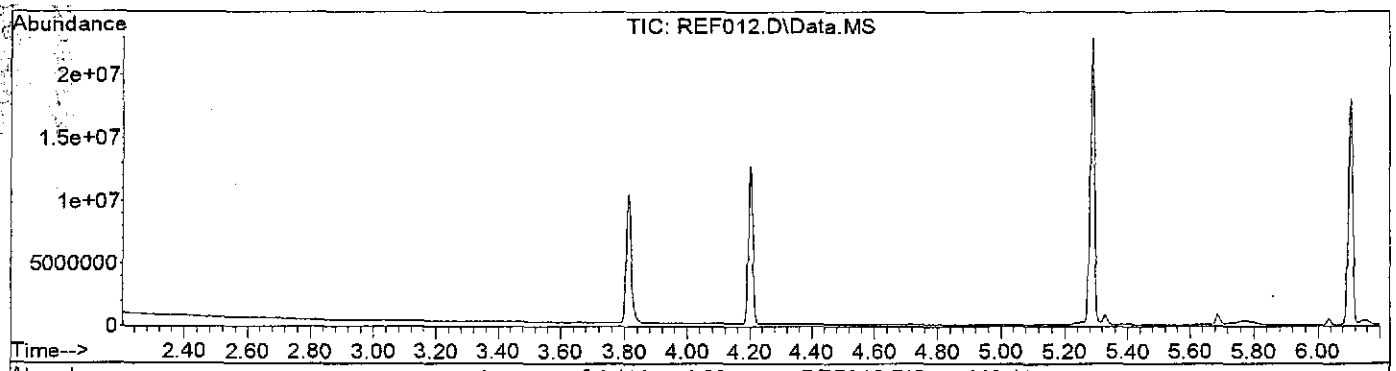
7-11-14

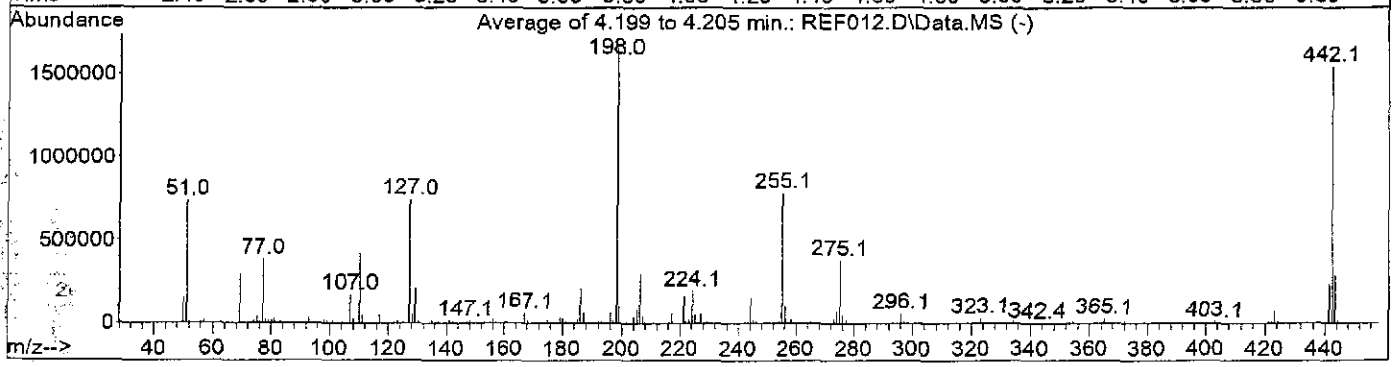
DFTPP

Data Path : C:\msdchem\1\DATA\14E08\
Data File : REF012.D
Acq On : 08 May 2014 11:44
Operator : KV
Sample : DFTF0F0801
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPD.M
Title : DFTPP-8270D
Last Update : Fri May 09 13:50:01 2014




AutoFind: Scans 725, 726, 727; Background Corrected with Scan 716

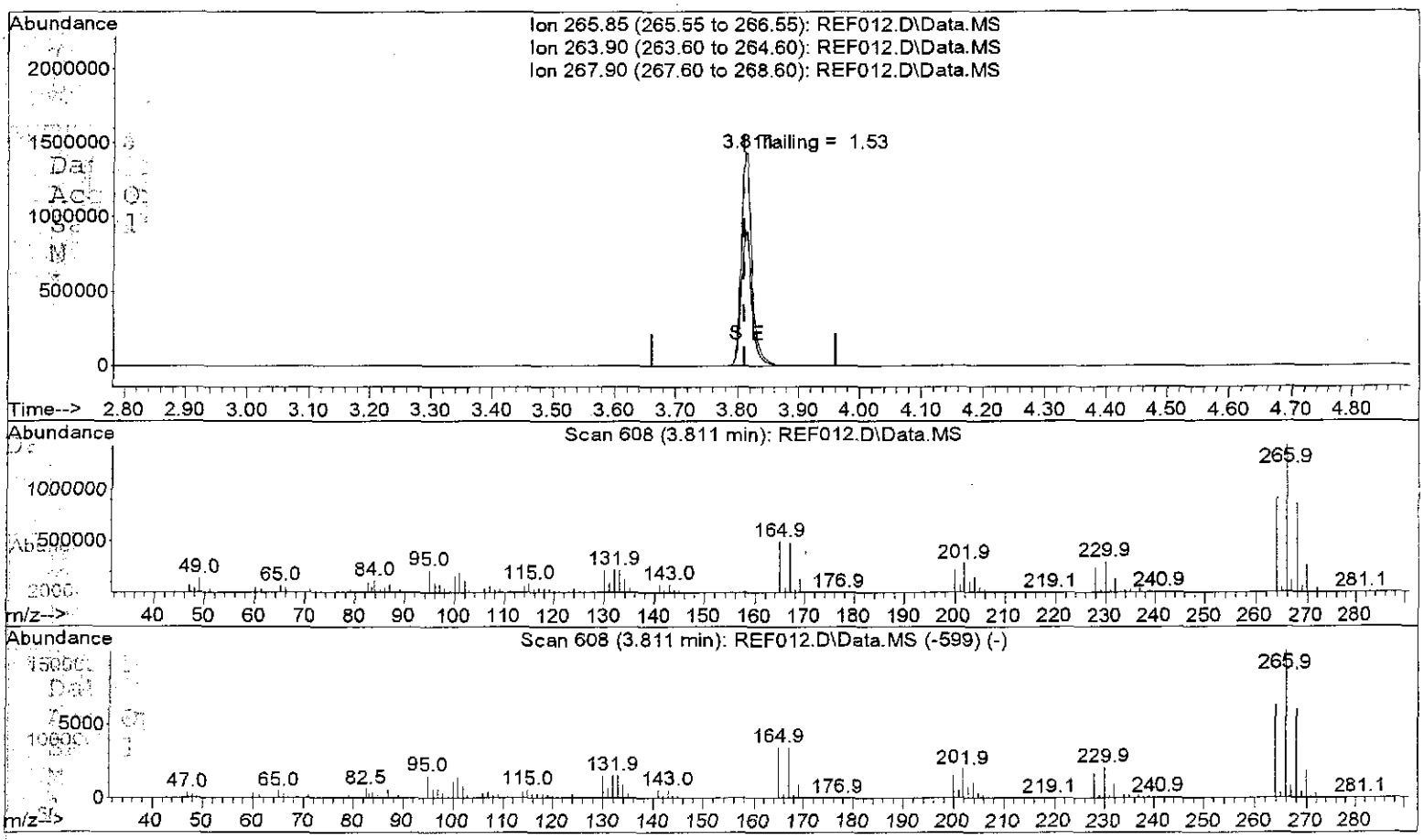
| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 10 | 80 | 44.4 | 737448 | PASS |
| 68 | 69 | 0.00 | 2 | 0.8 | 2241 | PASS |
| 69 | 198 | 0.00 | 100 | 17.7 | 294208 | PASS |
| 70 | 69 | 0.00 | 2 | 0.1 | 361 | PASS |
| 127 | 198 | 10 | 80 | 44.9 | 744448 | PASS |
| 197 | 198 | 0.00 | 2 | 0.7 | 11039 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1659221 | PASS |
| 199 | 198 | 5 | 9 | 6.2 | 103579 | PASS |
| 275 | 198 | 10 | 60 | 22.9 | 380501 | PASS |
| 365 | 198 | 1 | 100 | 1.7 | 27571 | PASS |
| 441 | 442 | 0.01 | 24 | 15.1 | 232107 | PASS |
| 442 | 198 | 50 | 100 | 92.9 | 1541632 | PASS |
| 443 | 442 | 15 | 24 | 18.6 | 286251 | PASS |

pu 7-11-14

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(1) Pentachlorophenol (T)

3.811min (+0.000) 50.00 ppm

response 1690635

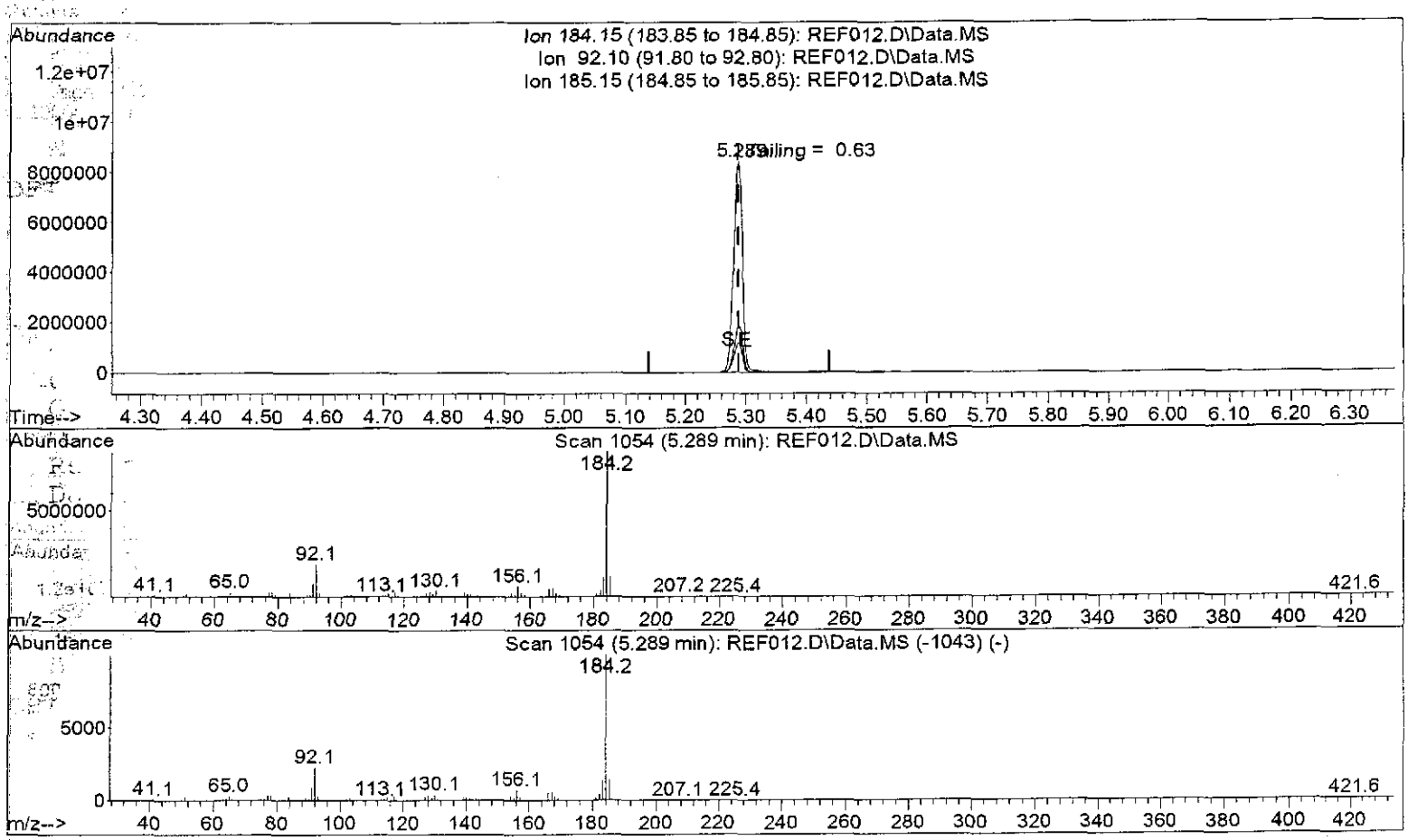
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 61.80 |
| 267.90 | 62.70 | 62.72# |
| 0.00 | 0.00 | 0.00 |

7-11-14

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(3) Benzidine (T)

5.289min (0.000) 50.00 ppm

response 8591117

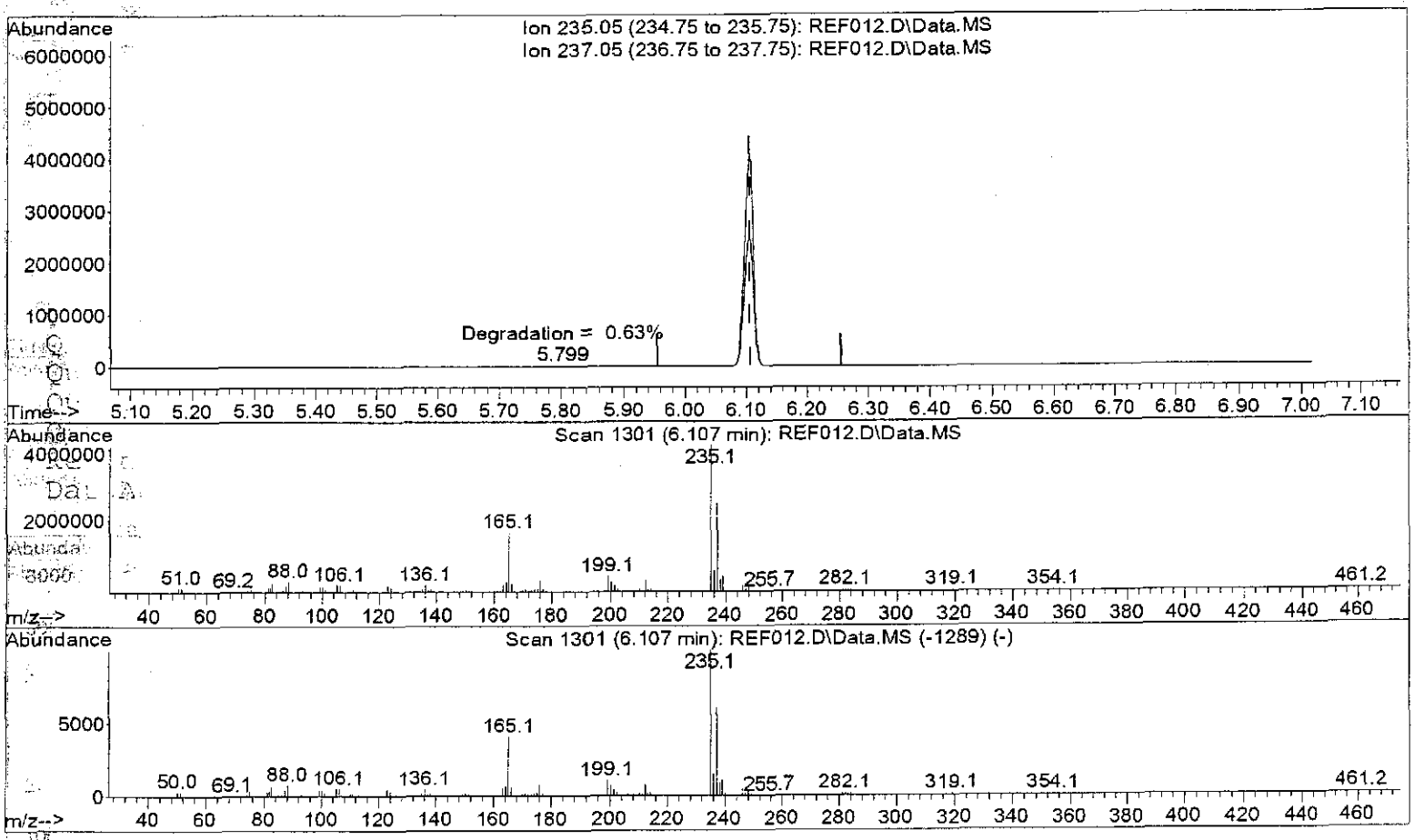
| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 21.65 |
| 185.15 | 13.30 | 13.29# |
| 0.00 | 0.00 | 0.00 |

7-11-14

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14E08\REF012.D
Acq On : 08 May 2014 11:44
Sample : DFTF0F0801
Misc : F0
Integrator: RTE
Quant Time: May 09 13:50:04 2014
Quant Results File: DFTPPD.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPD.M
Quant Title : DFTPP-8270D
QLast Update : Fri May 09 13:50:02 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KV
Inst : DSQ
Multiplr: 1.00




TIC: REF012.D\Data.MS

(6) DDT (T)
6.107min (0.000) 50.00 ppm
response 4079265

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.24 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

RC 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF018.D Vial: 8
Acq On : 08 May 2014 14:03 Operator: KV
Sample : SVF0E086 20PPB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:40:04 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

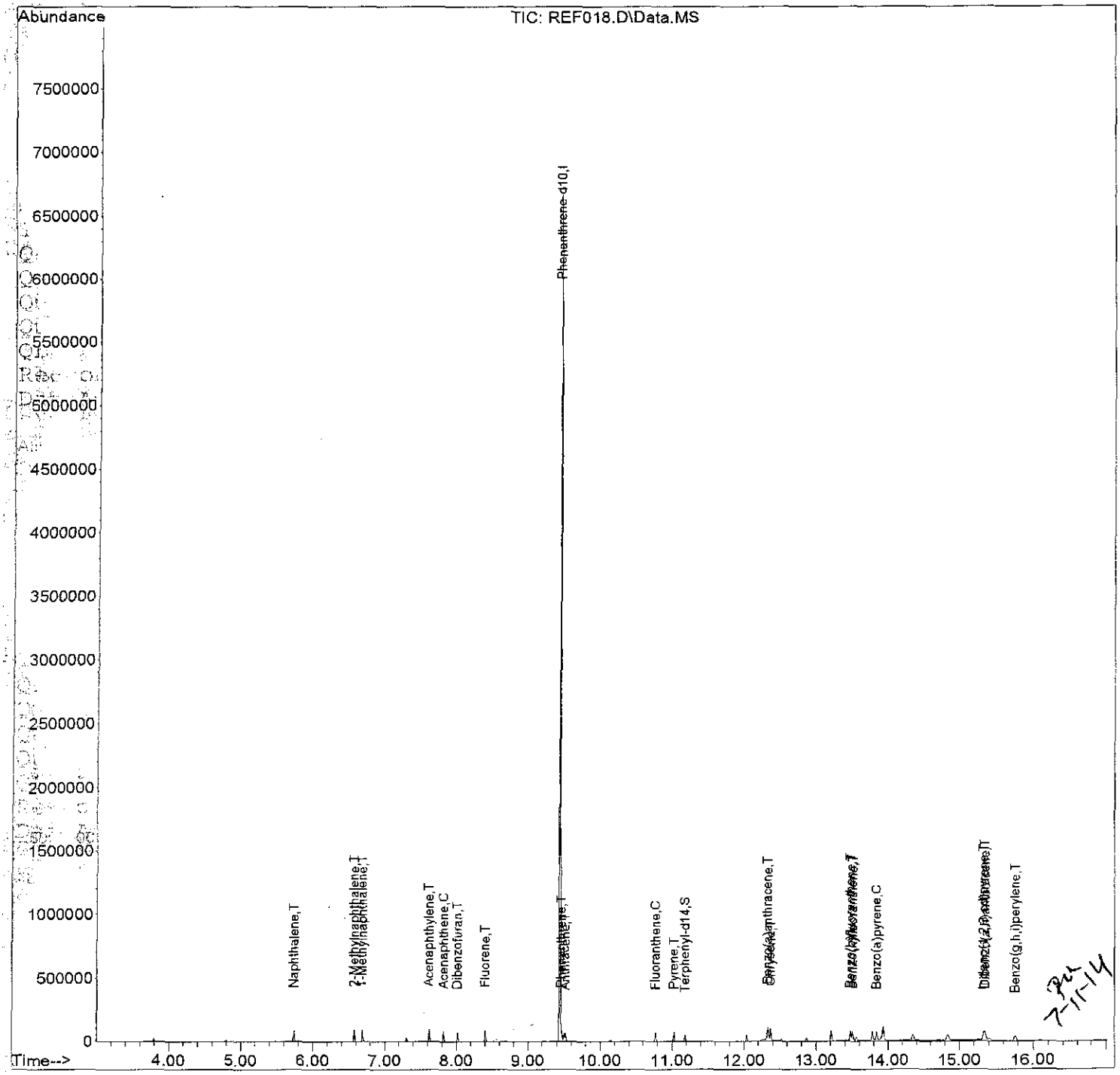
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 4821286 | 2000.00 ppb | 0.0 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 42038 | 23.58 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 4.72% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 76370 | 23.15 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 50590 | 22.86 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.693 | 142 | 47155 | 23.21 ppb | 98 |
| 5) Acenaphthylene | 7.623 | 152 | 65214 | 22.19 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 43775 | 22.90 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 55096 | 22.54 ppb | 98 |
| 8) Fluorene | 8.403 | 166 | 43644 | 22.37 ppb | 99 |
| 9) Phenanthrene | 9.469 | 178 | 56274 | 22.51 ppb | 99 |
| 10) Anthracene | 9.524 | 178 | 56170 | 22.37 ppb | 98 |
| 11) Fluoranthene | 10.774 | 202 | 53368 | 23.00 ppb | 98 |
| 12) Pyrene | 11.026 | 202 | 57800 | 23.03 ppb | 96 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 98467 | 20.95 ppb | 96 |
| 15) Chrysene | 12.368 | 228 | 76292 | 23.04 ppb | 50 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 73104 | 22.38 ppb | 95 |
| 17) Benzo(k)fluoranthene | 13.500 | 252 | 72569 | 22.24 ppb | 98 |
| 18) Benzo(a)pyrene | 13.838 | 252 | 68348 | 22.02 ppb | 92 |
| 19) Indeno(1,2,3-cd)pyrene | 15.331 | 276 | 83032 | 21.98 ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.348 | 278 | 70272 | 22.54 ppb | 92 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 67001 | 21.41 ppb | 97 |

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

KM 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF018.D Vial: 8
Acq On : 08 May 2014 14:03 Operator: KV
Sample : SVF0E086 20PPB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:40:04 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




RL 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF017.D
Vial: 7
Acq On : 08 May 2014 13:40
Operator: KV
Sample : SVF0E085 40PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:47 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

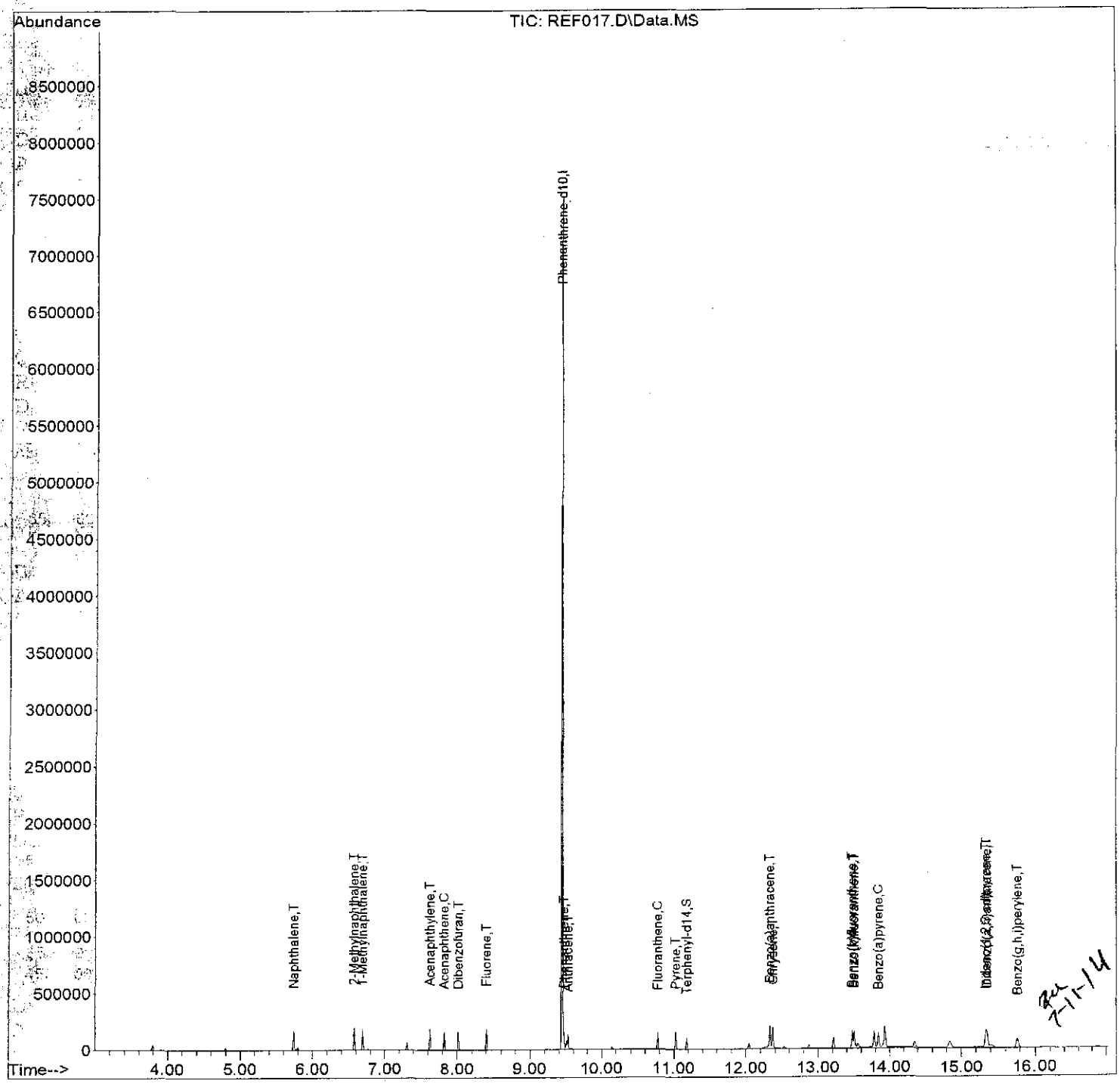
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.443 | 188 | 5477844 | 2000.00 ppb | 0.0 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.180 | 244 | 83327 | 41.13 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 8.23% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 152169 | 40.59 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.578 | 142 | 100467 | 39.96 ppb | 98 |
| 4) 1-Methylnaphthalene | 6.696 | 142 | 92719 | 40.16 ppb | 99 |
| 5) Acenaphthylene | 7.625 | 152 | 133087 | 39.85 ppb | 99 |
| 6) Acenaphthene | 7.823 | 153 | 87608 | 40.34 ppb | 99 |
| 7) Dibenzofuran | 8.016 | 168 | 112420 | 40.49 ppb | 99 |
| 8) Fluorene | 8.404 | 166 | 90161 | 40.67 ppb | 99 |
| 9) Phenanthrene | 9.470 | 178 | 117504 | 41.37 ppb | 98 |
| 10) Anthracene | 9.526 | 178 | 114777 | 40.22 ppb | 99 |
| 11) Fluoranthene | 10.775 | 202 | 109222 | 41.42 ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 115618 | 40.54 ppb | 98 |
| 14) Benzo(a)anthracene | 12.330 | 228 | 181359 | 39.18 ppb | 100 |
| 15) Chrysene | 12.369 | 228 | 153818 | 40.88 ppb | 77 |
| 16) Benzo(b)fluoranthene | 13.472 | 252 | 147590 | 39.76 ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.501 | 252 | 141499 | 38.17 ppb | 98 |
| 18) Benzo(a)pyrene | 13.842 | 252 | 136839 | 38.81 ppb | 95 |
| 19) Indeno(1,2,3-cd)pyrene | 15.333 | 276 | 170119 | 39.64 ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.349 | 278 | 140943 | 39.79 ppb | 93 |
| 21) Benzo(g,h,i)perylene | 15.760 | 276 | 139493 | 39.23 ppb | 99 |

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

PM 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF017.D
Vial: 7
Acq On : 08 May 2014 13:40
Operator: KV
Sample : SVF0E085 40PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:47 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




RL 7-1-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF016.D
Vial: 6
Acq On : 08 May 2014 13:17
Operator: KV
Sample : SVF0E084 80PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

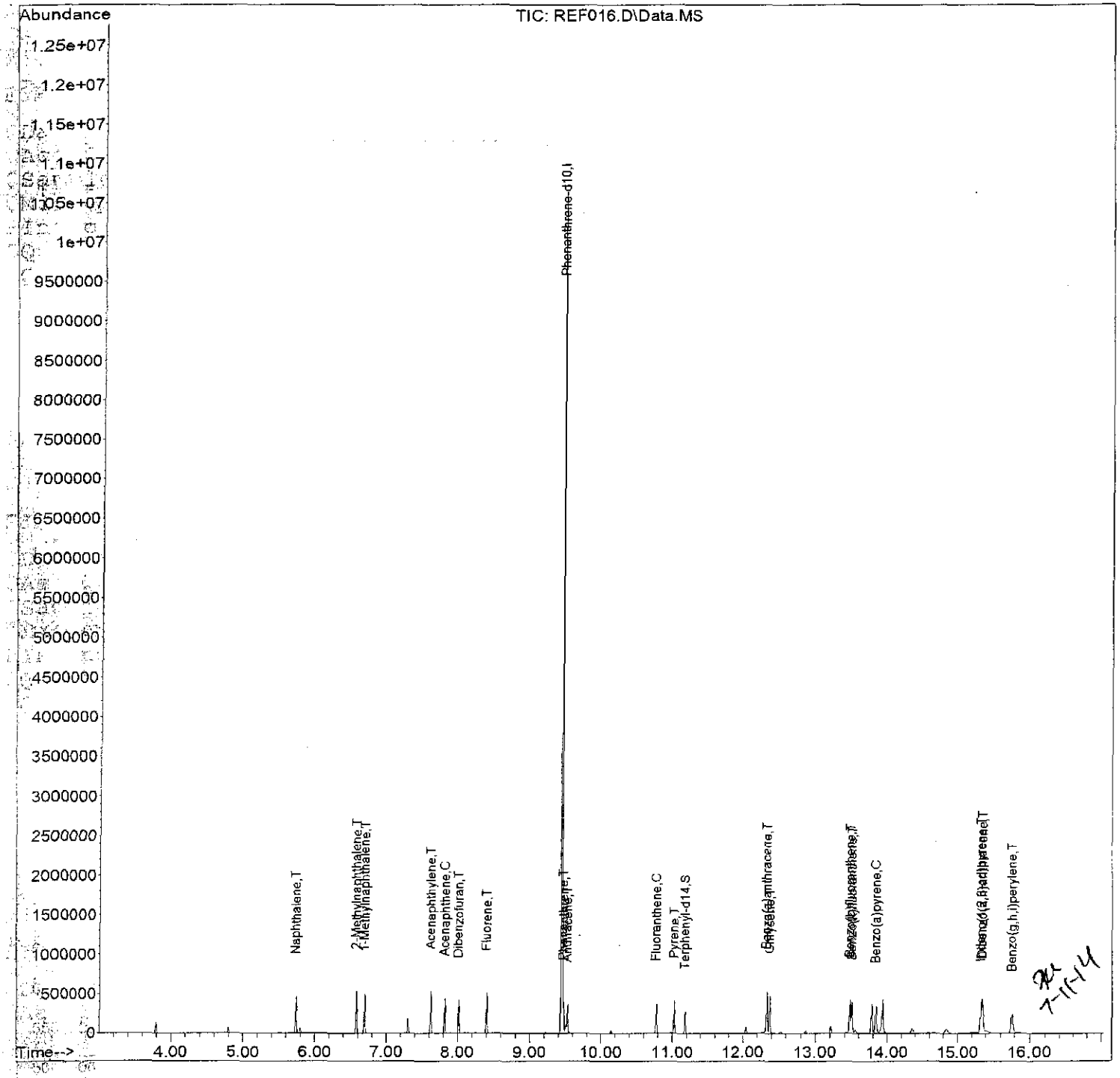
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 7937548 | 2000.00 ppb | 0.0 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 219212 | 74.67 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 14.93% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 401533 | 73.92 ppb | 98 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 271326 | 74.48 ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 250355 | 74.84 ppb | 99 |
| 5) Acenaphthylene | 7.626 | 152 | 359752 | 74.35 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 234592 | 74.54 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 300779 | 74.76 ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 241130 | 75.06 ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 311853 | 75.77 ppb | 100 |
| 10) Anthracene | 9.527 | 178 | 313341 | 75.78 ppb | 99 |
| 11) Fluoranthene | 10.775 | 202 | 288030 | 75.38 ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 312643 | 75.65 ppb | 97 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 462964 | 75.43 ppb | 100 |
| 15) Chrysene | 12.370 | 228 | 410255 | 75.25 ppb | 97 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 403227 | 74.97 ppb | 99 |
| 17) Benzo(k)fluoranthene | 13.502 | 252 | 397711 | 74.04 ppb | 99 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 372463 | 72.90 ppb | 99 |
| 19) Indeno(1,2,3-cd)pyrene | 15.331 | 276 | 459641 | 73.91 ppb | 98 |
| 20) Dibenzo(a,h)anthracene | 15.348 | 278 | 378829 | 73.81 ppb | 99 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 392568 | 76.19 ppb | 98 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF016.D Vial: 6
Acq On : 08 May 2014 13:17 Operator: KV
Sample : SVF0E084 80PPB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF015.D
Vial: 5
Acq On : 08 May 2014 12:54
Operator: KV
Sample : SVF0E083 100PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

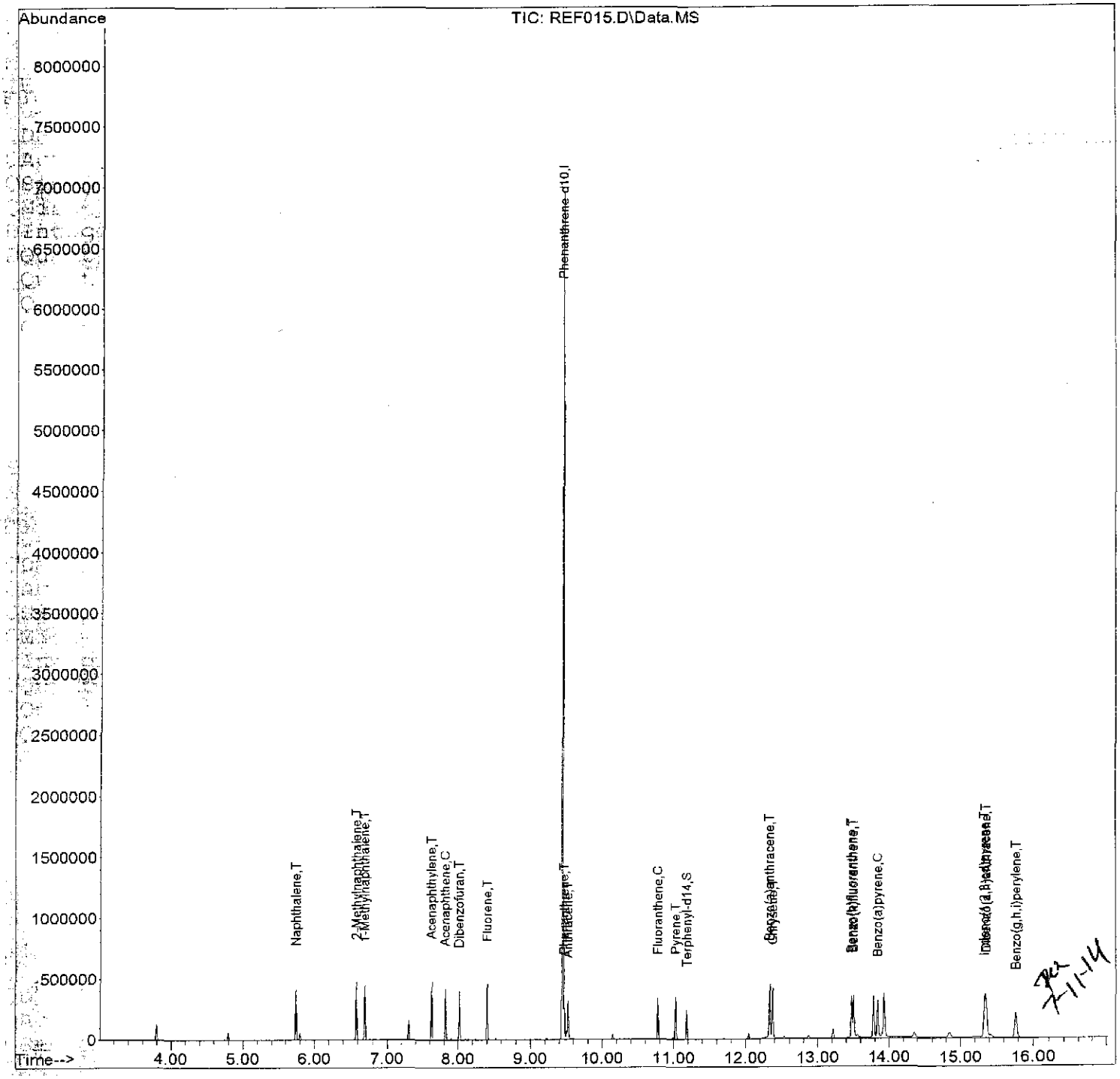
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.444 | 188 | 5327101 | 2000.00 | ppb | 0.0 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.181 | 244 | 190088 | 96.48 | ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = | 19.30% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.742 | 128 | 357872 | 98.17 | ppb | 99 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 244851 | 100.15 | ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 222774 | 99.22 | ppb | 99 |
| 5) Acenaphthylene | 7.626 | 152 | 328041 | 101.01 | ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 213620 | 101.14 | ppb | 99 |
| 7) Dibenzofuran | 8.015 | 168 | 270411 | 100.14 | ppb | 99 |
| 8) Fluorene | 8.403 | 166 | 218467 | 101.34 | ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 278620 | 100.87 | ppb | 99 |
| 10) Anthracene | 9.527 | 178 | 278120 | 100.22 | ppb | 99 |
| 11) Fluoranthene | 10.777 | 202 | 253501 | 98.86 | ppb | 99 |
| 12) Pyrene | 11.027 | 202 | 274024 | 98.80 | ppb | 96 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 396477 | 98.57 | ppb | 96 |
| 15) Chrysene | 12.370 | 228 | 353201 | 96.53 | ppb | 93 |
| 16) Benzo(b)fluoranthene | 13.472 | 252 | 349041 | 96.69 | ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.502 | 252 | 359178 | 99.63 | ppb | 98 |
| 18) Benzo(a)pyrene | 13.840 | 252 | 333230 | 97.18 | ppb | 100 |
| 19) Indeno(1,2,3-cd)pyrene | 15.333 | 276 | 402132 | 96.35 | ppb | 98 |
| 20) Dibenzo(a,h)anthracene | 15.350 | 278 | 332039 | 96.40 | ppb | 99 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 337001 | 97.45 | ppb | 100 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF015.D
Vial: 5
Acq On : 08 May 2014 12:54
Operator: KV
Sample : SVF0E083 100PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:17 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF014.D Vial: 4
Acq On : 08 May 2014 12:31 Operator: KV
Sample : SVF0E082 500PPB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:00 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

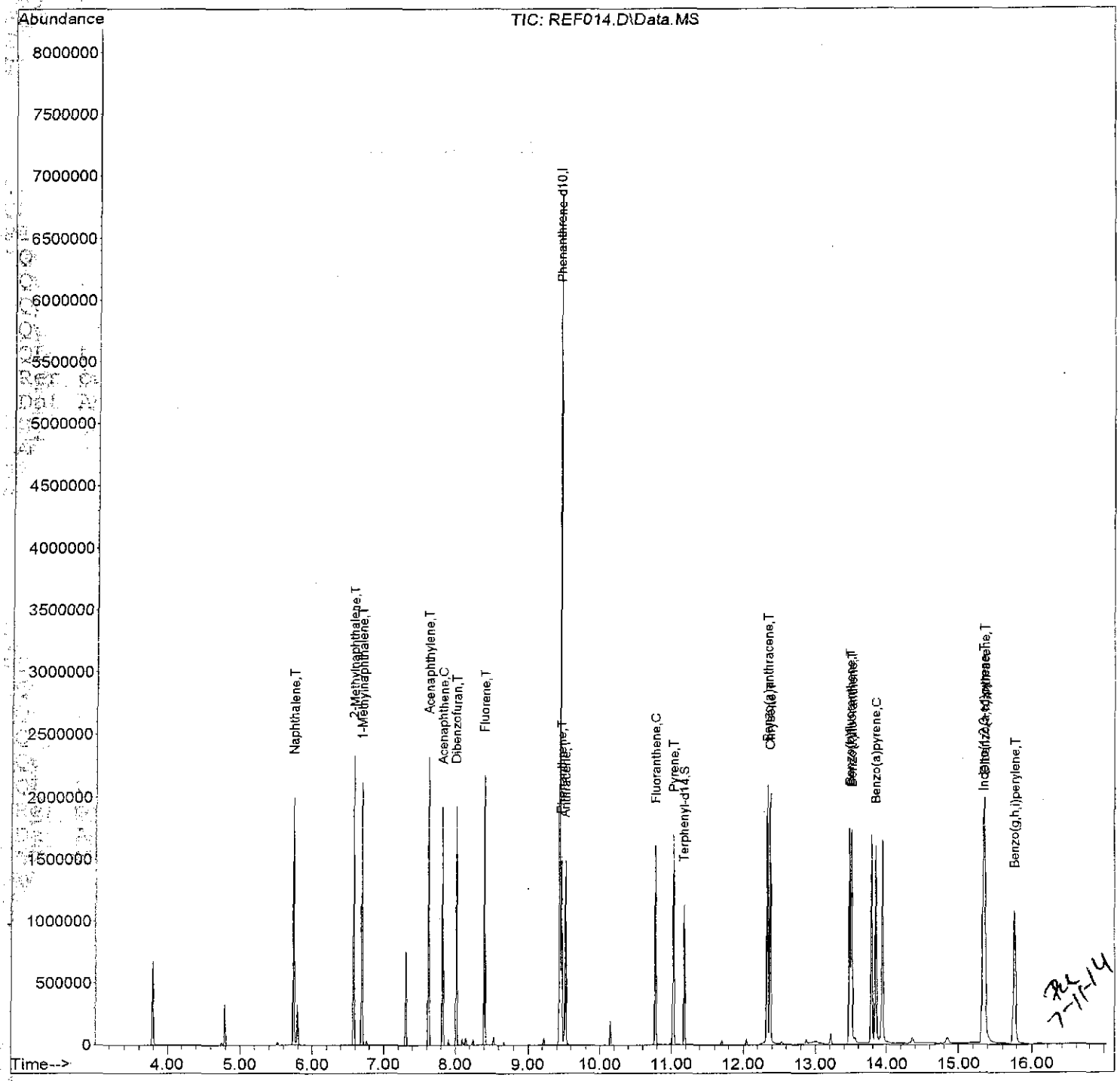
| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Phenanthrene-d10 | 9.444 | 188 | 5005097 | 2000.00 | ppb | 0.0 |
| System Monitoring Compounds | | | | | | |
| 13) Terphenyl-d14 | 11.181 | 244 | 918914 | 496.42 | ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = | 99.28% | |
| Target Compounds | | | | | | Qvalue |
| 2) Naphthalene | 5.741 | 128 | 1741943 | 508.59 | ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 1168286 | 508.61 | ppb | 100 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 1062669 | 503.76 | ppb | 100 |
| 5) Acenaphthylene | 7.626 | 152 | 1557242 | 510.37 | ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 984537 | 496.11 | ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 1273461 | 501.94 | ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 1006867 | 497.08 | ppb | 100 |
| 9) Phenanthrene | 9.471 | 178 | 1283892 | 494.70 | ppb | 100 |
| 10) Anthracene | 9.527 | 178 | 1310366 | 502.58 | ppb | 100 |
| 11) Fluoranthene | 10.777 | 202 | 1197242 | 496.93 | ppb | 100 |
| 12) Pyrene | 11.029 | 202 | 1289762 | 494.96 | ppb | 100 |
| 14) Benzo(a)anthracene | 12.331 | 228 | 1904241 | 538.42 | ppb | 100 |
| 15) Chrysene | 12.370 | 228 | 1736704 | 505.18 | ppb | 100 |
| 16) Benzo(b)fluoranthene | 13.475 | 252 | 1763855 | 520.06 | ppb | 100 |
| 17) Benzo(k)fluoranthene | 13.504 | 252 | 1812490 | 535.08 | ppb | 100 |
| 18) Benzo(a)pyrene | 13.842 | 252 | 1724163 | 535.18 | ppb | 100 |
| 19) Indeno(1,2,3-cd)pyrene | 15.336 | 276 | 2073112 | 528.68 | ppb | 100 |
| 20) Dibenzo(a,h)anthracene | 15.353 | 278 | 1685316 | 520.75 | ppb | 100 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 1737462 | 534.77 | ppb | 100 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF014.D
Vial: 4
Acq On : 08 May 2014 12:31
Operator: KV
Sample : SVF0E082 500PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:39:00 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




RCL 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF013.D
Vial: 3
Acq On : 08 May 2014 12:10
Operator: KV
Sample : SVF0E081 1000PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:38:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

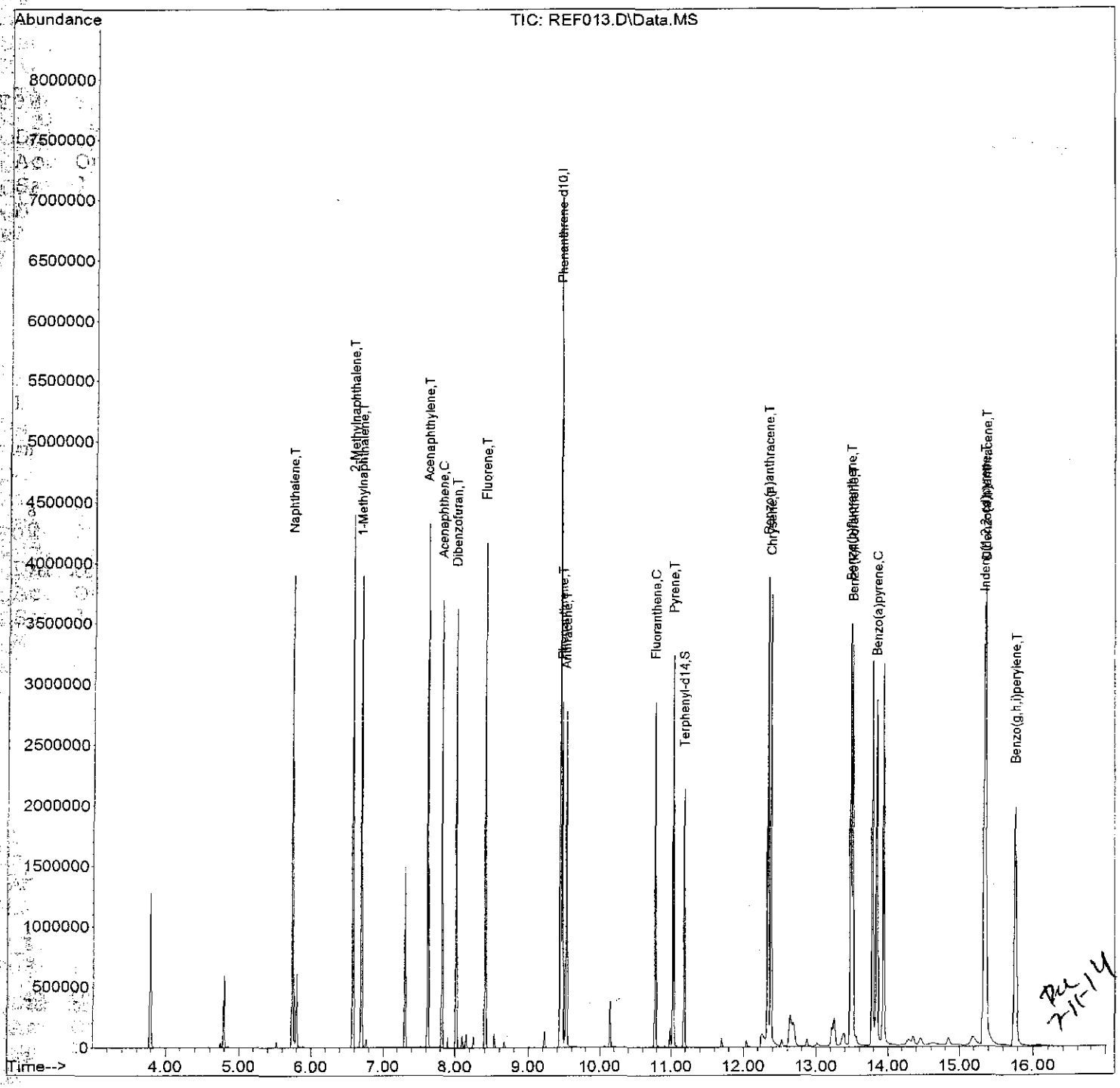
| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 5187965 | 2000.00 ppb | 0.0 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.179 | 244 | 1730433 | 901.87 ppb | 0.00 |
| Spiked Amount 500.000 | | | Recovery | = 180.37% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 3212458 | 904.87 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 2161799 | 907.96 ppb | 100 |
| 4) 1-Methylnaphthalene | 6.693 | 142 | 1968901 | 900.47 ppb | 100 |
| 5) Acenaphthylene | 7.623 | 152 | 2954163 | 934.07 ppb | 99 |
| 6) Acenaphthene | 7.821 | 153 | 1874579 | 911.31 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 2421617 | 920.85 ppb | 99 |
| 8) Fluorene | 8.403 | 166 | 1929445 | 918.98 ppb | 100 |
| 9) Phenanthrene | 9.469 | 178 | 2407864 | 895.09 ppb | 100 |
| 10) Anthracene | 9.525 | 178 | 2490401 | 921.51 ppb | 100 |
| 11) Fluoranthene | 10.775 | 202 | 2222593 | 889.99 ppb | 100 |
| 12) Pyrene | 11.027 | 202 | 2462047 | 911.53 ppb | 100 |
| 14) Benzo(a)anthracene | 12.329 | 228 | 3522474 | 967.45 ppb | 94 |
| 15) Chrysene | 12.368 | 228 | 3242045 | 909.81 ppb | 99 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 3315418 | 943.07 ppb | 96 |
| 17) Benzo(k)fluoranthene | 13.503 | 252 | 3307129 | 941.91 ppb | 91 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 3256376 | 975.15 ppb | 96 |
| 19) Indeno(1,2,3-cd)pyrene | 15.336 | 276 | 3922801 | 965.12 ppb | 99 |
| 20) Dibenzo(a,h)anthracene | 15.351 | 278 | 3186834 | 950.01 ppb | 100 |
| 21) Benzo(g,h,i)perylene | 15.763 | 276 | 3207572 | 952.45 ppb | 98 |

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

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF013.D
Vial: 3
Acq On : 08 May 2014 12:10
Operator: KV
Sample : SVF0E081 1000PPB
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:38:33 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M




PW 7-1-14

# SECOND SOURCE VERIFICATION

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Acq On : 08 May 2014 14:26
Sample : ISVF0E081
Misc : F0
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 9
Operator: KV
Inst : DSQ
Multiplr: 1.00

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | Amount | Calc. | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 2000.000 | 2000.000 | 0.0 | 126 | 0.00 |
| 2 | T | Naphthalene | 500.000 | 475.713 | 4.9 | 117 | 0.00 |
| 3 | T | 2-Methylnaphthalene | 500.000 | 460.899 | 7.8 | 114 | 0.00 |
| 4 | T | 1-Methylnaphthalene | 500.000 | 479.043 | 4.2 | 119 | 0.00 |
| 5 | T | Acenaphthylene | 500.000 | 469.742 | 6.1 | 116 | 0.00 |
| 6 | C | Acenaphthene | 500.000 | 479.360 | 4.1 | 121 | 0.00 |
| 7 | T | Dibenzofuran | 500.000 | 455.746 | 8.9 | 114 | 0.00 |
| 8 | T | Fluorene | 500.000 | 469.595 | 6.1 | 119 | 0.00 |
| 9 | T | Phenanthrene | 500.000 | 470.736 | 5.9 | 119 | 0.00 |
| 10 | T | Anthracene | 500.000 | 464.238 | 7.2 | 116 | 0.00 |
| 11 | C | Fluoranthene | 500.000 | 488.088 | 2.4 | 123 | 0.00 |
| 12 | T | Pyrene | 500.000 | 471.132 | 5.8 | 120 | 0.00 |
| 13 | S | Terphenyl-d14 | 500.000 | 0.000 | 100.0# | 0 | -11.18# |
| 14 | T | Benzo(a)anthracene | 500.000 | 513.537 | -2.7 | 120 | 0.00 |
| 15 | T | Chrysene | 500.000 | 482.748 | 3.5 | 120 | 0.00 |
| 16 | T | Benzo(b)fluoranthene | 500.000 | 496.628 | 0.7 | 120 | 0.00 |
| 17 | T | Benzo(k)fluoranthene | 500.000 | 494.243 | 1.2 | 116 | 0.00 |
| 18 | C | Benzo(a)pyrene | 500.000 | 494.774 | 1.0 | 116 | 0.00 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 500.000 | 490.776 | 1.8 | 117 | 0.00 |
| 20 | T | Dibenzo(a,h)anthracene | 500.000 | 488.185 | 2.4 | 118 | 0.00 |
| 21 | T | Benzo(g,h,i)perylene | 500.000 | 490.934 | 1.8 | 115 | 0.00 |

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

7-1-14

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14E08\REF019.D  Vial: 9
Acq On : 08 May 2014 14:26  Operator: KV
Sample : ISVF0E081  Inst : DSQ
Misc : F0  Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 126 | 0.00 |
| 2 | T | Naphthalene | 1.369 | 1.302 | 4.9 | 117 | 0.00 |
| 3 | T | 2-Methylnaphthalene | 0.918 | 0.846 | 7.8 | 114 | 0.00 |
| 4 | T | 1-Methylnaphthalene | 0.843 | 0.808 | 4.2 | 119 | 0.00 |
| 5 | T | Acenaphthylene | 1.219 | 1.145 | 6.1 | 116 | 0.00 |
| 6 | C | Acenaphthene | 0.793 | 0.760 | 4.2 | 121 | 0.00 |
| 7 | T | Dibenzofuran | 1.014 | 0.924 | 8.9 | 114 | 0.00 |
| 8 | T | Fluorene | 0.809 | 0.760 | 6.1 | 119 | 0.00 |
| 9 | T | Phenanthrene | 1.037 | 0.976 | 5.9 | 119 | 0.00 |
| 10 | T | Anthracene | 1.042 | 0.967 | 7.2 | 116 | 0.00 |
| 11 | C | Fluoranthene | 0.963 | 0.940 | 2.4 | 123 | 0.00 |
| 12 | T | Pyrene | 1.041 | 0.981 | 5.8 | 120 | 0.00 |
| 13 | S | Terphenyl-d14 | 0.740 | 0.000# | 100.0# | 0# | -11.18# |
| 14 | T | Benzo(a)anthracene | 1.587 | 1.453 | 8.4 | 120 | 0.00 |
| 15 | T | Chrysene | 1.374 | 1.326 | 3.5 | 120 | 0.00 |
| 16 | T | Benzo(b)fluoranthene | 1.355 | 1.346 | 0.7 | 120 | 0.00 |
| 17 | T | Benzo(k)fluoranthene | 1.354 | 1.338 | 1.2 | 116 | 0.00 |
| 18 | C | Benzo(a)pyrene | 1.287 | 1.274 | 1.0 | 116 | 0.00 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 1.567 | 1.538 | 1.9 | 117 | 0.00 |
| 20 | T | Dibenzo(a,h)anthracene | 1.293 | 1.263 | 2.3 | 118 | 0.00 |
| 21 | T | Benzo(g,h,i)perylene | 1.298 | 1.275 | 1.8 | 115 | 0.00 |

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

pw 7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Vial: 9
Acq On : 08 May 2014 14:26
Operator: KV
Sample : ISVF0E081
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.442 | 188 | 6284290 | 2000.00 ppb | 0.0 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 0.000 | 244 | 0d | 0.00 ppb | |
| Spiked Amount 500.000 | | | Recovery | = 0.00% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.739 | 128 | 2045775 | 475.71 ppb | 100 |
| 3) 2-Methylnaphthalene | 6.577 | 142 | 1329272 | 460.90 ppb | 99 |
| 4) 1-Methylnaphthalene | 6.695 | 142 | 1268792 | 479.04 ppb | 100 |
| 5) Acenaphthylene | 7.626 | 152 | 1799597 | 469.74 ppb | 100 |
| 6) Acenaphthene | 7.821 | 153 | 1194428 | 479.36 ppb | 100 |
| 7) Dibenzofuran | 8.015 | 168 | 1451767 | 455.75 ppb | 100 |
| 8) Fluorene | 8.403 | 166 | 1194287 | 469.59 ppb | 100 |
| 9) Phenanthrene | 9.469 | 178 | 1533926 | 470.74 ppb | 100 |
| 10) Anthracene | 9.525 | 178 | 1519738 | 464.24 ppb | 100 |
| 11) Fluoranthene | 10.775 | 202 | 1476496 | 488.09 ppb | 100 |
| 12) Pyrene | 11.027 | 202 | 1541444 | 471.13 ppb | 97 |
| 14) Benzo(a)anthracene | 12.330 | 228 | 2282138 | 513.54 ppb | 94 |
| 15) Chrysene | 12.368 | 228 | 2083761 | 482.75 ppb | 98 |
| 16) Benzo(b)fluoranthene | 13.473 | 252 | 2114870 | 496.63 ppb | 97 |
| 17) Benzo(k)fluoranthene | 13.501 | 252 | 2102041 | 494.24 ppb | 100 |
| 18) Benzo(a)pyrene | 13.841 | 252 | 2001383 | 494.77 ppb | 99 |
| 19) Indeno(1,2,3-cd)pyrene | 15.332 | 276 | 2416327 | 490.78 ppb | 97 |
| 20) Dibenzo(a,h)anthracene | 15.349 | 278 | 1983704 | 488.19 ppb | 97 |
| 21) Benzo(g,h,i)perylene | 15.761 | 276 | 2002714 | 490.93 ppb | 99 |

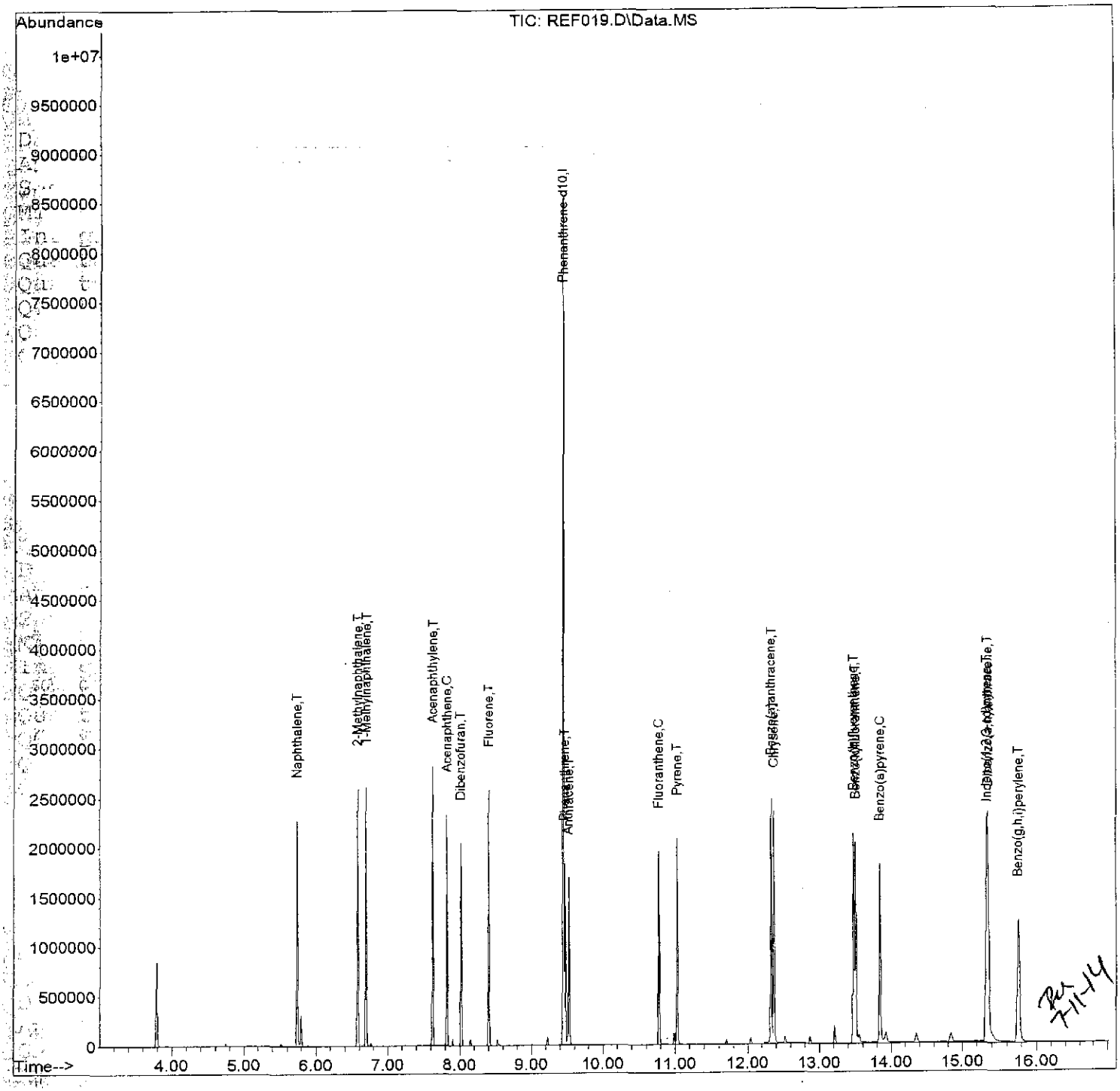
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7-11-14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14E08\REF019.D
Acq On : 08 May 2014 14:26
Sample : ISVF0E081
Misc : F0
Integrator: RTE
Quant Time: May 08 14:51:50 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 9
Operator: KV
Inst : DSQ
Multiplr: 1.00




SVF0E08.M Thu May 08 14:52:17 2014 F0

# DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RKF111
Instrument ID: TOFO

Project: RED HILL PHASE 1B
SDG No.: 14K089
DFTPP Injection Date: 11/20/14
DFTPP Injection Time: 10:03

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 51 | 30.0 - 60.0% of mass 198 | 30.94 |
| 68 | Less than 2% of mass 69 | 0.20( 1.2)1 |
| 69 | Relative abundance of mass 198 | 16.69 |
| 70 | Less than 2.0% of mass 69 | 0.01( 0.1)1 |
| 127 | 40.0 - 60.0% of mass 198 | 42.38 |
| 197 | Less than 1.0% of mass 198 | 0.33 |
| 198 | Base Peak, 100% relative abundance | 100.00 |
| 199 | 5.0 - 9.0% of mass 198 | 6.46 |
| 275 | 10.0 - 30.0% of mass 198 | 23.64 |
| 365 | Greater than 1.00% of mass 198 | 1.83 |
| 441 | Present, but less than mass 443 | 12.79( 76.4)3 |
| 442 | Greater than 40.0% of mass 198 | 94.88 |
| 443 | 17.0 - 23.0% of mass 442 | 16.73( 17.6)2 |

1-Value is % mass 69 2-Value is % mass 442
3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 1 | SSTD500 | CSVF0E0808 | RKF112 | 11/20/14 | 11:32 |
| 2 | LCS1W | SVK020WL | RKF113 | 11/20/14 | 12:02 |
| 3 | LCD1W | SVK020WC | RKF114 | 11/20/14 | 12:20 |
| 4 | MBLK1W | SVK020WB | RKF115 | 11/20/14 | 12:44 |
| 5 | HW111214-01 | K089-02 | RKF116 | 11/20/14 | 13:08 |
| 6 | HW111214-02 | K089-03 | RKF117 | 11/20/14 | 13:31 |



FORM V SV OLM02.0

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RKF112
Instrument ID: TOFO

Project:RED HILL PHASE 1B
SDG No.: 14K089
Date Analyzed: 11/20/14
Time Analyzed: 11:32

| | | IS4(PHN) AREA # | RT # | IS5(CRY) AREA # | RT # | IS6(PRY) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 6894091 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| | UPPER LIMIT | 13788182 | 9.97 | 0 | 0.50 | 0 | 0.50 |
| | LOWER LIMIT | 3447046 | 8.97 | 0 | -0.50 | 0 | -0.50 |
| | SAMPLE ID | | | | | | |
| 1 | SSTD500 | 6894091 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 2 | LCS1W | 5218746 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 3 | LCD1W | 5354199 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 4 | MBLK1W | 4966584 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 5 | HW111214-01 | 4443986 | 9.47 | 0 | 0.00 | 0 | 0.00 |
| 6 | HW111214-02 | 4949157 | 9.47 | 0 | 0.00 | 0 | 0.00 |

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.



FORM VIII SV-2 OLM02.0

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :DSQ
IC_Beginning DateTime :05/08/14 12:10
Spike Amount :500 PPB
CC/CV File :RKF112
IC File :REF014

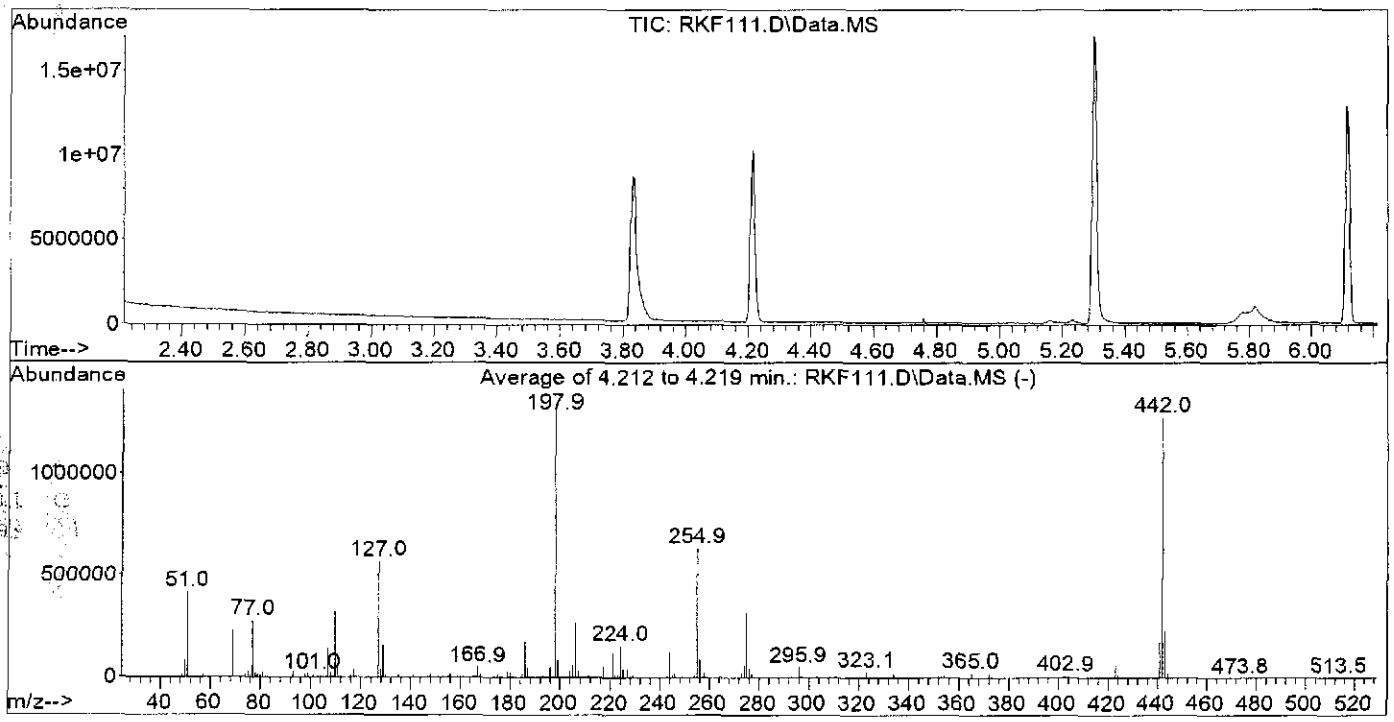
Column Spec :ZB-SEMIVOA ID:0.25MM
IC_Ending DateTime :05/08/14 14:03
HPChem Method :SVFOE08
Date_Time :11/20/14 11:32

| M IDX | Parameters | CC_Con | CC%_D | CC_Resp | CCRRF | AvRRF | CC_Rtm | AvRtm | %_RSD | Co_X0 | Co_X1 | Co_X2 | Co_Cor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Phenanthrene-d10 | 2000.00 | 0 | 6894091 | 1 | 1 | 9.469 | 9.443 | 0 | | | | |
| 2 | Naphthalene | 497.272 | -0.5 | 2345996 | 1.361 | 1.369 | 5.766 | 5.740 | 8.99 | | | | |
| 3 | 2-Methylnaphthalene | 492.069 | -1.6 | 1556882 | 0.903 | 0.918 | 6.608 | 6.577 | 8.25 | | | | |
| 4 | 1-Methylnaphthalene | 467.461 | -6.5 | 1358258 | 0.788 | 0.843 | 6.724 | 6.694 | 8.93 | | | | |
| 5 | Acenaphthylene | 478.056 | -4.4 | 2009164 | 1.166 | 1.219 | 7.657 | 7.625 | 6.61 | | | | |
| 6 | Acenaphthene | 482.543 | -3.5 | 1319029 | 0.765 | 0.793 | 7.852 | 7.821 | 8.22 | | | | |
| 7 | Dibenzofuran | 433.374 | -13.3 | 1514460 | 0.879 | 1.014 | 8.046 | 8.015 | 7.34 | | | | |
| 8 | Fluorene | 424.711 | -15.1 | 1184948 | 0.688 | 0.809 | 8.430 | 8.403 | 7.05 | | | | |
| 9 | Phenanthrene | 414.606 | -17.1 | 1482118 | 0.860 | 1.037 | 9.495 | 9.470 | 7.86 | | | | |
| 10 | Anthracene | 453.048 | -9.4 | 1627019 | 0.944 | 1.042 | 9.554 | 9.526 | 6.78 | | | | |
| 11 | Fluoranthene | 436.283 | -12.7 | 1447849 | 0.840 | 0.963 | 10.802 | 10.776 | 8.86 | | | | |
| 12 | Pyrene | 419.507 | -16.1 | 1505723 | 0.874 | 1.041 | 11.053 | 11.027 | 8.26 | | | | |
| 13 | Terphenyl-d14 | 570.905 | 14.2 | 1455642 | 0.845 | 0.740 | 11.206 | 11.179 | 9.81 | | | | |
| 14 | Benzo(a)anthracene | 530.227 | 6.0 | 2583641 | 1.499 | 1.587 | 12.356 | 12.330 | 15.30 | 0.0058 | 1.3915 | | 0.9984 |
| 15 | Chrysene | 524.677 | 4.9 | 2484505 | 1.442 | 1.374 | 12.395 | 12.369 | 8.55 | | | | |
| 16 | Benzo(b)fluoranthene | 487.658 | -2.5 | 2278182 | 1.322 | 1.355 | 13.502 | 13.473 | 6.94 | | | | |
| 17 | Benzo(k)fluoranthene | 557.079 | 11.4 | 2599189 | 1.508 | 1.354 | 13.531 | 13.502 | 7.55 | | | | |
| 18 | Benzo(a)pyrene | 483.344 | -3.3 | 2144869 | 1.244 | 1.287 | 13.877 | 13.841 | 7.12 | | | | |
| 19 | Indeno(1,2,3-cd)pyrene | 435.002 | -13.0 | 2349548 | 1.363 | 1.567 | 15.392 | 15.333 | 6.56 | | | | |
| 20 | Dibenzo(a,h)anthracene | 405.023 | -19.0 | 1805482 | 1.048 | 1.293 | 15.411 | 15.350 | 7.44 | | | | |
| 21 | Benzo(g,h,i)perylene | 468.961 | -6.2 | 2098711 | 1.218 | 1.298 | 15.829 | 15.762 | 5.54 | | | | |

Data Path : C:\msdchem\1\DATA\14K20\
Data File : RKF111.D
Acq On : 20 Nov 2014 10:03
Operator : KVu
Sample : DFTF0E0808
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Fri May 09 13:48:37 2014



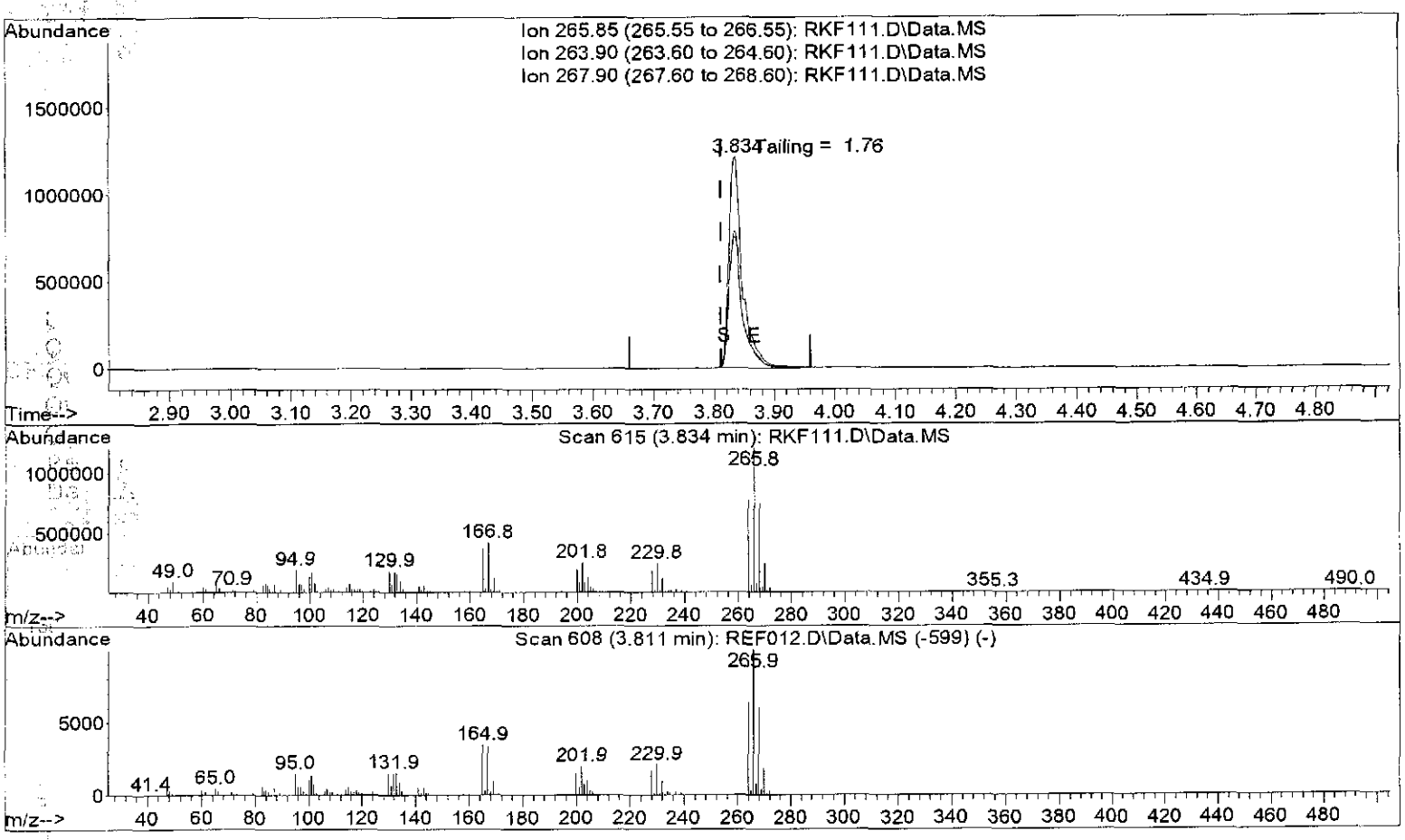

AutoFind: Scans 729, 730, 731; Background Corrected with Scan 717

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 51 | 198 | 30 | 60 | 30.9 | 416915 | PASS |
| 68 | 69 | 0.00 | 2 | 1.2 | 2739 | PASS |
| 69 | 198 | 0.00 | 100 | 16.7 | 224853 | PASS |
| 70 | 69 | 0.00 | 2 | 0.1 | 153 | PASS |
| 127 | 198 | 40 | 60 | 42.4 | 570965 | PASS |
| 197 | 198 | 0.00 | 1 | 0.3 | 4468 | PASS |
| 198 | 198 | 100 | 100 | 100.0 | 1347413 | PASS |
| 199 | 198 | 5 | 9 | 6.5 | 87024 | PASS |
| 275 | 198 | 10 | 30 | 23.6 | 318507 | PASS |
| 365 | 198 | 1 | 100 | 1.8 | 24637 | PASS |
| 441 | 443 | 0.01 | 100 | 76.4 | 172288 | PASS |
| 442 | 198 | 40 | 100 | 94.9 | 1278464 | PASS |
| 443 | 442 | 17 | 23 | 17.6 | 225387 | PASS |

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14K20\RKF111.D
Acq On : 20 Nov 2014 10:03
Sample : DFTF0E0808
Misc : F0
Integrator: RTE
Quant Time: Nov 20 10:13:57 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RKF111.D\Data.MS

(1) Pentachlorophenol (T)

3.834min (+0.023) 56.27 ppm

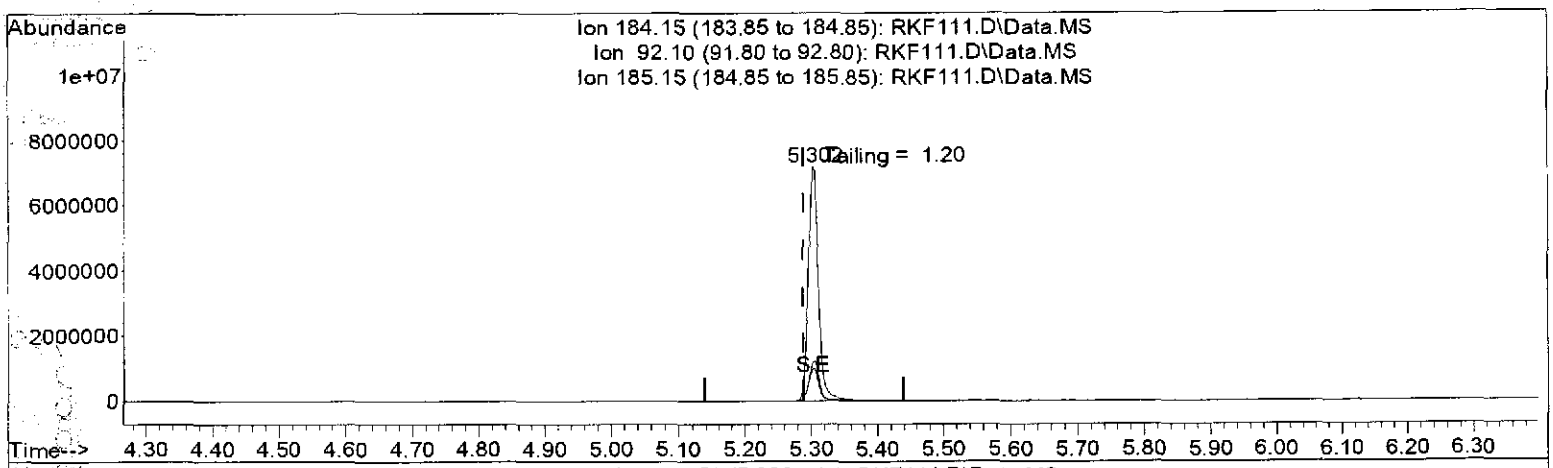
response 1902610

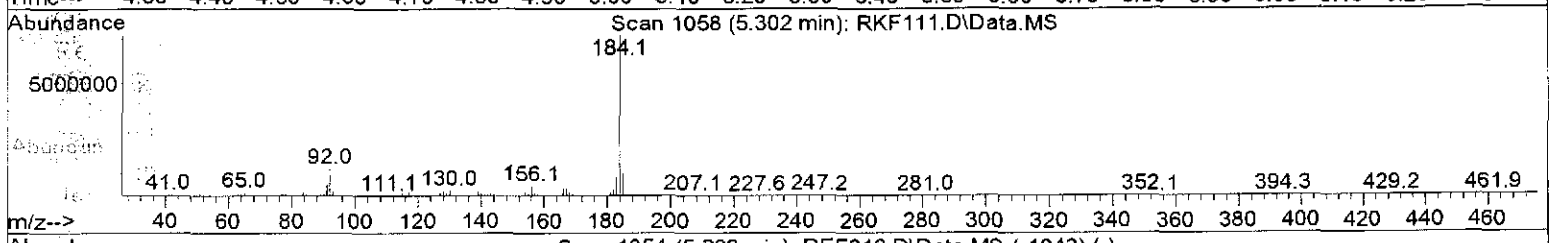
| Ion | Exp% | Act% |
|---|---|---|
| 265.85 | 100 | 100 |
| 263.90 | 61.80 | 62.67 |
| 267.90 | 62.70 | 63.33 |
| 0.00 | 0.00 | 0.00 |

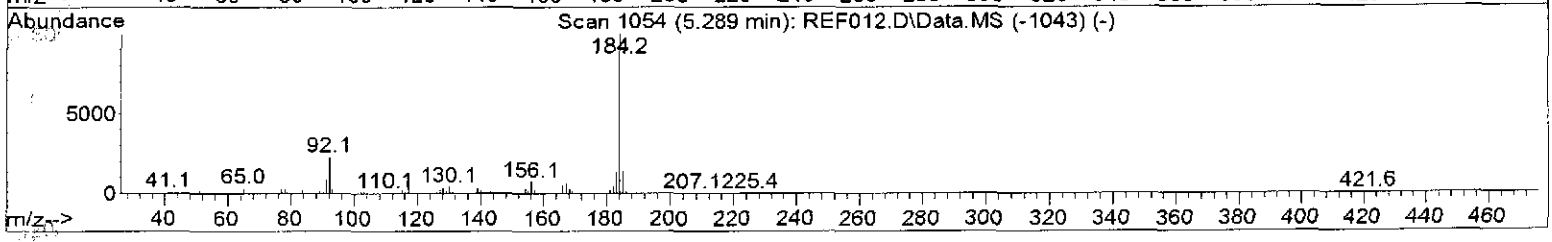
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14K20\RKF111.D
Acq On : 20 Nov 2014 10:03
Sample : DFTF0E0808
Misc : F0
Integrator: RTE
Quant Time: Nov 20 10:13:57 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RKF111.D\Data.MS

(3) Benzidine (T)

5.302min (+0.013) 44.10 ppm

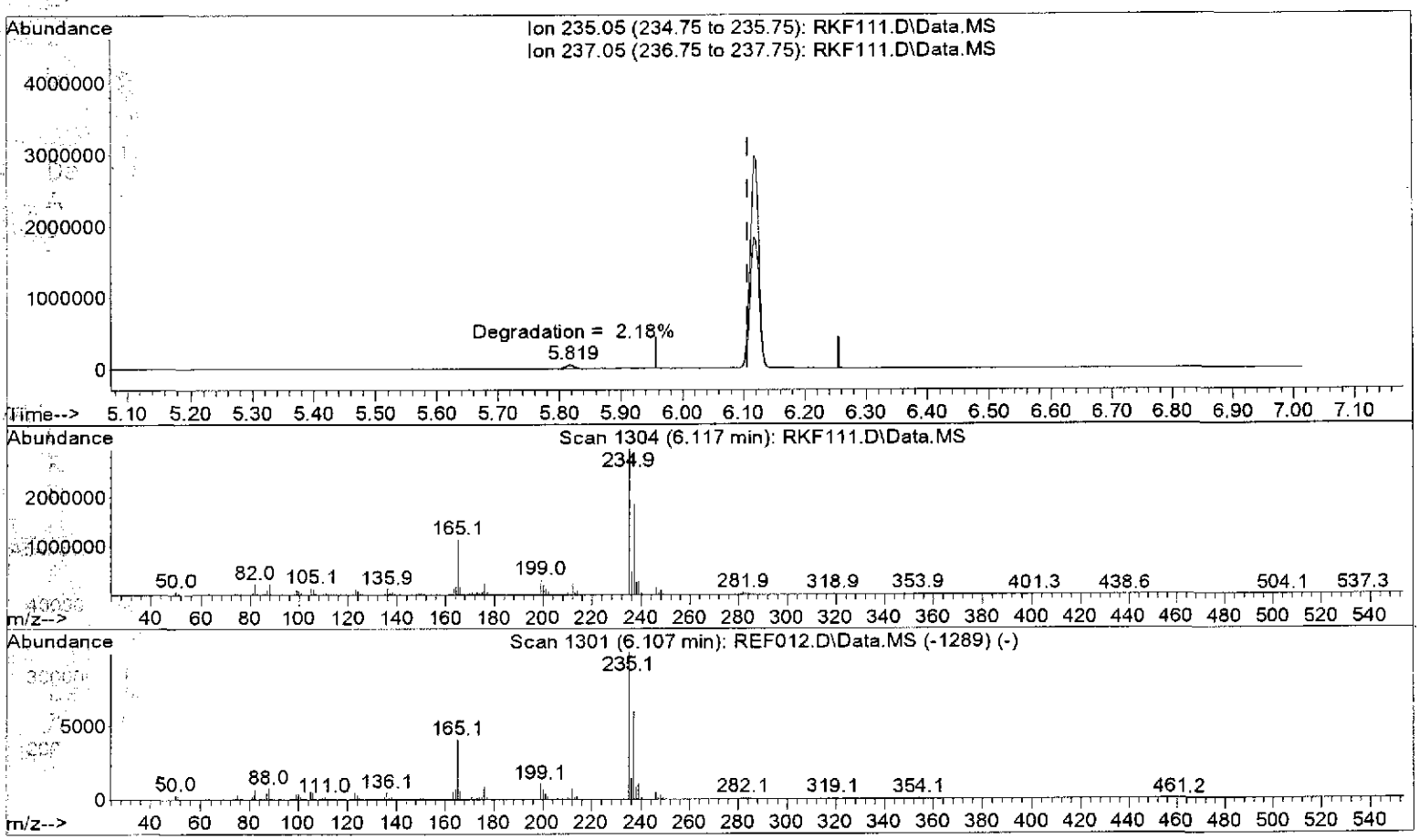
response 7577260

| Ion | Exp% | Act% |
|---|---|---|
| 184.15 | 100 | 100 |
| 92.10 | 21.70 | 16.40 |
| 185.15 | 13.30 | 13.45 |
| 0.00 | 0.00 | 0.00 |

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14K20\RKF111.D
Acq On : 20 Nov 2014 10:03
Sample : DFTF0E0808
Misc : F0
Integrator: RTE
Quant Time: Nov 20 10:13:57 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Fri May 09 13:48:37 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00




TIC: RKF111.D\Data.MS

(6) DDT (T)

6.117min (+0.010) 35.21 ppm

response 2872975

| Ion | Exp% | Act% |
|---|---|---|
| 235.05 | 100 | 100 |
| 237.05 | 63.20 | 63.45 |
| 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 |

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14K20\RKF112.D  Vial: 3
Acq On : 20 Nov 2014 11:32  Operator: KVu
Sample : CSVF0E0808  Inst : DSQ
Misc : F0  Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:01:15 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | Amount | Calc. | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 2000.000 | 2000.000 | 0.0 | 138 | 0.02 |
| 2 | T | Naphthalene | 500.000 | 497.272 | 0.5 | 135 | 0.02 |
| 3 | T | 2-Methylnaphthalene | 500.000 | 492.070 | 1.6 | 133 | 0.03 |
| 4 | T | 1-Methylnaphthalene | 500.000 | 467.461 | 6.5 | 128 | 0.03 |
| 5 | T | Acenaphthylene | 500.000 | 478.056 | 4.4 | 129 | 0.03 |
| 6 | C | Acenaphthene | 500.000 | 482.543 | 3.5 | 134 | 0.03 |
| 7 | T | Dibenzofuran | 500.000 | 433.374 | 13.3 | 119 | 0.03 |
| 8 | T | Fluorene | 500.000 | 424.711 | 15.1 | 118 | 0.03 |
| 9 | T | Phenanthrene | 500.000 | 414.606 | 17.1 | 115 | 0.02 |
| 10 | T | Anthracene | 500.000 | 453.048 | 9.4 | 124 | 0.03 |
| 11 | C | Fluoranthene | 500.000 | 436.283 | 12.7 | 121 | 0.02 |
| 12 | T | Pyrene | 500.000 | 419.507 | 16.1 | 117 | 0.02 |
| 13 | S | Terphenyl-d14 | 500.000 | 570.905 | -14.2 | 158 | 0.02 |
| 14 | T | Benzo(a)anthracene | 500.000 | 530.227 | -6.0 | 136 | 0.02 |
| 15 | T | Chrysene | 500.000 | 524.677 | -4.9 | 143 | 0.02 |
| 16 | T | Benzo(b)fluoranthene | 500.000 | 487.658 | 2.5 | 129 | 0.03 |
| 17 | T | Benzo(k)fluoranthene | 500.000 | 557.079 | -11.4 | 143 | 0.03 |
| 18 | C | Benzo(a)pyrene | 500.000 | 483.344 | 3.3 | 124 | 0.03 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 500.000 | 435.002 | 13.0 | 113 | 0.06 |
| 20 | T | Dibenzo(a,h)anthracene | 500.000 | 405.023 | 19.0 | 107 | 0.06 |
| 21 | T | Benzo(g,h,i)perylene | 500.000 | 468.961 | 6.2 | 121 | 0.07 |

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

# Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14K20\RKF112.D  Vial: 3
Acq On : 20 Nov 2014 11:32  Operator: KVu
Sample : CSVF0E0808  Inst : DSQ
Misc : F0  Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:01:15 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) |
|---|---|---|---|---|---|---|---|
| 1 | I | Phenanthrene-d10 | 1.000 | 1.000 | 0.0 | 138 | 0.02 |
| 2 | T | Naphthalene | 1.369 | 1.361 | 0.6 | 135 | 0.02 |
| 3 | T | 2-Methylnaphthalene | 0.918 | 0.903 | 1.6 | 133 | 0.03 |
| 4 | T | 1-Methylnaphthalene | 0.843 | 0.788 | 6.5 | 128 | 0.03 |
| 5 | T | Acenaphthylene | 1.219 | 1.166 | 4.3 | 129 | 0.03 |
| 6 | C | Acenaphthene | 0.793 | 0.765 | 3.5 | 134 | 0.03 |
| 7 | T | Dibenzofuran | 1.014 | 0.879 | 13.3 | 119 | 0.03 |
| 8 | T | Fluorene | 0.809 | 0.688 | 15.0 | 118 | 0.03 |
| 9 | T | Phenanthrene | 1.037 | 0.860 | 17.1 | 115 | 0.02 |
| 10 | T | Anthracene | 1.042 | 0.944 | 9.4 | 124 | 0.03 |
| 11 | C | Fluoranthene | 0.963 | 0.840 | 12.8 | 121 | 0.02 |
| 12 | T | Pyrene | 1.041 | 0.874 | 16.0 | 117 | 0.02 |
| 13 | S | Terphenyl-d14 | 0.740 | 0.845 | -14.2 | 158 | 0.02 |
| 14 | T | Benzo(a)anthracene | 1.587 | 1.499 | 5.5 | 136 | 0.02 |
| 15 | T | Chrysene | 1.374 | 1.442 | -4.9 | 143 | 0.02 |
| 16 | T | Benzo(b)fluoranthene | 1.355 | 1.322 | 2.4 | 129 | 0.03 |
| 17 | T | Benzo(k)fluoranthene | 1.354 | 1.508 | -11.4 | 143 | 0.03 |
| 18 | C | Benzo(a)pyrene | 1.287 | 1.244 | 3.3 | 124 | 0.03 |
| 19 | T | Indeno(1,2,3-cd)pyrene | 1.567 | 1.363 | 13.0 | 113 | 0.06 |
| 20 | T | Dibenzo(a,h)anthracene | 1.293 | 1.048 | 18.9 | 107 | 0.06 |
| 21 | T | Benzo(g,h,i)perylene | 1.298 | 1.218 | 6.2 | 121 | 0.07 |

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

Quantitation Report (QT Reviewed)

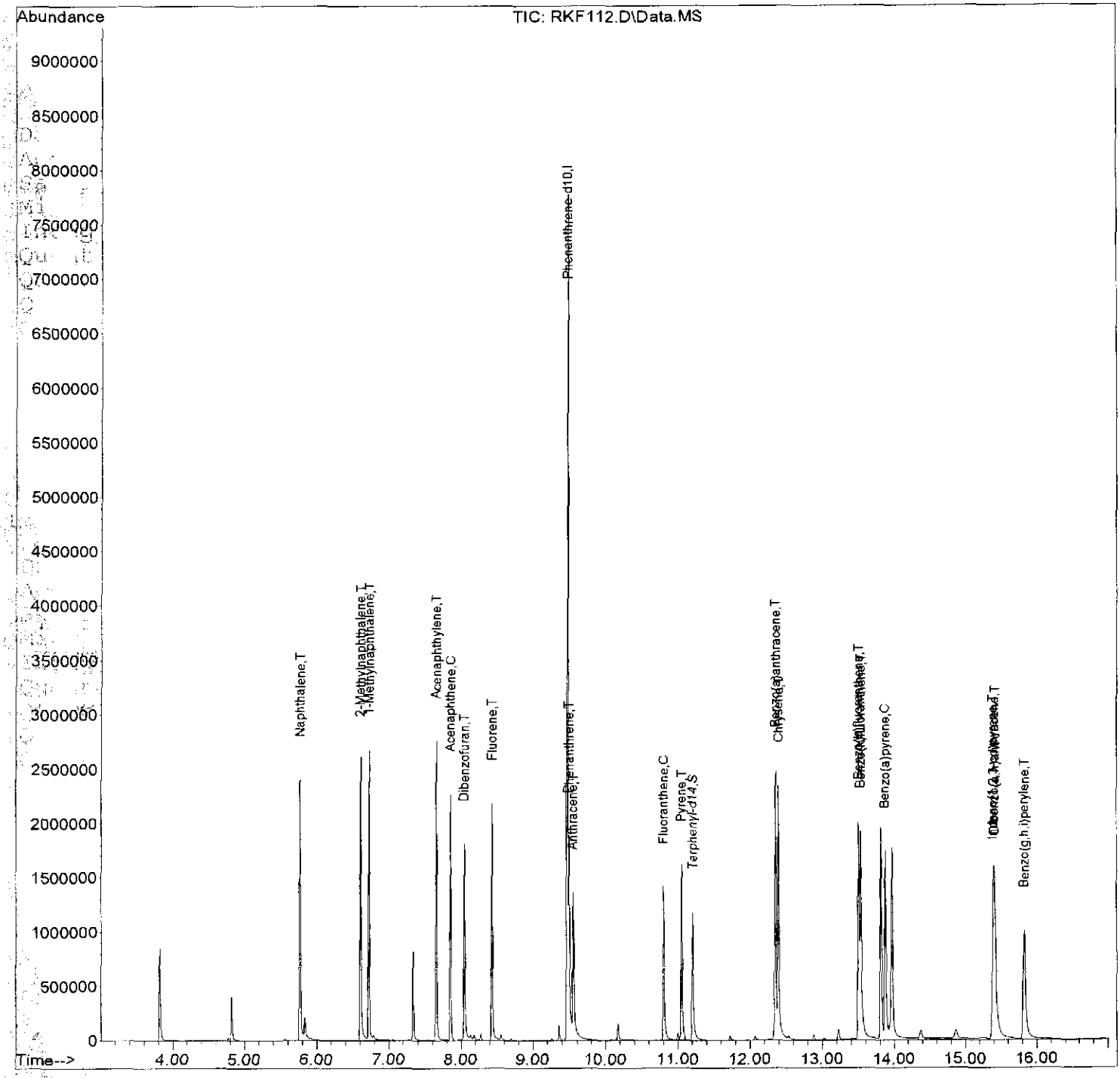
Data File : C:\msdchem\1\DATA\14K20\RKF112.D Vial: 3
Acq On : 20 Nov 2014 11:32 Operator: KVu
Sample : CSVF0E0808 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:01:15 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

| Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| Internal Standards | | | | | |
| 1) Phenanthrene-d10 | 9.468 | 188 | 6894091 | 2000.00 ppb | 0.02 |
| System Monitoring Compounds | | | | | |
| 13) Terphenyl-d14 | 11.206 | 244 | 1455642 | 570.91 ppb | 0.02 |
| Spiked Amount 500.000 | | | Recovery | = 114.18% | |
| Target Compounds | | | | | Qvalue |
| 2) Naphthalene | 5.766 | 128 | 2345996 | 497.27 ppb | 99 |
| 3) 2-Methylnaphthalene | 6.608 | 142 | 1556882 | 492.07 ppb | 97 |
| 4) 1-Methylnaphthalene | 6.724 | 142 | 1358258 | 467.46 ppb | 99 |
| 5) Acenaphthylene | 7.657 | 152 | 2009164 | 478.06 ppb | 99 |
| 6) Acenaphthene | 7.852 | 153 | 1319029 | 482.54 ppb | 98 |
| 7) Dibenzofuran | 8.046 | 168 | 1514460 | 433.37 ppb | 99 |
| 8) Fluorene | 8.430 | 166 | 1184948 | 424.71 ppb | 99 |
| 9) Phenanthrene | 9.495 | 178 | 1482118 | 414.61 ppb | 97 |
| 10) Anthracene | 9.554 | 178 | 1627019 | 453.05 ppb | 97 |
| 11) Fluoranthene | 10.802 | 202 | 1447849 | 436.28 ppb | 89 |
| 12) Pyrene | 11.053 | 202 | 1505723 | 419.51 ppb | 89 |
| 14) Benzo(a)anthracene | 12.356 | 228 | 2583641 | 530.23 ppb | 76 |
| 15) Chrysene | 12.395 | 228 | 2484505 | 524.68 ppb | 85 |
| 16) Benzo(b)fluoranthene | 13.502 | 252 | 2278182 | 487.66 ppb | 85 |
| 17) Benzo(k)fluoranthene | 13.531 | 252 | 2599189 | 557.08 ppb | 79 |
| 18) Benzo(a)pyrene | 13.877 | 252 | 2144869 | 483.34 ppb | 85 |
| 19) Indeno(1,2,3-cd)pyrene | 15.392 | 276 | 2349548 | 435.00 ppb | 71 |
| 20) Dibenzo(a,h)anthracene | 15.411 | 278 | 1805482 | 405.02 ppb | 78 |
| 21) Benzo(g,h,i)perylene | 15.829 | 276 | 2098711 | 468.96 ppb | 74 |

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14K20\RKF112.D
Vial: 3
Acq On : 20 Nov 2014 11:32
Operator: KVu
Sample : CSVF0E0808
Inst : DSQ
Misc : F0
Multiplr: 1.00
Integrator: RTE
Quant Time: Nov 20 12:01:15 2014
Quant Results File: SVF0E08.RES
Quant Method : C:\msdchem\1\METHODS\SVF0E08.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu May 08 14:37:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 5 ☑ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #AF0-002

Method File: SVF0E08 Tune File: LOWSIM Start Date/Time: 5/8/14 11:44 End Date/Time: 5/8/14 15:36

ANALYTICAL BATCH: SVF0E08 2

| Preparative Batch | Data File Name | Run ID | DF | Matrix S | Matrix W | Notes |
|---|---|---|---|---|---|---|
| NA | REF 011 | IBF0E0801 | 1 | | | |
| | 12 | DFTF0E0801 | | | | |
| | 13 | SVF0E08 1 | | | | 1000ppb |
| | 14 | 2 | | | | 500 |
| | 15 | 3 | | | | 100 |
| | 16 | 4 | | | | 80 |
| | 17 | 5 | | | | 40 |
| | 18 | 6 | | | | 20 |
| | 19 | ISVF0E081 | | | | ICV |
| SVD013LW | 20 | LOQ -11 | 1 | | X | |
| | 21 | LOD -11 | | | | |
| | 22 | SVD013WB | | | | |
| | 23 | D14K-01 | 2 | | | Cyanocobalamin 8310 |
| | 24 | 02 | 2 | | | |
| | 25 | 03 | 2 | | | |
| | | KV 5/8/14 | | | | |

| Instrument No: | F0 |
|---|---|
| INITIAL CALIBRATION REFERENCE | |
| Date | 5/8/14 |
| ICAL ID | SVF0E08 |

| Standards | | |
|---|---|---|
| Name | ID | Conc. (mg/L) |
| DFTPP | SS2C-11-15-01 | 50 |
| INT. STD. | SS2B-10-37-03 | 2000 |
| ICV | SS2C-11-18-02 | 0.5 |
| DCC | SS2C-11-18-01 | 0.25-1 |
| BENZIDINE | 01 | |
| APP 9 | KV 5/8/14 | |
| APP 9 ADD | | |
| | | |
| | | |

| Solvent | ID |
|---|---|
| $CH_2Cl_2$ | |

| DATA FILE | 14E08 |
|---|---|

| Electronic Data Archival | |
|---|---|
| Location | Date |
| HPCHEM_SVOA/TOF0 | |

Comments:

Analyzed By: KV

Date Disposed: 5/9/14

Disposed By: KV

This page is checked during data review.

EMAX LABORATORIES, INC.

# ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 5 ☐ EMAX-8270D Rev. No. 1 ☑ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AF0-003

Method File: SVF0E08 Tune File: LowSim Start Date/Time: 11/20/14 10:03 End Date/Time: 11/20/14 13:31

ANALYTICAL BATCH: CSVF0F08

| Preparative Batch | Data File Name | Run ID | DF | Matrix S | Matrix W | Notes |
|---|---|---|---|---|---|---|
| | RKF110 | IBF0E0808 | | | | |
| | 111 | DFTF0E0808 | | | | |
| | 112 | CSVF0E0808 | | | | |
| SVK020W | 113 | SVK020WL | 1 | | x | |
| | 114 | WC | | | | |
| | 115 | WB | | | | |
| | 116 | 14K089-02 | | | | |
| | 117 | 03 | | | | |
| | | VV 11/20/14 | | | | |

| Instrument No: | F0 |
|---|---|
| INITIAL CALIBRATION REFERENCE | |
| Date | 5/8/14 |
| ICAL ID | SVF0E08 |
| Standards | |
| Name | ID | Conc. (mg/L) |
| DFTPP | SS2C-11-25-03 | 50 |
| INT. STD. | SS2B-10-47-02 | 2000 |
| ICV | | |
| DCC | SS2C-11-28-01 | 0.5 |
| BENZIDINE | | |
| APP 9 | | |
| APP 9 ADD | | |
| | | |
| | | |
| Solvent | ID | |
| $CH_2Cl_2$ | 54184 | |
| DATA FILE | 14K20 | |
| Electronic Data Archival | | |
| Location | Date | |
| HPCHEM_SVOA/TOF0 | | |

Micropipette ID: ☑ PO97A-02
☐ PO97A-03
☐ PO00-01

Comments: Syringe ID: 499766-1

Analyzed By: VV
Date Disposed: 11/20/14
Disposed By: VV

This page is checked during data review.

# EXTRACTION LOGS

EMAX LABORATORIES, INC.

# EXTRACTION LOG
*for*
# SEMIVOLATILES

| SOP | Rev. # |
|---|---|
| ☑ EMAX-3520 | 5 |
| ☐ EMAX-3540 | 2 |
| ☐ EMAX-3546 | 0 |
| ☐ EMAX-3550 | 4 |
| ☐ EMAX-3580 | 2 |
| ☐ EMAX-625 | 1 |

**Note:** *For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.*

**Comments:**

Book #: ESV-083
Preparation Batch: SVK020W
Matrix: water
Micropipette ID: PE 00-03 (1000 µL)
Micropipette ID: PE97C - 03 (100 µL)

| Standards | ID | Amount Added (ml) |
|---|---|---|
| Surrogate | SS2A-06-348 AGG 11/18/14 | ~~0.4~~ 0.01 |
| LCS/MS SIM ultra low | SS2A-06-347 | 0.25 |
| LCS/MS | | |
| LCS/MS | | |
| LCS/MS | | |

| Reagent | Lot# / ID |
|---|---|
| $CH_2Cl_2$ | 54184 |
| $Na_2SO_4$ | SWB-002-63-06 |
| $H_2SO_4$ | |
| NaOH | SP1B-06-77-04 |
| Silica Sand | |
| Silica Gel | |
| Reagent Water | SW1A-005-~~10-05~~ 06-22 AGG 11/17/14 |
| Residual Chlorine Strip | 42422 |
| pH Strip | HC421273 |
| Filter Paper | QC 87322 B |

| Lab Sample ID | Sonicator # | Cell # | Concentrator # |
|---|---|---|---|
| SVK020WB | | | 1 |
| WL | | | 1 |
| WC | | | 1 |
| KD89-02 | | | 1 |
| -03 | | | 1 |

| TUNING | |
|---|---|
| Sonicator # | Reading |
| | |
| | |
| | |
| | |

| Concentrator | Water Bath Temperature Setting (°C) | Thermometer Reading (°C) |
|---|---|---|
| 1 | 35 | 35 |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |

Thermometer ID = SVOC-T1 11/17/14

Prepared By: [illegible] Witnessed By: AGG
Standard Added By: [illegible] Checked By: ML
Extract Received By: KV 11/18/14 Location: SE03-05
Disposed By: Disposed On:

FileID: SVK020W

EMAX LABORATORIES, INC.

# EXTRACTION LOG FOR SEMIVOLATILES

| PrepBatchID | LabSampleID | Aliquot | Unit | DateTime | Ve(ml) | ExpAmt | ExpVe(ml) | PrepFctr | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 14SVK020W01 | SVK020WB | 1000 | ml | 11/17/14 14:13 | 1 | 1000 | 1 | 1 | |
| 14SVK020W02 | SVK020WL | 1000 | ml | 11/17/14 14:13 | 1 | 1000 | 1 | 1 | SIM ULTRA LOW |
| 14SVK020W03 | SVK020WC | 1000 | ml | 11/17/14 14:13 | 1 | 1000 | 1 | 1 | SIM ULTRA LOW |
| 14SVK020W04 | K089-02 | 950 | ml | 11/17/14 14:13 | 1 | 1000 | 1 | 1.05 | yellow |
| 14SVK020W05 | K089-03 | 910 | ml | 11/17/14 14:13 | 1 | 1000 | 1 | 1.1 | light yellow |

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe

☑ Extraction Started @ 11/17/14 10:00 ☐ pHAdj(≤2) @

☑ Extraction Ended @ 11/18/14 5:15 ☑ pHAdj(≥11) @ 11/17/14 15:15

Prepared By: JMuert

Checked By: ML

Date 11/18/14

Comments: Vol entered after extraction started, pH 6, Cl not detected in all samples.

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 14K089

CASE NARRATIVE

Client : BATTELLE

Project : RED HILL PHASE 1B

SDG : 14K089

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of three (3) water samples were received on 11/13/14 for TPH Gasoline analysis, Method SW5030B/8015B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 and project SAP August 2014.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for VG39K07L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogate was added on QC and field samples. Surrogate recoveries were within project QC limits. Refer to sample result forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : BATTELLE
Project : RED HILL PHASE 1B

SDG NO. : 14K089
Instrument ID : GCT039

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | VG39K07B | 1 | NA | 11/13/1414:03 | 11/13/1414:03 | EK12044A | EK12036A | VG39K07 | Method Blank |
| LCS1W | VG39K07L | 1 | NA | 11/13/1414:50 | 11/13/1414:50 | EK12045A | EK12036A | VG39K07 | Lab Control Sample (LCS) |
| LCD1W | VG39K07C | 1 | NA | 11/13/1415:28 | 11/13/1415:28 | EK12046A | EK12036A | VG39K07 | LCS Duplicate |
| TRIP111214 | K089-01 | 1 | NA | 11/13/1416:53 | 11/13/1416:53 | EK12048A | EK12047A | VG39K07 | Field Sample |
| HW111214-01 | K089-02 | 1 | NA | 11/13/1417:31 | 11/13/1417:31 | EK12049A | EK12047A | VG39K07 | Field Sample |
| HW111214-02 | K089-03 | 1 | NA | 11/13/1418:10 | 11/13/1418:10 | EK12050A | EK12047A | VG39K07 | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 11/12/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/13/14 16:53 |
| Sample ID: | TRIP111214 | Date Analyzed: | 11/13/14 16:53 |
| Lab Samp ID: | K089-01 | Dilution Factor: | 1 |
| Lab File ID: | EK12048A | Matrix : | WATER |
| Ext Btch ID: | VG39K07 | % Moisture : | NA |
| Calib. Ref.: | EK12047A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0344 | 0.04000 | 85.9 | 70-130 |

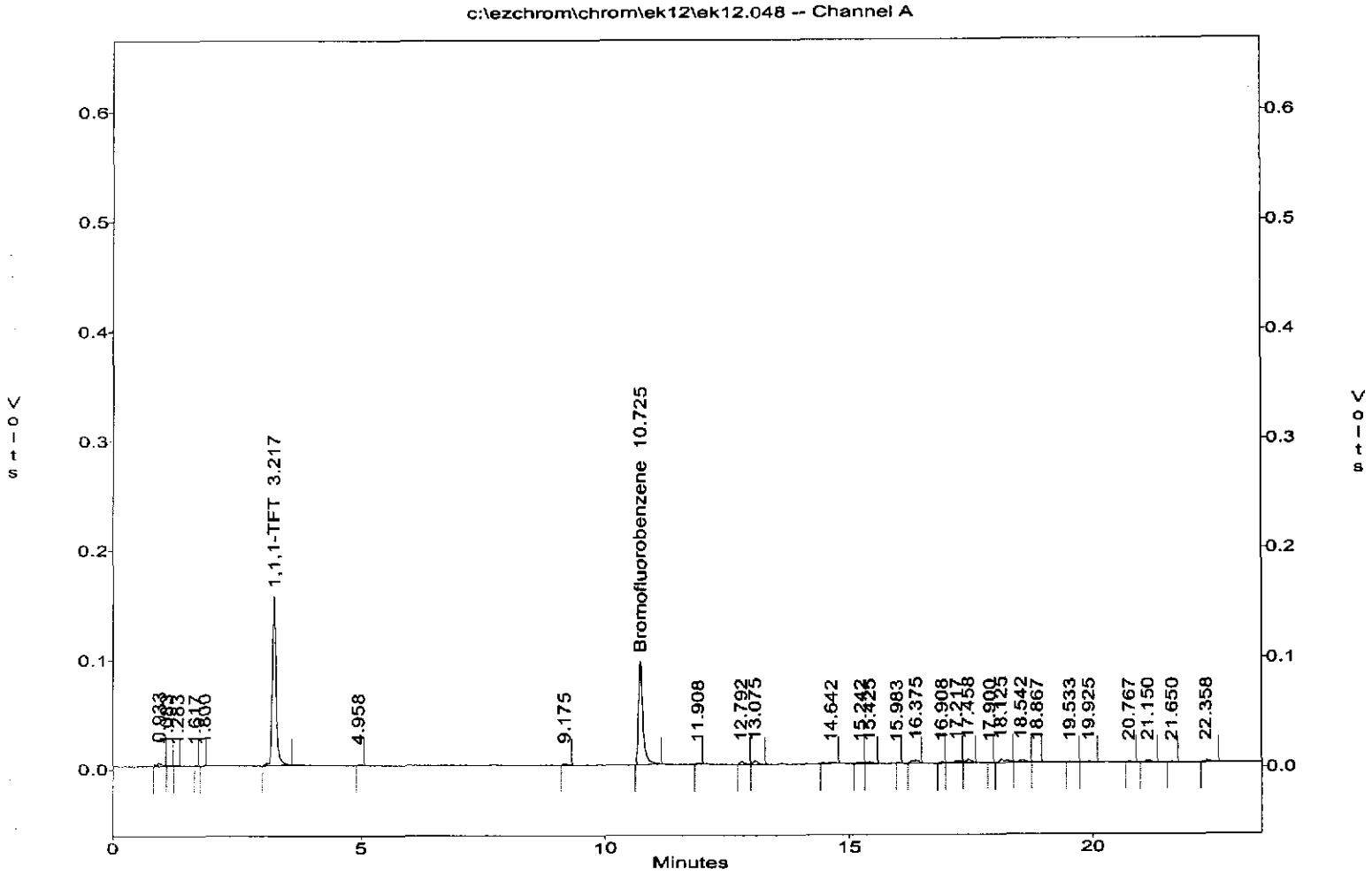
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ek12\ek12.048
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : 14K089-01 5.0ML W
Acquired : Nov 13, 2014 16:53:00
Printed : Nov 14, 2014 09:46:05
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.217 | 827642.0 | 21400.0 | 38.67 |
| 9 | Bromofluorobenzene | 10.725 | 575014.0 | 16725.9 | 34.38 |
| G1 | GASOLINE(TOTAL) | | 311220.0 | 28261.9 | 11.01 |
| G2 | GRO(C6-C10) | | 35755.0 | 21355.4 | 1.67 |
| G3 | GRO(2MP-124TMB) | | 37676.0 | 21297.0 | 1.77 |
| G4 | GRO(C5-C12) | | 245790.0 | 27928.9 | 8.80 |
| G5 | GRO(C6-C12) | | 240605.0 | 27890.2 | 8.63 |
| G6 | GRO(C5-C10) | | 40940.0 | 21396.8 | 1.91 |



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 11/12/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/13/14 17:31 |
| Sample ID: | HW111214-01 | Date Analyzed: | 11/13/14 17:31 |
| Lab Samp ID: | K089-02 | Dilution Factor: | 1 |
| Lab File ID: | EK12049A | Matrix : | WATER |
| Ext Btch ID: | VG39K07 | % Moisture : | NA |
| Calib. Ref.: | EK12047A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0310 | 0.04000 | 77.6 | 70-130 |

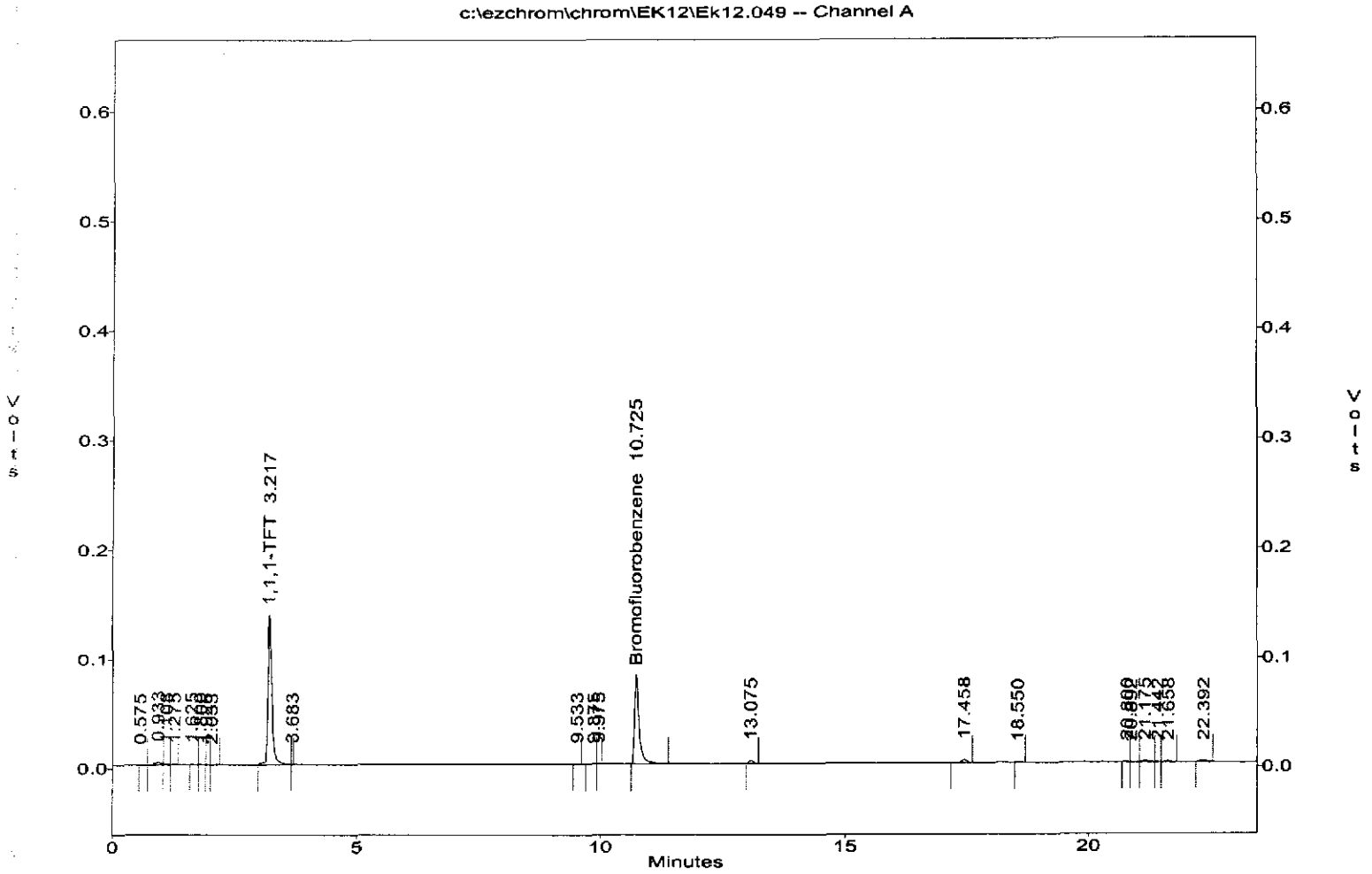
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\Ek12.049
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14K089-02 5.0ML W
Acquired : Nov 13, 2014 17:31:50
Printed : Nov 13, 2014 17:55:23
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 9 | 1,1,1-TFT | 3.217 | 751497.0 | 21400.0 | 35.12 |
| 14 | Bromofluorobenzene | 10.725 | 518860.0 | 16725.9 | 31.02 |
| G1 | GASOLINE(TOTAL) | | 113648.0 | 28261.9 | 4.02 |
| G2 | GRO(C6-C10) | | 19290.0 | 21355.4 | 0.90 |
| G3 | GRO(2MP-124TMB) | | 19290.0 | 21297.0 | 0.91 |
| G4 | GRO(C5-C12) | | 65902.0 | 27928.9 | 2.36 |
| G5 | GRO(C6-C12) | | 61309.0 | 27890.2 | 2.20 |
| G6 | GRO(C5-C10) | | 23883.0 | 21396.8 | 1.12 |



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 11/12/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/13/14 18:10 |
| Sample ID: | HW111214-02 | Date Analyzed: | 11/13/14 18:10 |
| Lab Samp ID: | K089-03 | Dilution Factor: | 1 |
| Lab File ID: | EK12050A | Matrix | : WATER |
| Ext Btch ID: | VG39K07 | % Moisture | : NA |
| Calib. Ref.: | EK12047A | Instrument ID | : GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0306 | 0.04000 | 76.6 | 70-130 |

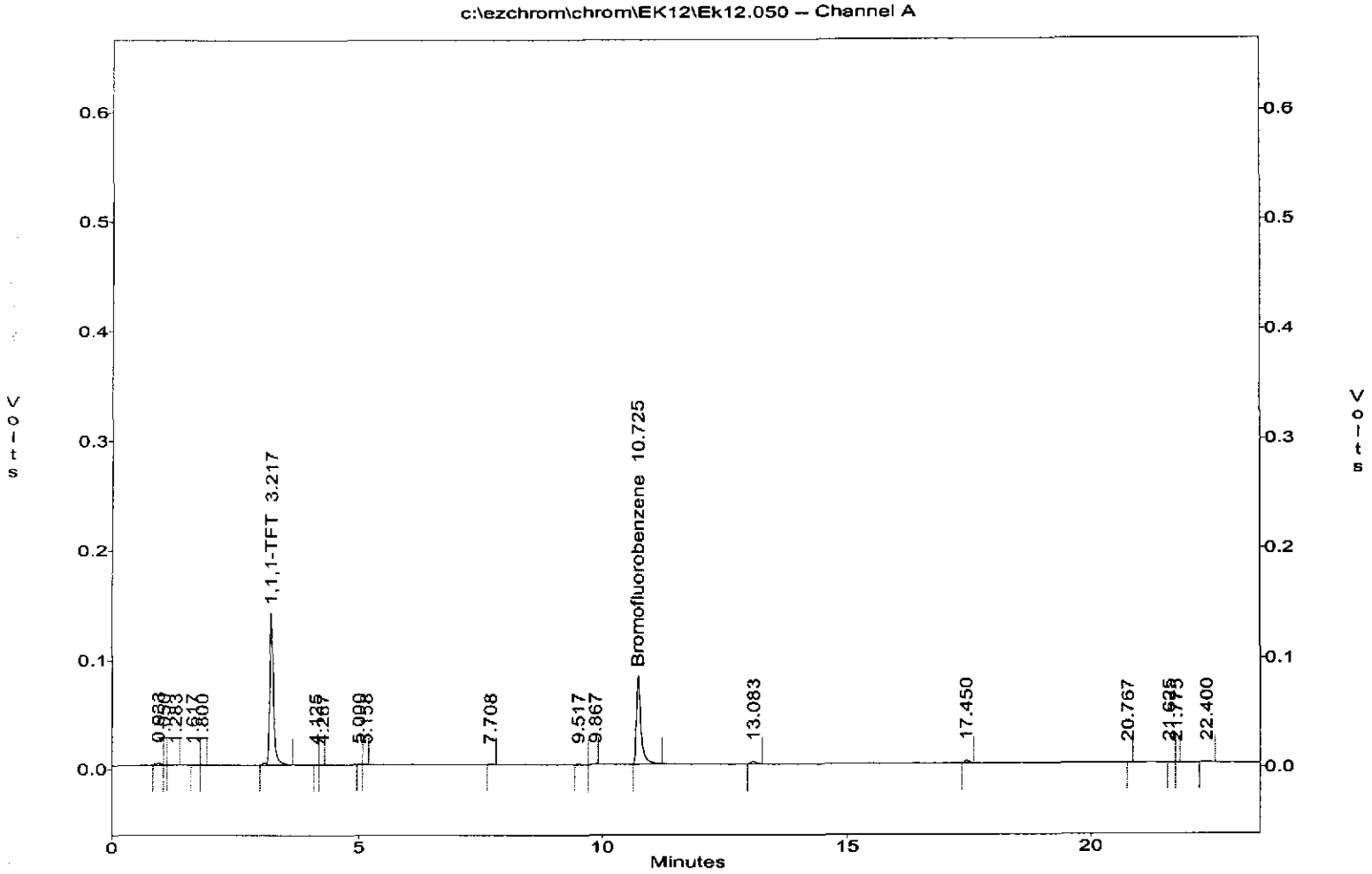
| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\Ek12.050
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : 14K089-03 5.0ML W
Acquired : Nov 13, 2014 18:10:40
Printed : Nov 13, 2014 18:34:12
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.217 | 753177.0 | 21400.0 | 35.20 |
| 14 | Bromofluorobenzene | 10.725 | 512535.0 | 16725.9 | 30.64 |
| G1 | GASOLINE(TOTAL) | | 81776.0 | 28261.9 | 2.89 |
| G2 | GRO(C6-C10) | | 21098.0 | 21355.4 | 0.99 |
| G3 | GRO(2MP-124TMB) | | 24368.0 | 21297.0 | 1.14 |
| G4 | GRO(C5-C12) | | 66202.0 | 27928.9 | 2.37 |
| G5 | GRO(C6-C12) | | 58598.0 | 27890.2 | 2.10 |
| G6 | GRO(C5-C10) | | 28702.0 | 21396.8 | 1.34 |



# QC SUMMARIES

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/13/14 14:03 |
| Sample ID: | MBLK1W | Date Analyzed: | 11/13/14 14:03 |
| Lab Samp ID: | VG39KD7B | Dilution Factor: | 1 |
| Lab File ID: | EK12044A | Matrix : | WATER |
| Ext Btch ID: | VG39K07 | % Moisture : | NA |
| Calib. Ref.: | EK12036A | Instrument ID : | GCT039 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| GRO | ND | 0.050 | 0.010 | 0.020 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOFLUOROBENZENE | 0.0336 | 0.04000 | 84.1 | 70-130 |

| Parameter | H-C Range |
|---|---|
| GRO | C6-C10 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14K089
METHOD: SW5030B/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | VG39K07B | VG39K07L | VG39K07C | | |
| LAB FILE ID: | EK12044A | EK12045A | EK12046A | | |
| DATE EXTRACTED: | 11/13/1414:03 | 11/13/1414:50 | 11/13/1415:28 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 11/13/1414:03 | 11/13/1414:50 | 11/13/1415:28 | DATE RECEIVED: | 11/13/14 |
| PREP. BATCH: | VG39K07 | VG39K07 | VG39K07 | | |
| CALIB. REF: | EK12036A | EK12036A | EK12036A | | |

ACCESSION:

| PARAMETER | BLNK RSLT (mg/L) | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO | ND | 0.500 | 0.421 | 84 | 0.500 | 0.498 | 100 | 17 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 0.0400 | 0.0354 | 88 | 0.0400 | 0.0397 | 99 | 70-130 |

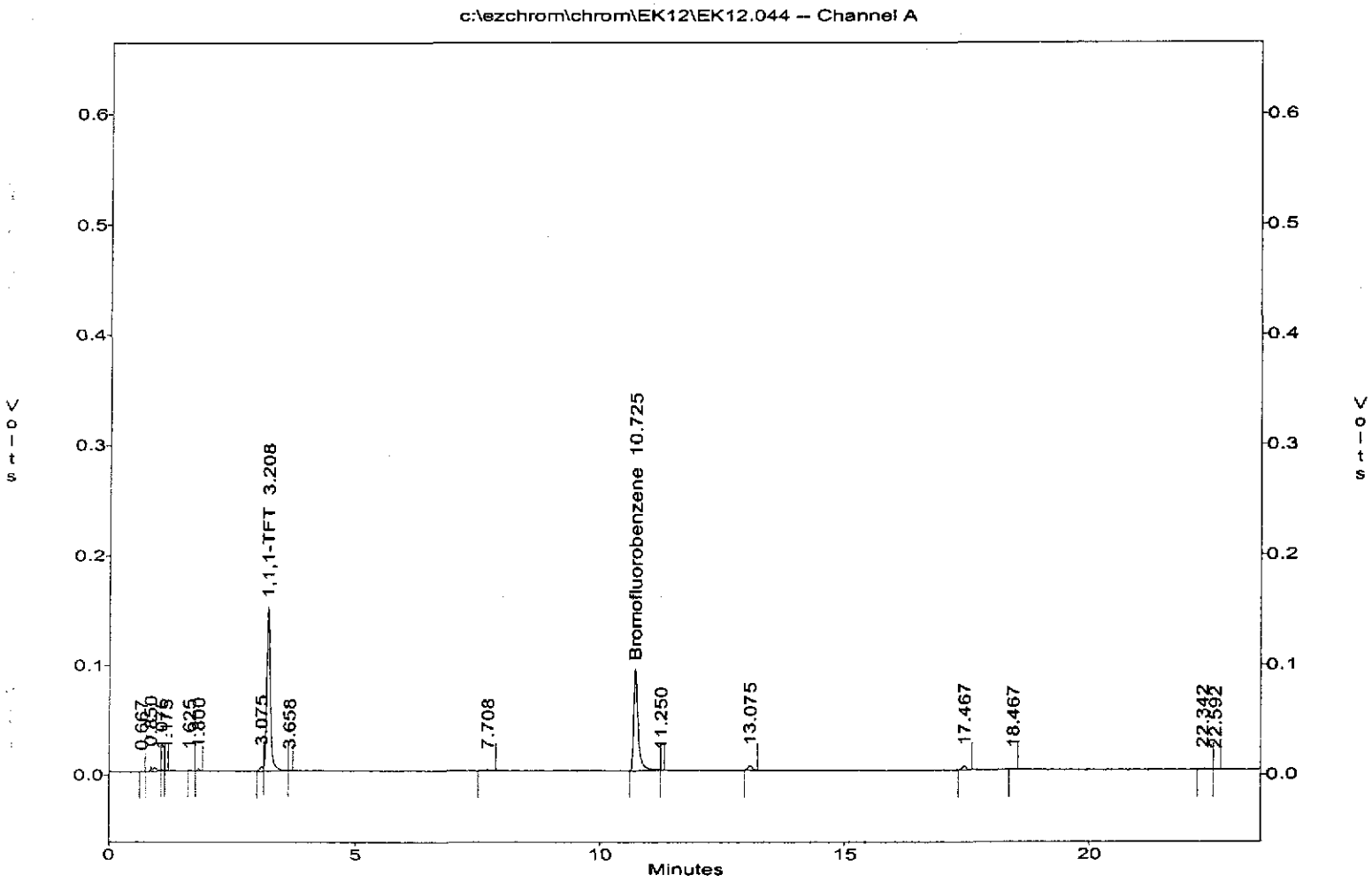
# QC DATA

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\EK12.044
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39K07B 5.0ML W
Acquired : Nov 13, 2014 14:03:42
Printed : Nov 13, 2014 16:26:12
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 8 | 1,1,1-TFT | 3.208 | 797455.0 | 21400.0 | 37.26 |
| 11 | Bromofluorobenzene | 10.725 | 562594.0 | 16725.9 | 33.64 |
| G1 | GASOLINE(TOTAL) | | 112906.0 | 28261.9 | 3.99 |
| G2 | GRO(C6-C10) | | 38285.0 | 21355.4 | 1.79 |
| G3 | GRO(2MP-124TMB) | | 38285.0 | 21297.0 | 1.80 |
| G4 | GRO(C5-C12) | | 95900.0 | 27928.9 | 3.43 |
| G5 | GRO(C6-C12) | | 94833.0 | 27890.2 | 3.40 |
| G6 | GRO(C5-C10) | | 39352.0 | 21396.8 | 1.84 |

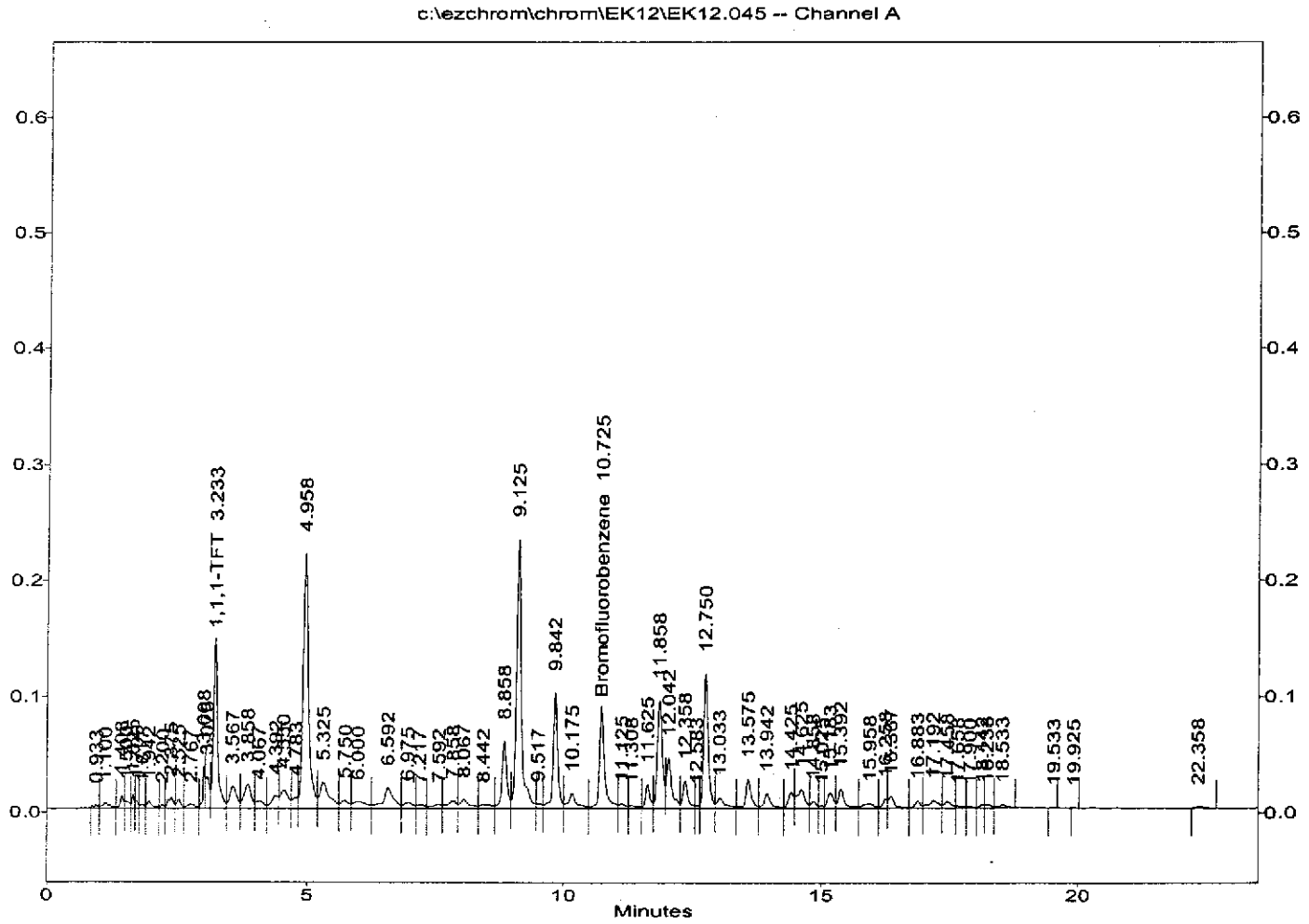


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\EK12.045
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39K07L 5.0ML W
Acquired : Nov 13, 2014 14:50:09
Printed : Nov 13, 2014 16:26:15
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 15 | 1,1,1-TFT | 3.233 | 843405.0 | 21400.0 | 39.41 |
| 38 | Bromofluorobenzene | 10.725 | 591679.0 | 16725.9 | 35.38 |
| G1 | GASOLINE(TOTAL) | | 10443746.0 | 28261.9 | 369.53 |
| G2 | GRO(C6-C10) | | 8997571.0 | 21355.4 | 421.32 ✓ |
| G3 | GRO(2MP-124TMB) | | 8978945.0 | 21297.0 | 421.61 |
| G4 | GRO(C5-C12) | | 10380862.0 | 27928.9 | 371.69 |
| G5 | GRO(C6-C12) | | 10301308.0 | 27890.2 | 369.35 |
| G6 | GRO(C5-C10) | | 9077125.0 | 21396.8 | 424.23 |



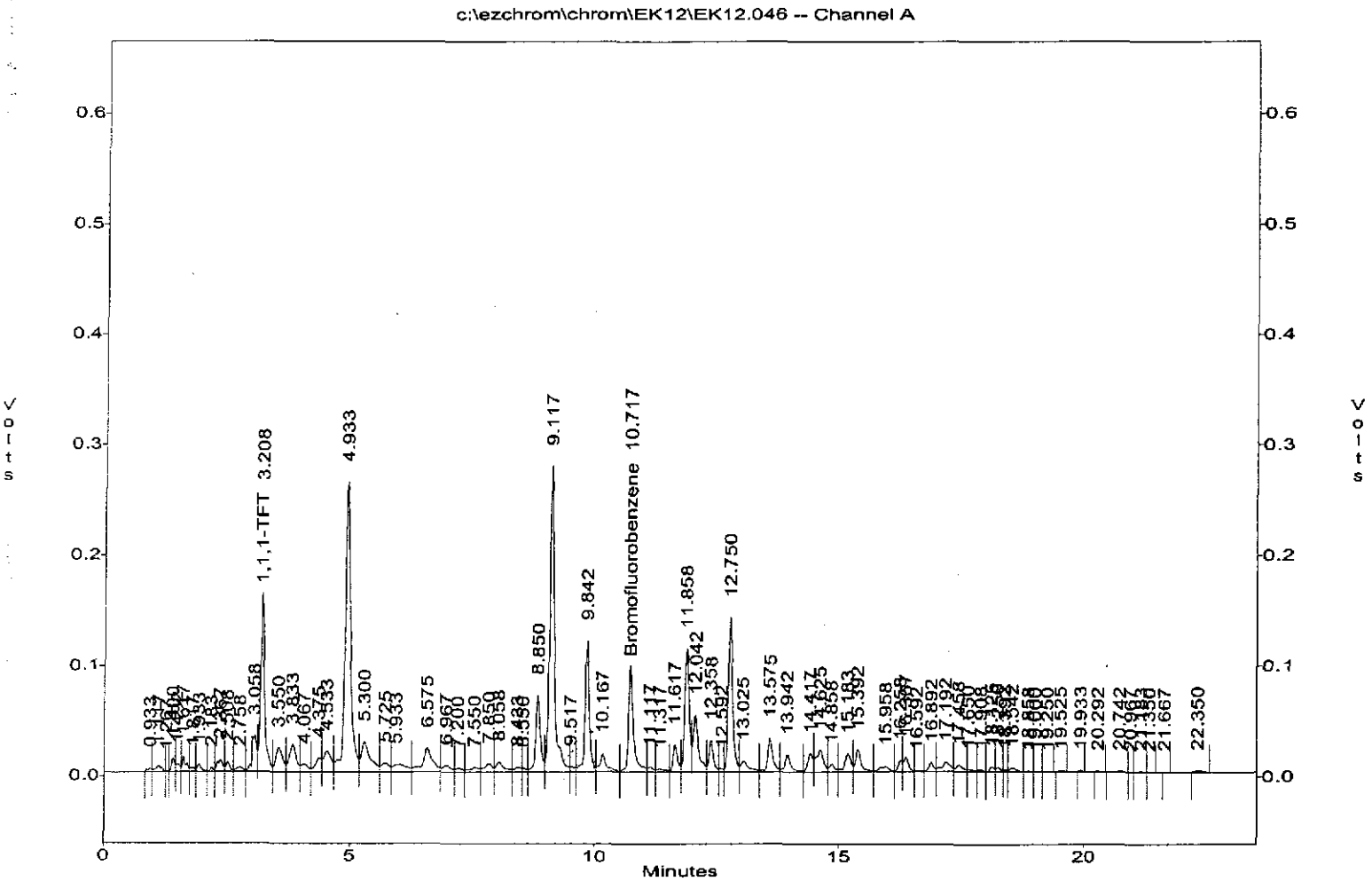

1015

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\EK12.046
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39K07C 5.0ML W
Acquired : Nov 13, 2014 15:28:52
Printed : Nov 13, 2014 16:26:18
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 14 | 1,1,1-TFT | 3.208 | 942845.0 | 21400.0 | 44.06 |
| 37 | Bromofluorobenzene | 10.717 | 664748.0 | 16725.9 | 39.74 |
| G1 | GASOLINE(TOTAL) | | 12574294.0 | 28261.9 | 444.92 |
| G2 | GRO(C6-C10) | | 10645048.0 | 21355.4 | 498.47 |
| G3 | GRO(2MP-124TMB) | | 10701228.0 | 21297.0 | 502.48 |
| G4 | GRO(C5-C12) | | 12458057.0 | 27928.9 | 446.06 |
| G5 | GRO(C6-C12) | | 12285088.0 | 27890.2 | 440.48 |
| G6 | GRO(C5-C10) | | 10818017.0 | 21396.8 | 505.59 |



# INITIAL CALIBRATIONS

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EE02002A 05/02/14 11:39
LFID & Datetime: EE02003A 05/02/14 12:18
LFID & Datetime: EE02004A 05/02/14 12:57
LFID & Datetime: EE02005A 05/02/14 13:36
LFID & Datetime: EE02006A 05/02/14 14:15
LFID & Datetime: EE02007A 05/02/14 14:54
CONC UNIT: ppb

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 1.00X | 2.50X | 5.00X | 25.00X | 50.00X | 75.00X | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | 20.00 | 27801 | 27719 | 28723 | 28893 | 27835 | 28600 | 28261.9 | 1.9 |
| GRO(C6-C10) | 20.00 | 21440 | 21614 | 22072 | 21470 | 20441 | 21095 | 21355.4 | 2.6 |
| GRO(2MP-124TMB) | 20.00 | 21440 | 21614 | 21962 | 21379 | 20360 | 21028 | 21297.0 | 2.6 |
| GRO(C5-C12) | 20.00 | 27412 | 27451 | 28534 | 28563 | 27415 | 28199 | 27928.9 | 2.0 |
| GRO(C6-C12) | 20.00 | 27293 | 27392 | 28506 | 28556 | 27411 | 28184 | 27890.2 | 2.1 |
| GRO(C5-C10) | 20.00 | 21558 | 21673 | 22100 | 21481 | 20451 | 21117 | 21396.8 | 2.6 |

| SURROGATE | X | 1.00X | 2.00X | 3.00X | 4.00X | 5.00X | 8.00X | MEAN | %RSD |
|---|---|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 10.00 | 14346 | 14383 | 15057 | 18957 | 18920 | 18692 | 16725.9 | 14.0 |
| 1,1,1-Trifluorotoluene | 10.00 | 21580 | 20507 | 21018 | 21584 | 21776 | 21933 | 21400.0 | 2.5 |

VG39E02.MET

AA 05/05/14

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EE02002A 05/02/14 11:39
LFID & Datetime: EE02003A 05/02/14 12:18
LFID & Datetime: EE02004A 05/02/14 12:57
LFID & Datetime: EE02005A 05/02/14 13:36
LFID & Datetime: EE02006A 05/02/14 14:15
LFID & Datetime: EE02007A 05/02/14 14:54

| COMPOUND | RT OF STANDARDS (MIN) 1.0X | 2.5X | 5.0X | 25.0X | 50.0X | 75.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C6-C10) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(2MP-124TMB) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C5-C12) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C6-C12) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| GRO(C5-C10) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| SURROGATE | 1.0X | 2.0X | 3.0X | 4.0X | 5.0X | 8.0X | RT | FROM | TO | WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 10.733 | 10.725 | 10.725 | 10.725 | 10.725 | 10.717 | 10.725 | 10.682 | 10.768 | 0.043 |
| 1,1,1-Trifluorotoluene | 3.217 | 3.217 | 3.217 | 3.208 | 3.208 | 3.208 | 3.212 | 3.088 | 3.336 | 0.124 |

VG39E02.MET

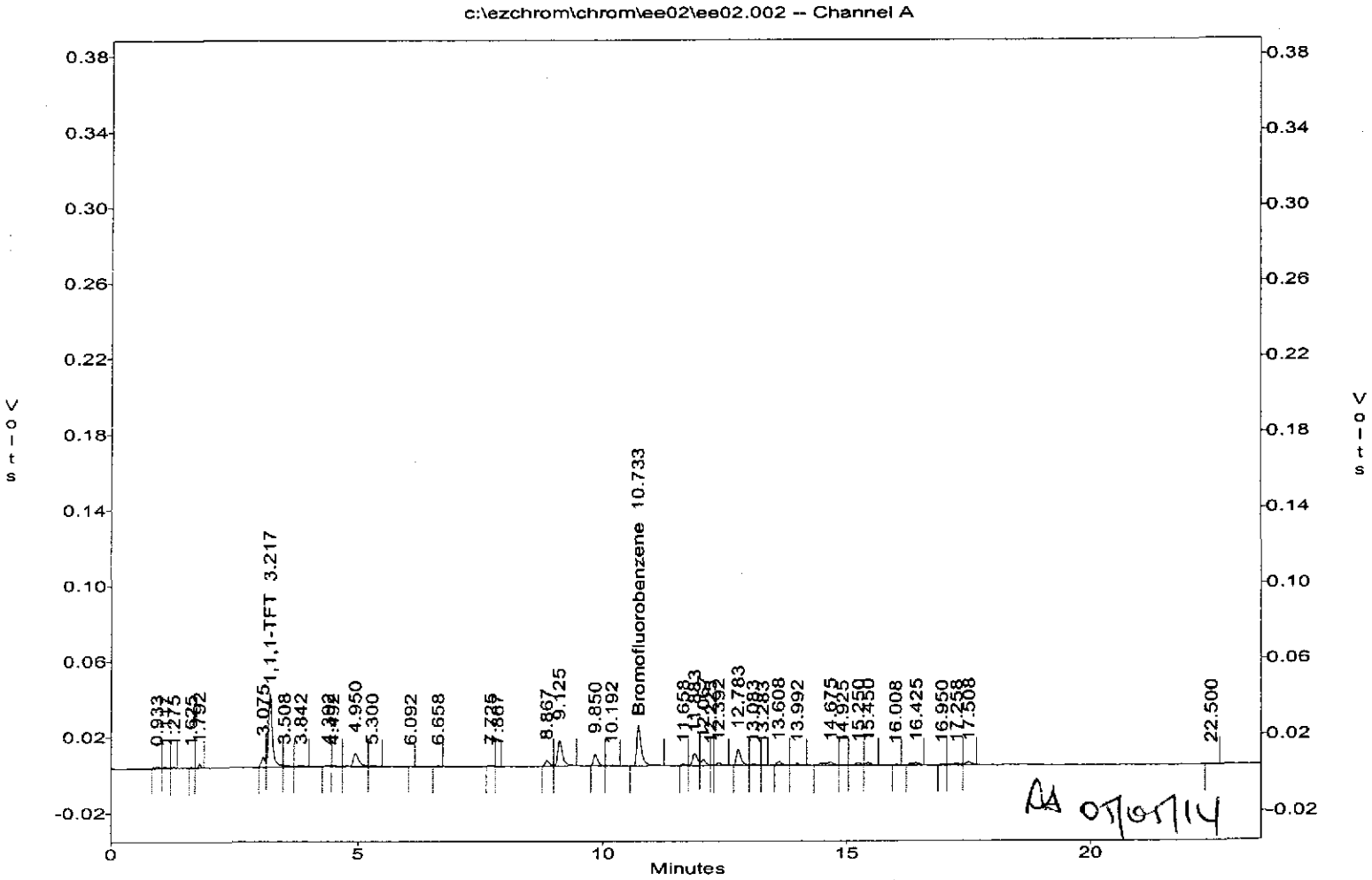
At
05/05/12

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.002
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0201 20/10
Acquired : May 02, 2014 11:39:55
Printed : May 05, 2014 09:31:15
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.217 | 215802.0 ✓ | 21400.0 | 10.00 |
| 22 | Bromofluorobenzene | 10.733 | 143459.0 ✓ | 16725.9 | 10.00 |
| G1 | GASOLINE(TOTAL) | | 556018.0 ✓ | 28261.9 | 20.00 |
| G2 | GRO(C6-C10) | | 428798.0 ✓ | 21355.4 | 20.00 |
| G3 | GRO(2MP-124TMB) | | 428798.0 ✓ | 21297.0 | 20.00 |
| G4 | GRO(C5-C12) | | 548233.0 ✓ | 27928.9 | 20.00 |
| G5 | GRO(C6-C12) | | 545864.0 ✓ | 27890.2 | 20.00 |
| G6 | GRO(C5-C10) | | 431167.0 ✓ | 21396.8 | 20.00 |

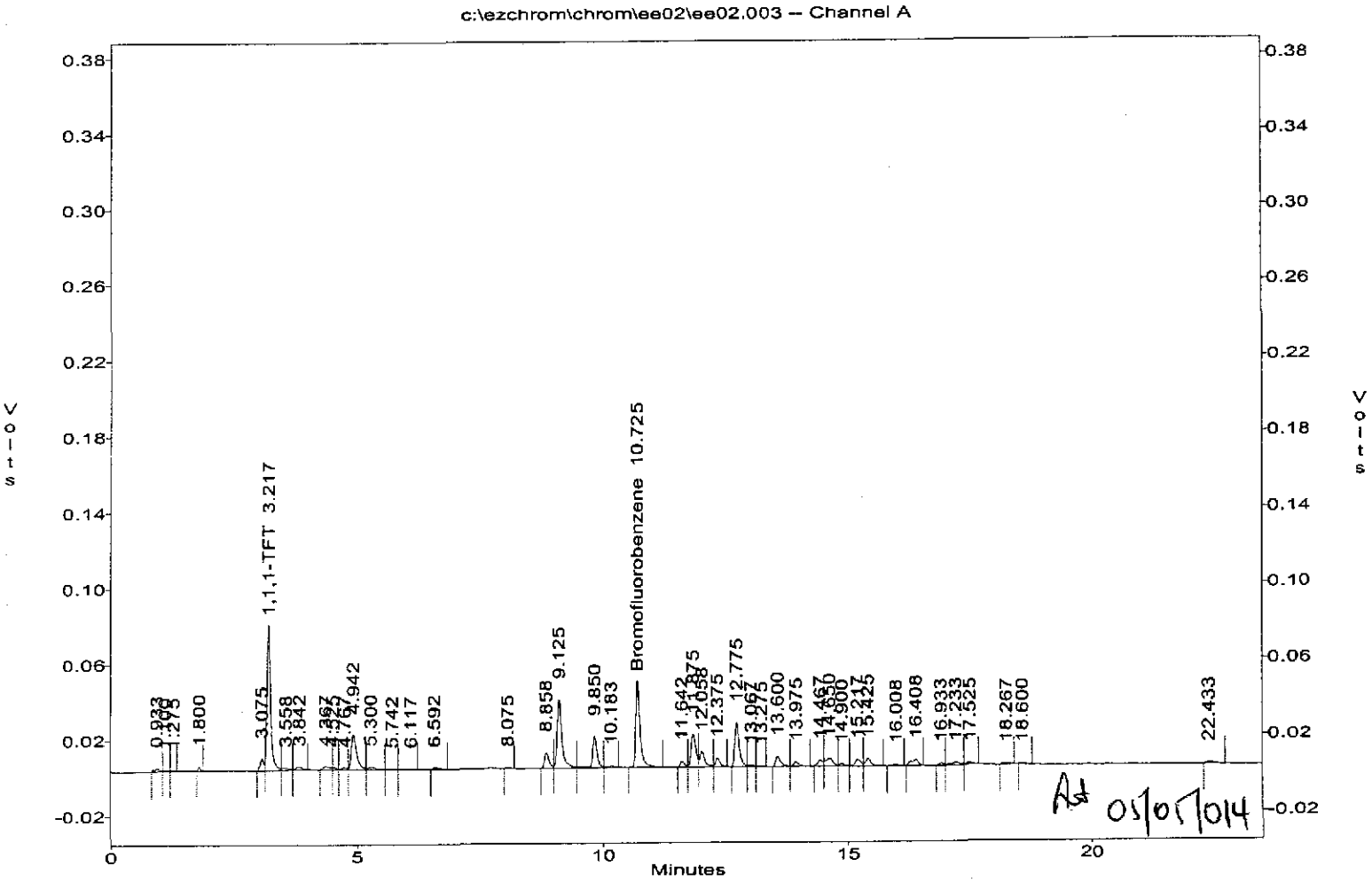


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.003
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0202 50/20
Acquired : May 02, 2014 12:18:52
Printed : May 05, 2014 09:31:23
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 6 | 1,1,1-TFT | 3.217 | 410145.0 | 21400.0 | 20.00 |
| 22 | Bromofluorobenzene | 10.725 | 287659.0 | 16725.9 | 20.00 |
| G1 | GASOLINE(TOTAL) | | 1385955.0 | 28261.9 | 50.00 |
| G2 | GRO(C6-C10) | | 1080683.0 | 21355.4 | 50.00 |
| G3 | GRO(2MP-124TMB) | | 1080683.0 | 21297.0 | 50.00 |
| G4 | GRO(C5-C12) | | 1372563.0 | 27928.9 | 50.00 |
| G5 | GRO(C6-C12) | | 1369606.0 | 27890.2 | 50.00 |
| G6 | GRO(C5-C10) | | 1083640.0 | 21396.8 | 50.00 |

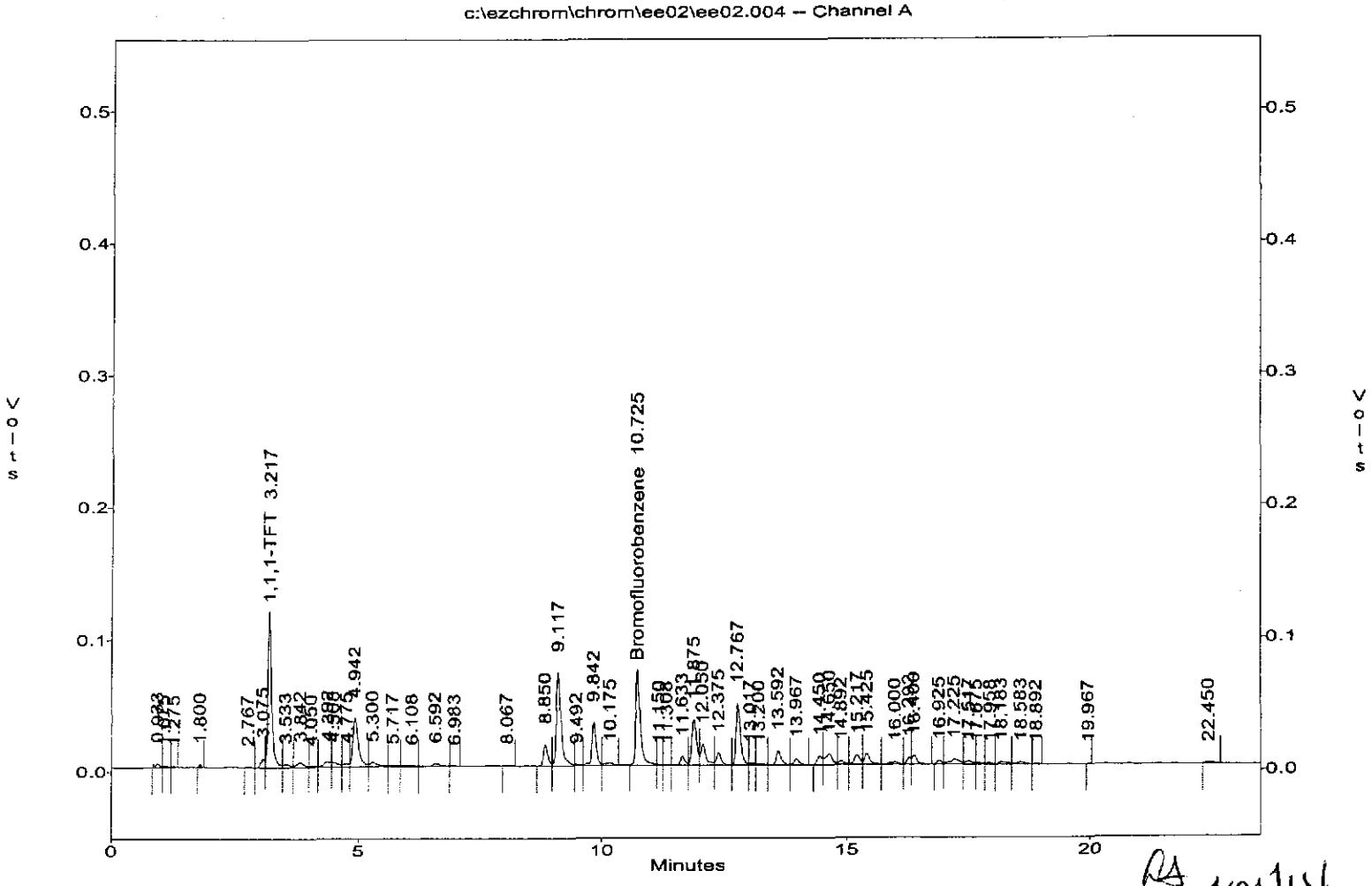


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.004
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0203 100/30
Acquired : May 02, 2014 12:57:53
Printed : May 05, 2014 09:31:56
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 7 | 1,1,1-TFT | 3.217 | 630554.0 | 21400.0 | 30.00 |
| 26 | Bromofluorobenzene | 10.725 | 451712.0 | 16725.9 | 30.00 |
| G1 | GASOLINE(TOTAL) | | 2872293.0 | 28261.9 | 100.00 |
| G2 | GRO(C6-C10) | | 2207233.0 | 21355.4 | 100.00 |
| G3 | GRO(2MP-124TMB) | | 2196184.0 | 21297.0 | 100.00 |
| G4 | GRO(C5-C12) | | 2853376.0 | 27928.9 | 100.00 |
| G5 | GRO(C6-C12) | | 2850571.0 | 27890.2 | 100.00 |
| G6 | GRO(C5-C10) | | 2210038.0 | 21396.8 | 100.00 |




RA 05/05/14

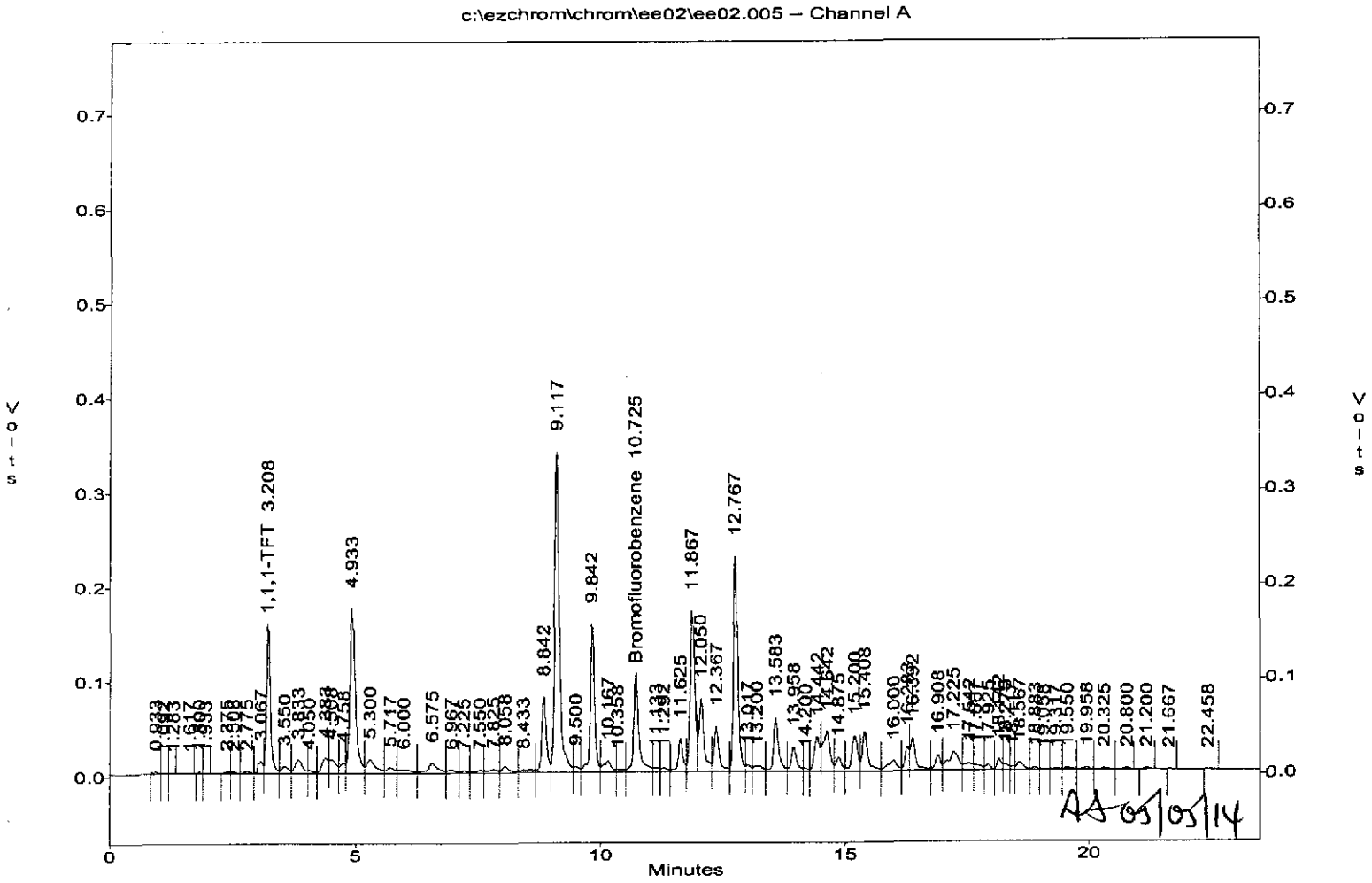
5022

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.005
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0204 500/40
Acquired : May 02, 2014 13:36:49
Printed : May 05, 2014 09:32:30
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.208 | 863365.0 | 21400.0 | 40.00 |
| 35 | Bromofluorobenzene | 10.725 | 758288.0 | 16725.9 | 40.00 |
| G1 | GASOLINE(TOTAL) | | 14446530.0 | 28261.9 | 500.00 |
| G2 | GRO(C6-C10) | | 10735124.0 | 21355.4 | 500.00 |
| G3 | GRO(2MP-124TMB) | | 10689338.0 | 21297.0 | 500.00 |
| G4 | GRO(C5-C12) | | 14281643.0 | 27928.9 | 500.00 |
| G5 | GRO(C6-C12) | | 14278004.0 | 27890.2 | 500.00 |
| G6 | GRO(C5-C10) | | 10740735.0 | 21396.8 | 500.00 |

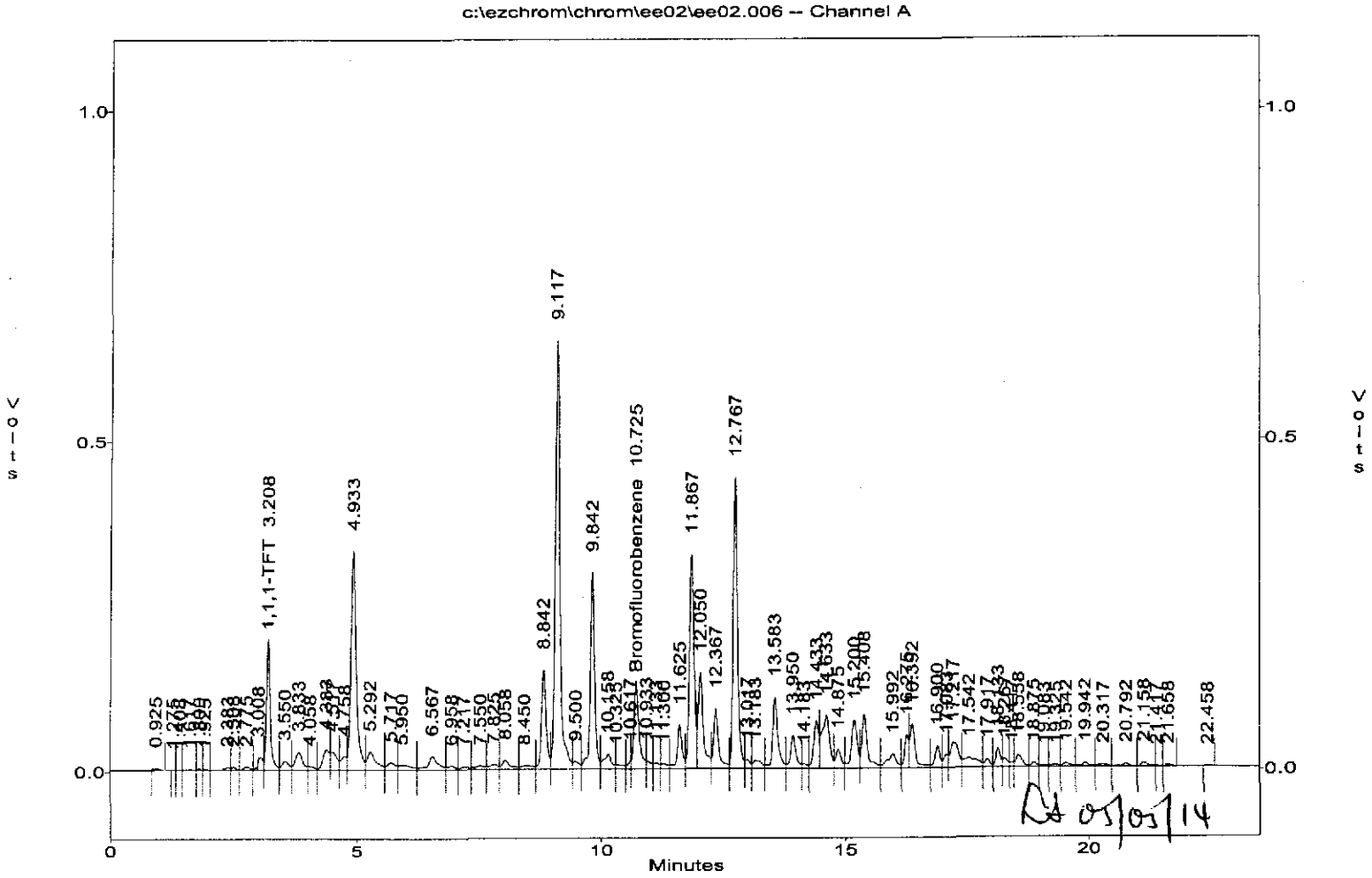


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.006
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0205 1000/50
Acquired : May 02, 2014 14:15:41
Printed : May 05, 2014 09:34:01
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.208 | 1088814.0 | 21400.0 | 50.00 |
| 36 | Bromofluorobenzene | 10.725 | 946013.0 | 16725.9 | 50.00 |
| G1 | GASOLINE(TOTAL) | | 27834716.0 | 28261.9 | 1000.00 |
| G2 | GRO(C6-C10) | | 20441208.0 | 21355.4 | 1000.00 |
| G3 | GRO(2MP-124TMB) | | 20359526.0 | 21297.0 | 1000.00 |
| G4 | GRO(C5-C12) | | 27414706.0 | 27928.9 | 1000.00 |
| G5 | GRO(C6-C12) | | 27410822.0 | 27890.2 | 1000.00 |
| G6 | GRO(C5-C10) | | 20451276.0 | 21396.8 | 1000.00 |




05/05/14

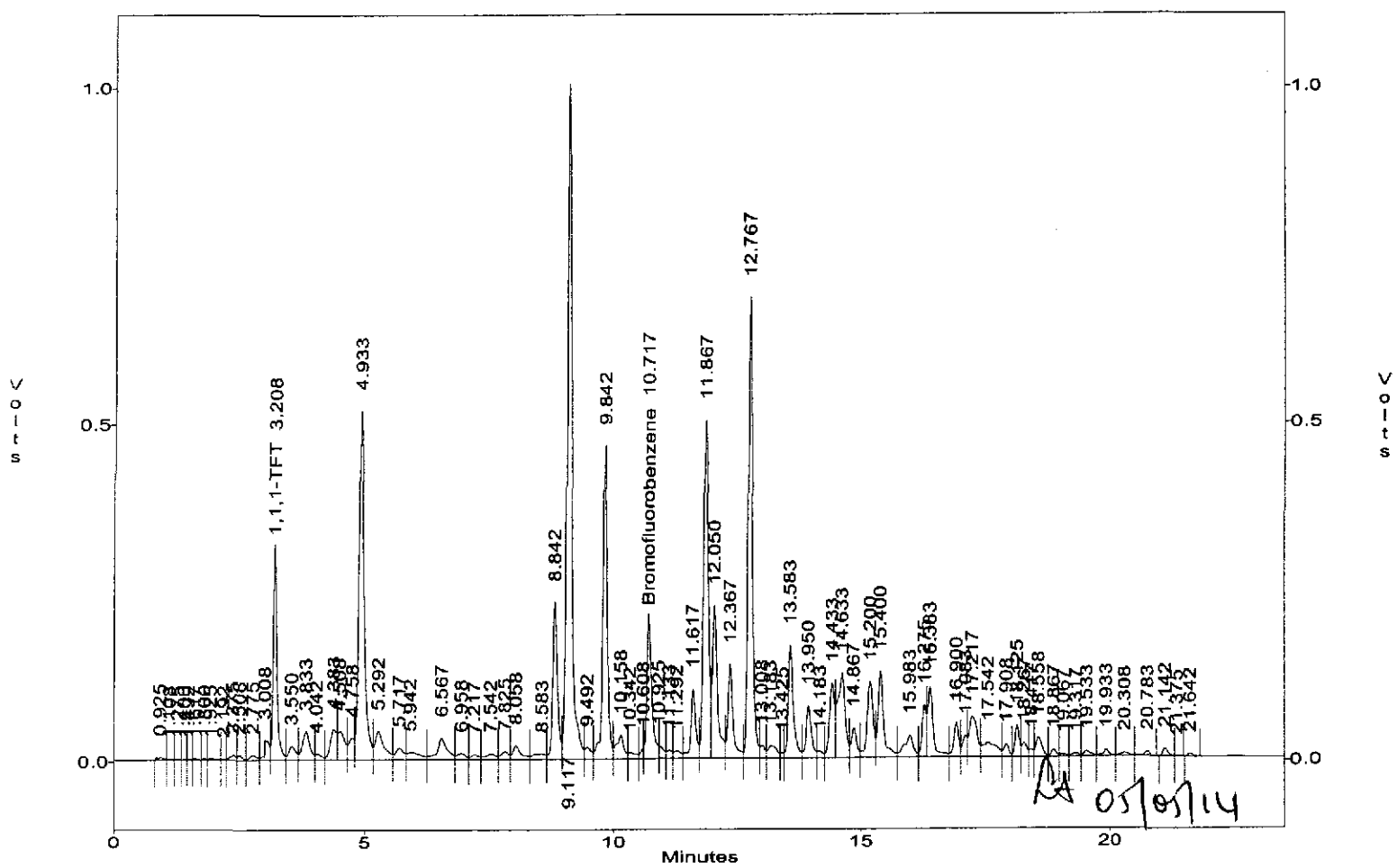
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.007
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : VG39E0206 1500/80
Acquired : May 02, 2014 14:54:32
Printed : May 05, 2014 09:34:29
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 14 | 1,1,1-TFT | 3.208 | 1754672.0 | 21400.0 | 80.00 |
| 39 | Bromofluorobenzene | 10.717 | 1495364.0 | 16725.9 | 80.00 |
| G1 | GASOLINE(TOTAL) | | 42900720.0 | 28261.9 | 1500.00 |
| G2 | GRO(C6-C10) | | 31643026.0 | 21355.4 | 1500.00 |
| G3 | GRO(2MP-124TMB) | | 31542302.0 | 21297.0 | 1500.00 |
| G4 | GRO(C5-C12) | | 42297752.0 | 27928.9 | 1500.00 |
| G5 | GRO(C6-C12) | | 42275336.0 | 27890.2 | 1500.00 |
| G6 | GRO(C5-C10) | | 31675030.0 | 21396.8 | 1500.00 |

c:\ezchrom\chrom\ee02\ee02.007 -- Channel A



# SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EE02008A 05/02/2014 15:33
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 13053470 | 461.88 | -8 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10134937 | 474.58 | -5 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10247177 | 481.16 | -4 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 12590737 | 450.82 | -10 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 12493550 | 447.95 | -10 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10304659 | 481.60 | -4 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.717 | 10.674 | 10.760 | 40.0 | 16725.9 | 696321 | 41.63 | 4 | | 20 |
| 1,1,1-Trifluorotoluene | 3.208 | 3.084 | 3.332 | 40.0 | 21400.0 | 954586 | 44.61 | 12 | | 20 |

VG39E02.MET

AS
05/05/14

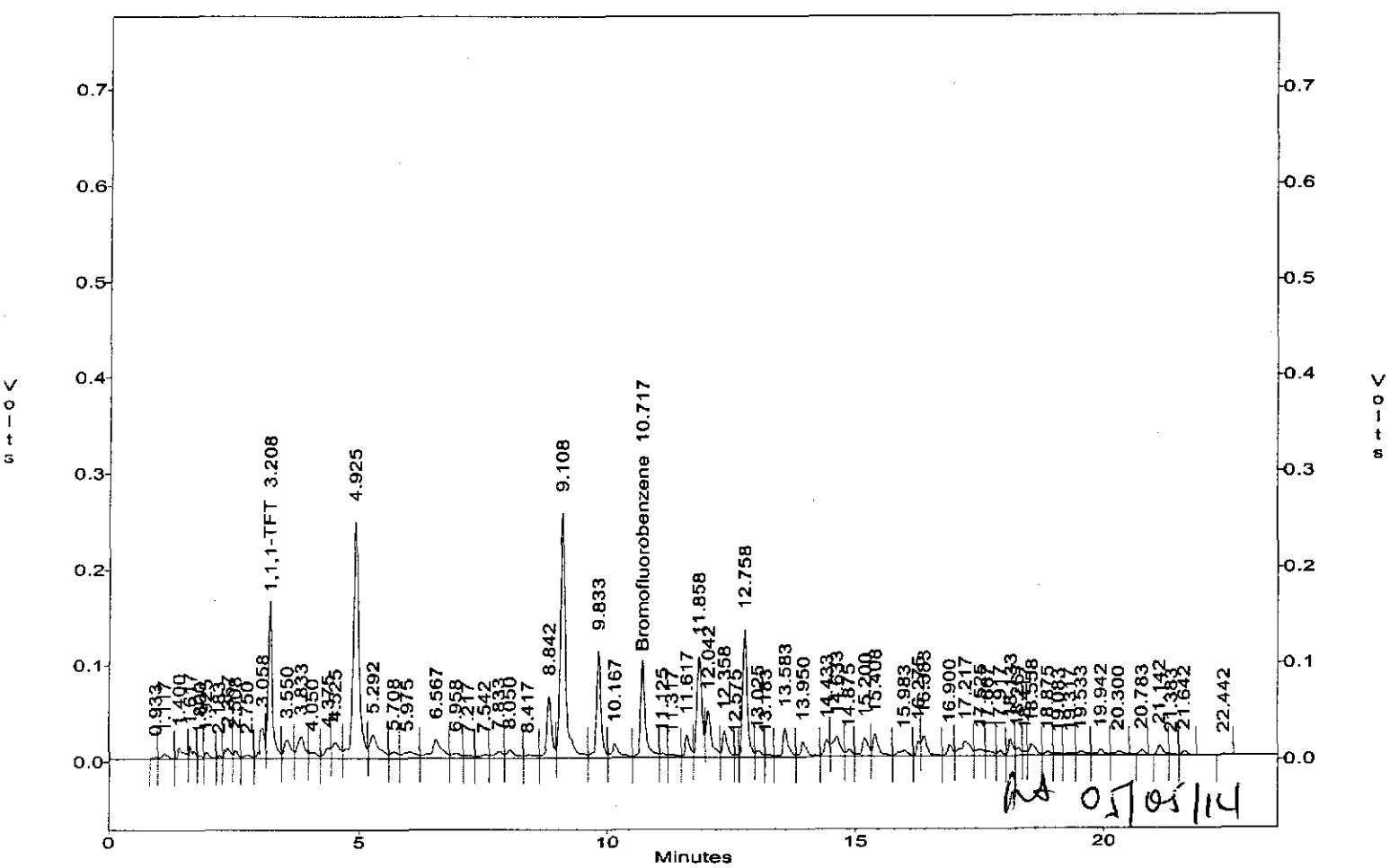
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.008
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : IVG39E02001 500/40
Acquired : May 02, 2014 15:33:24
Printed : May 05, 2014 09:35:55
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 12 | 1,1,1-TFT | 3.208 | 954586.0 | 21400.0 | 44.61 |
| 33 | Bromofluorobenzene | 10.717 | 696321.0 | 16725.9 | 41.63 |
| G1 | GASOLINE(TOTAL) | | 13053470.0 | 28261.9 | 461.88 |
| G2 | GRO(C6-C10) | | 10134937.0 | 21355.4 | 474.58 |
| G3 | GRO(2MP-124TMB) | | 10247177.0 | 21297.0 | 481.16 |
| G4 | GRO(C5-C12) | | 12590737.0 | 27928.9 | 450.81 |
| G5 | GRO(C6-C12) | | 12493550.0 | 27890.2 | 447.95 |
| G6 | GRO(C5-C10) | | 10304659.0 | 21396.8 | 481.60 |

c:\ezchrom\chrom\ee02\ee02.008 -- Channel A

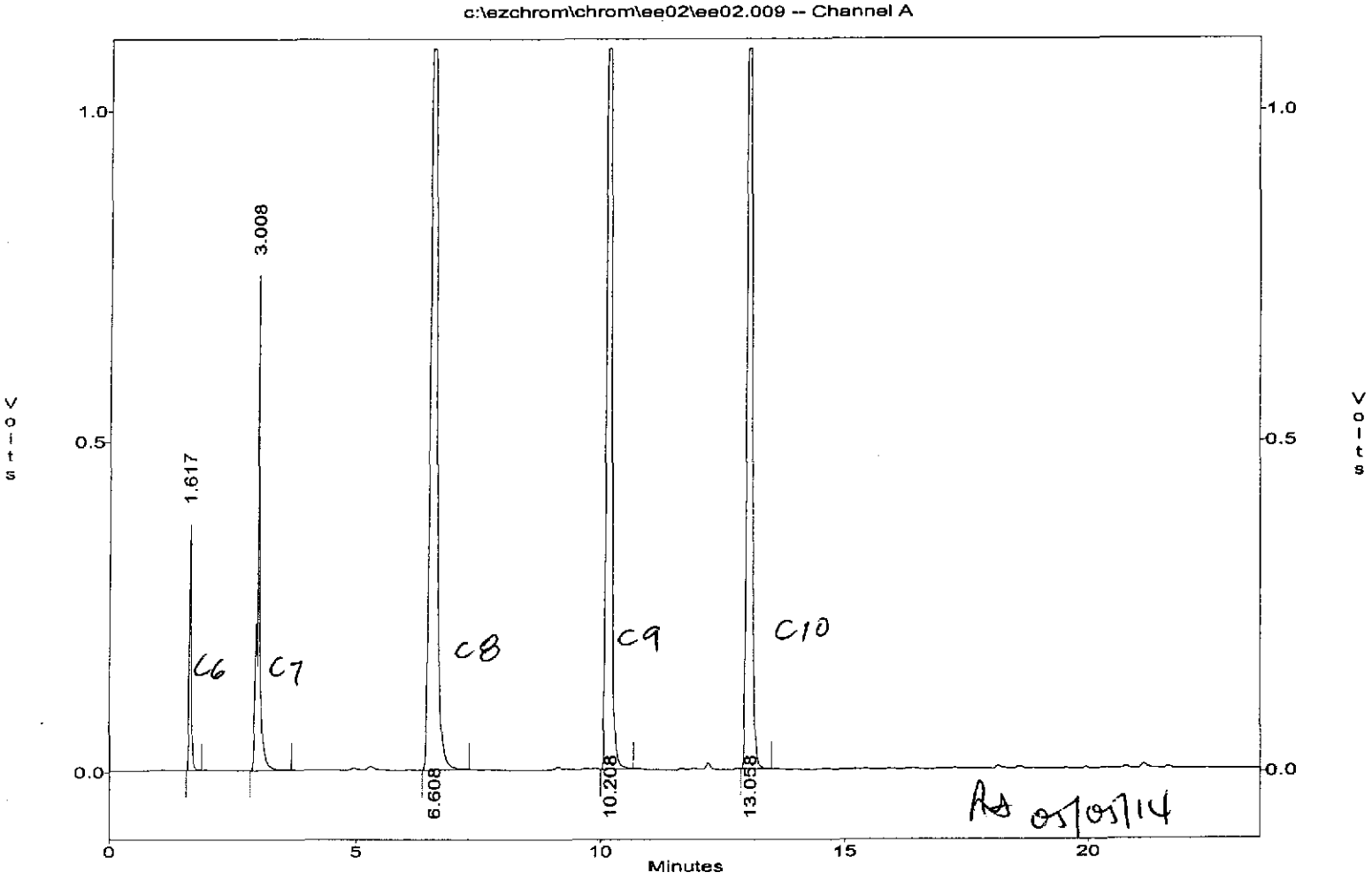


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.009
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : GRO 1UL
Acquired : May 02, 2014 16:12:18
Printed : May 05, 2014 09:36:36
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 32746974.0 | 28261.9 | 1158.70 |
| G2 | GRO(C6-C10) | | 22835384.0 | 21355.4 | 1069.30 |
| G3 | GRO(2MP-124TMB) | | 23874628.0 | 21297.0 | 1121.03 |
| G4 | GRO(C5-C12) | | 32746974.0 | 27928.9 | 1172.51 |
| G5 | GRO(C6-C12) | | 32746974.0 | 27890.2 | 1174.14 |
| G6 | GRO(C5-C10) | | 23874628.0 | 21396.8 | 1115.80 |



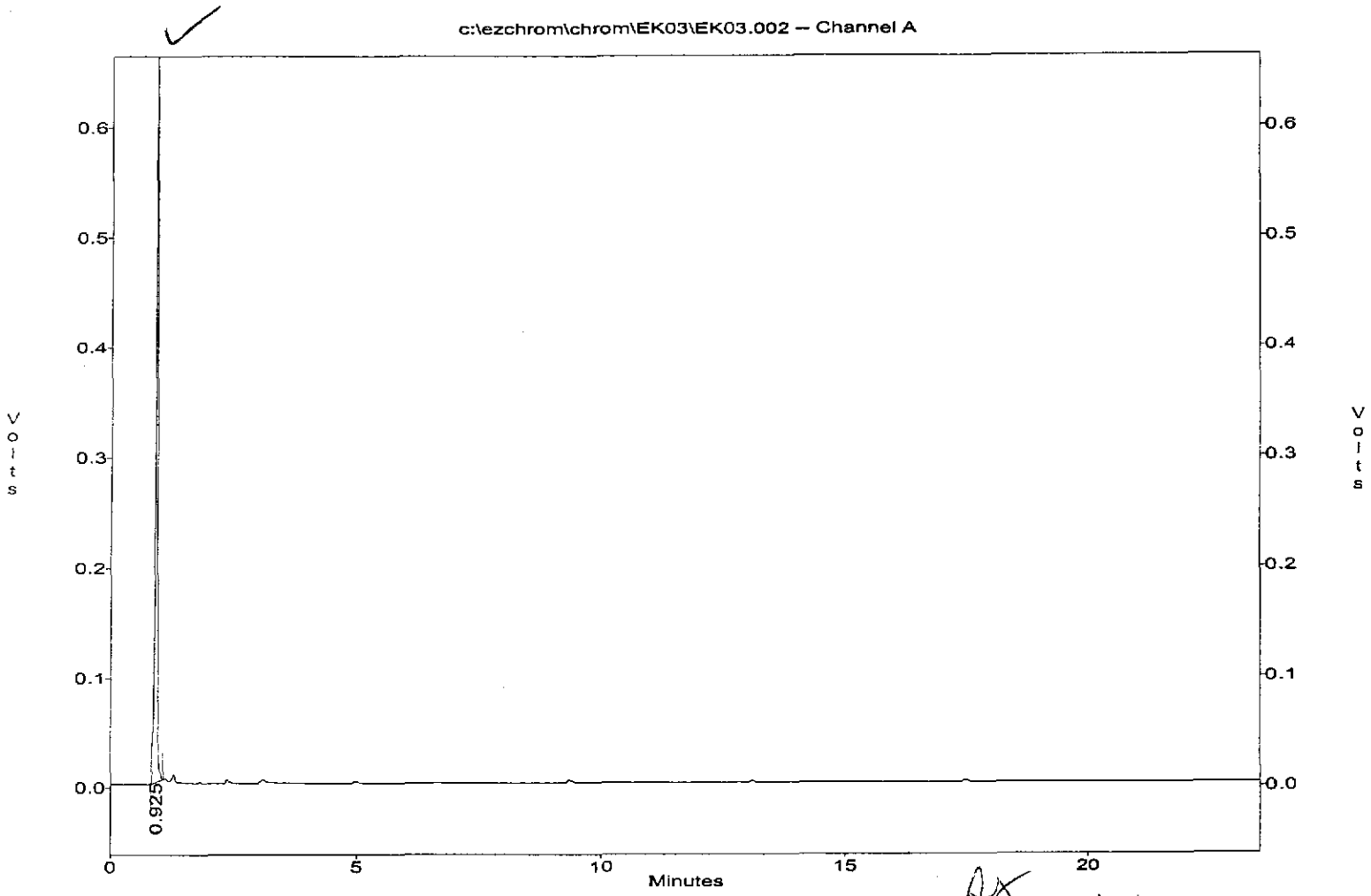

AS 05/05/14

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK03\EK03.002
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : N-BUTANE 100uL
Acquired : Nov 03, 2014 10:53:47
Printed : Nov 04, 2014 10:42:29
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.225 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.742 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 0.0 | 28261.9 | 0.00 |
| G2 | GRO(C6-C10) | | 0.0 | 21355.4 | 0.00 |
| G3 | GRO(2MP-124TMB) | | 0.0 | 21297.0 | 0.00 |
| G4 | GRO(C5-C12) | | 0.0 | 27928.9 | 0.00 |
| G5 | GRO(C6-C12) | | 0.0 | 27890.2 | 0.00 |
| G6 | GRO(C5-C10) | | 0.0 | 21396.8 | 0.00 |




AS 11/04/14

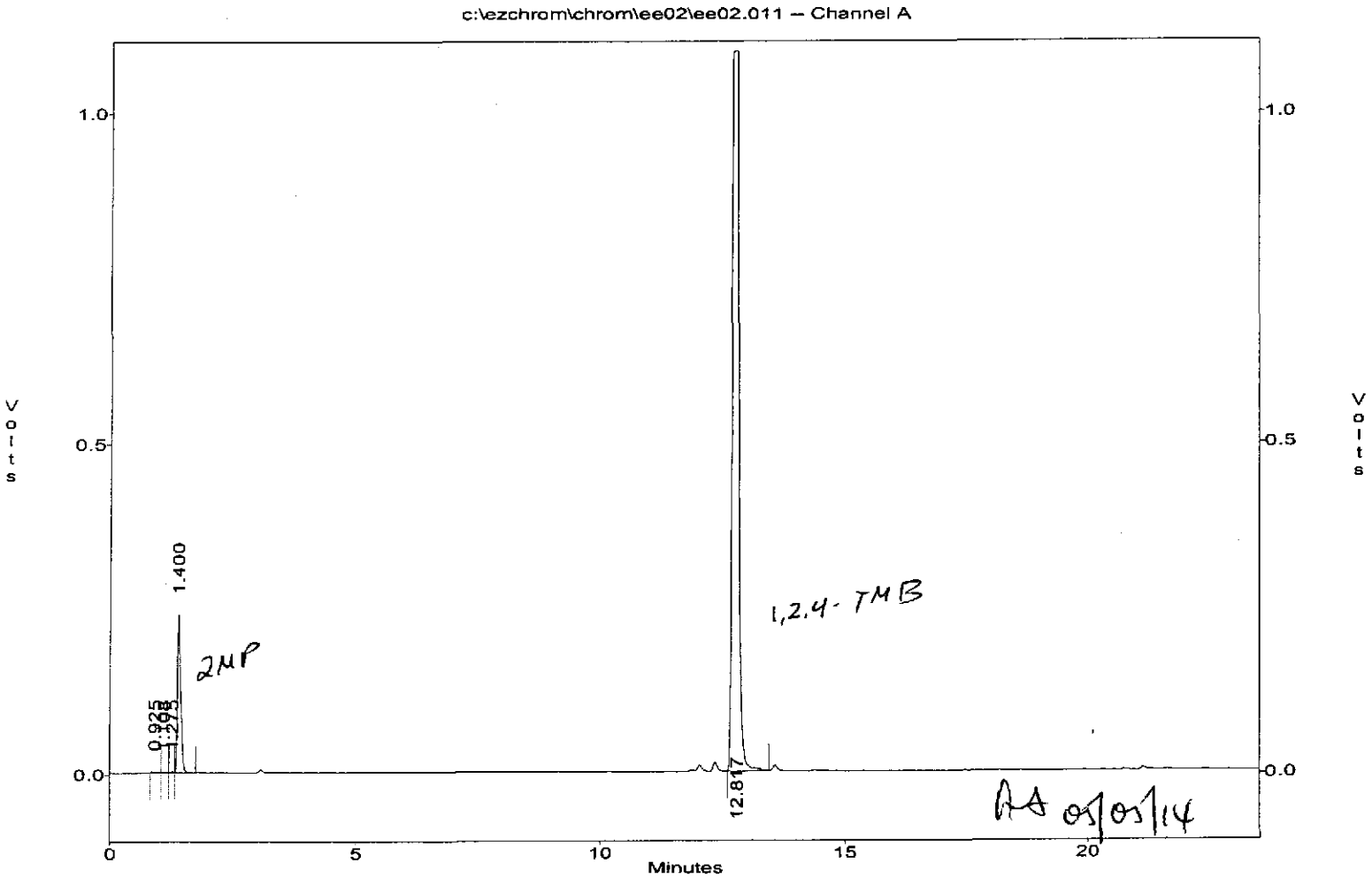
4838

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.011
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : 2MP/1,2,4-TMB
Acquired : May 02, 2014 17:30:38
Printed : May 05, 2014 09:36:43
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 11435951.0 | 28261.9 | 404.64 |
| G2 | GRO(C6-C10) | | 10280670.0 | 21355.4 | 481.41 |
| G3 | GRO(2MP-124TMB) | | 11417507.0 | 21297.0 | 536.11 |
| G4 | GRO(C5-C12) | | 11428096.0 | 27928.9 | 409.19 |
| G5 | GRO(C6-C12) | | 10280670.0 | 27890.2 | 368.61 |
| G6 | GRO(C5-C10) | | 11428096.0 | 21396.8 | 534.10 |



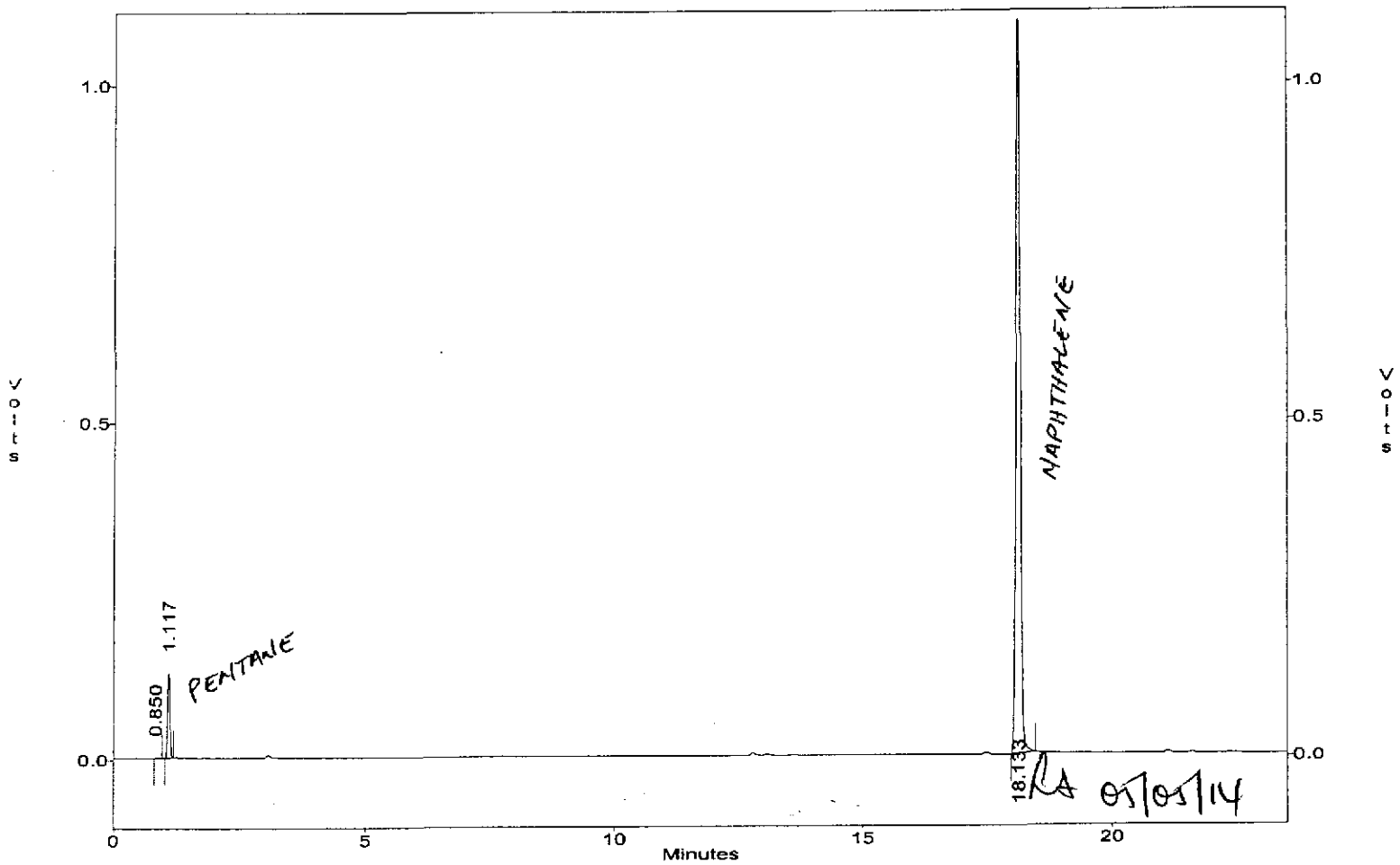
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.013
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : PENTANE/NAPHTHALENE
Acquired : May 02, 2014 18:48:50
Printed : May 05, 2014 09:37:29
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 7086992.0 | 28261.9 | 250.76 |
| G2 | GRO(C6-C10) | | 0.0 | 21355.4 | 0.00 |
| G3 | GRO(2MP-124TMB) | | 0.0 | 21297.0 | 0.00 |
| G4 | GRO(C5-C12) | | 6645801.0 | 27928.9 | 237.95 |
| G5 | GRO(C6-C12) | | 6645801.0 | 27890.2 | 238.28 |
| G6 | GRO(C5-C10) | | 0.0 | 21396.8 | 0.00 |

c:\ezchrom\chrom\ee02\ee02.013 -- Channel A

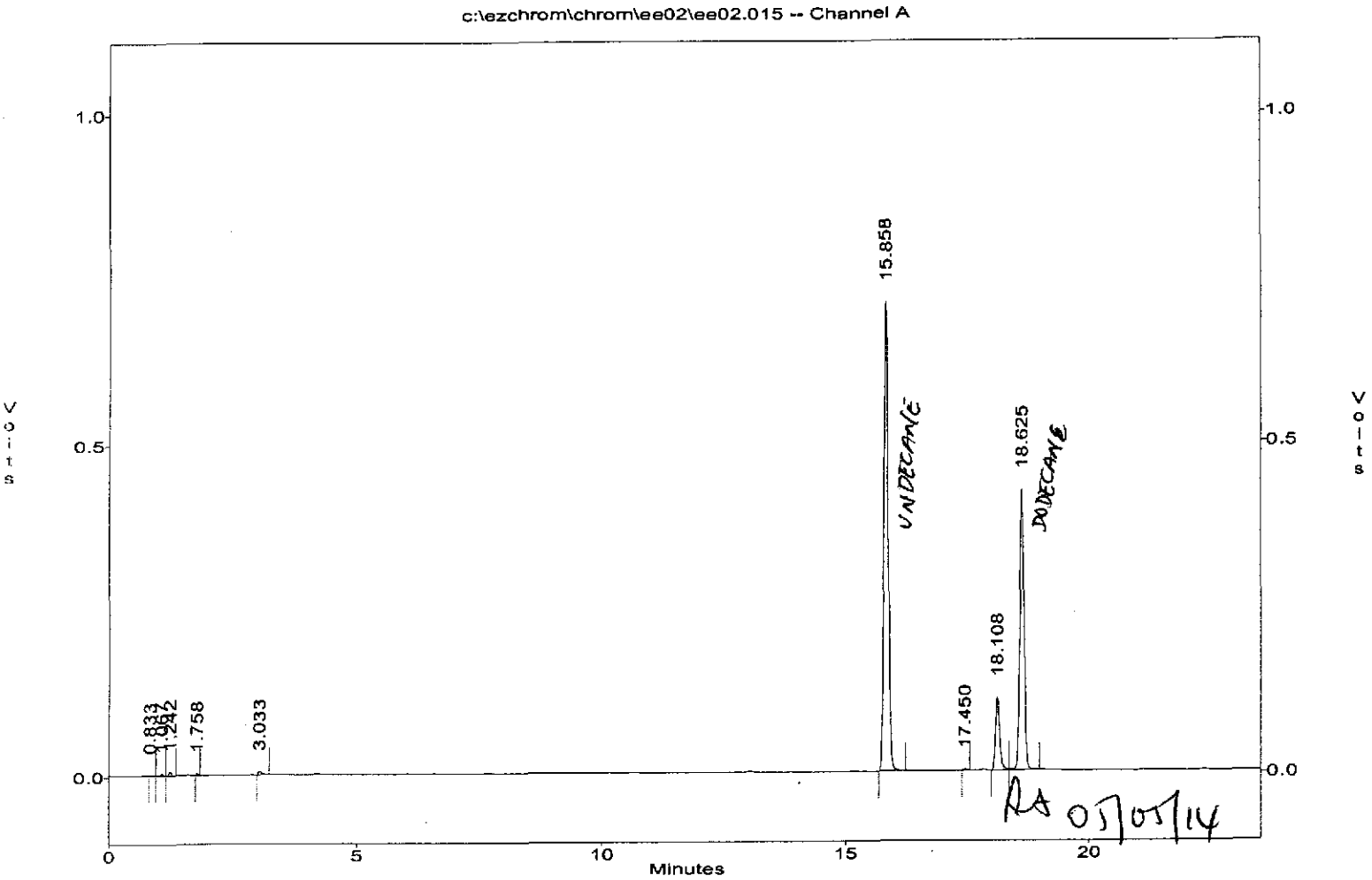


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ee02\ee02.015
Method : c:\ezchrom\methods\vg39e02.met
Sample ID : UNDECANE/DODECANE
Acquired : May 02, 2014 20:06:47
Printed : May 05, 2014 09:38:16
User : SERGIO

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| -- | 1,1,1-TFT | 3.208 | 0.0 | 0.0 | 0.00 |
| -- | Bromofluorobenzene | 10.725 | 0.0 | 0.0 | 0.00 |
| G1 | GASOLINE(TOTAL) | | 7612846.0 | 28261.9 | 269.37 |
| G2 | GRO(C6-C10) | | 30808.0 | 21355.4 | 1.44 |
| G3 | GRO(2MP-124TMB) | | 30808.0 | 21297.0 | 1.45 |
| G4 | GRO(C5-C12) | | 7599145.0 | 27928.9 | 272.09 |
| G5 | GRO(C6-C12) | | 7579660.0 | 27890.2 | 271.77 |
| G6 | GRO(C5-C10) | | 50293.0 | 21396.8 | 2.35 |



# DAILY CALIBRATIONS

CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EK12036A 11/13/2014 08:53
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 14011621 | 495.78 | -1 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10441501 | 488.94 | -2 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10376179 | 487.21 | -3 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 13825159 | 495.01 | -1 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 13821433 | 495.57 | -1 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10445227 | 488.17 | -2 | | 20 |

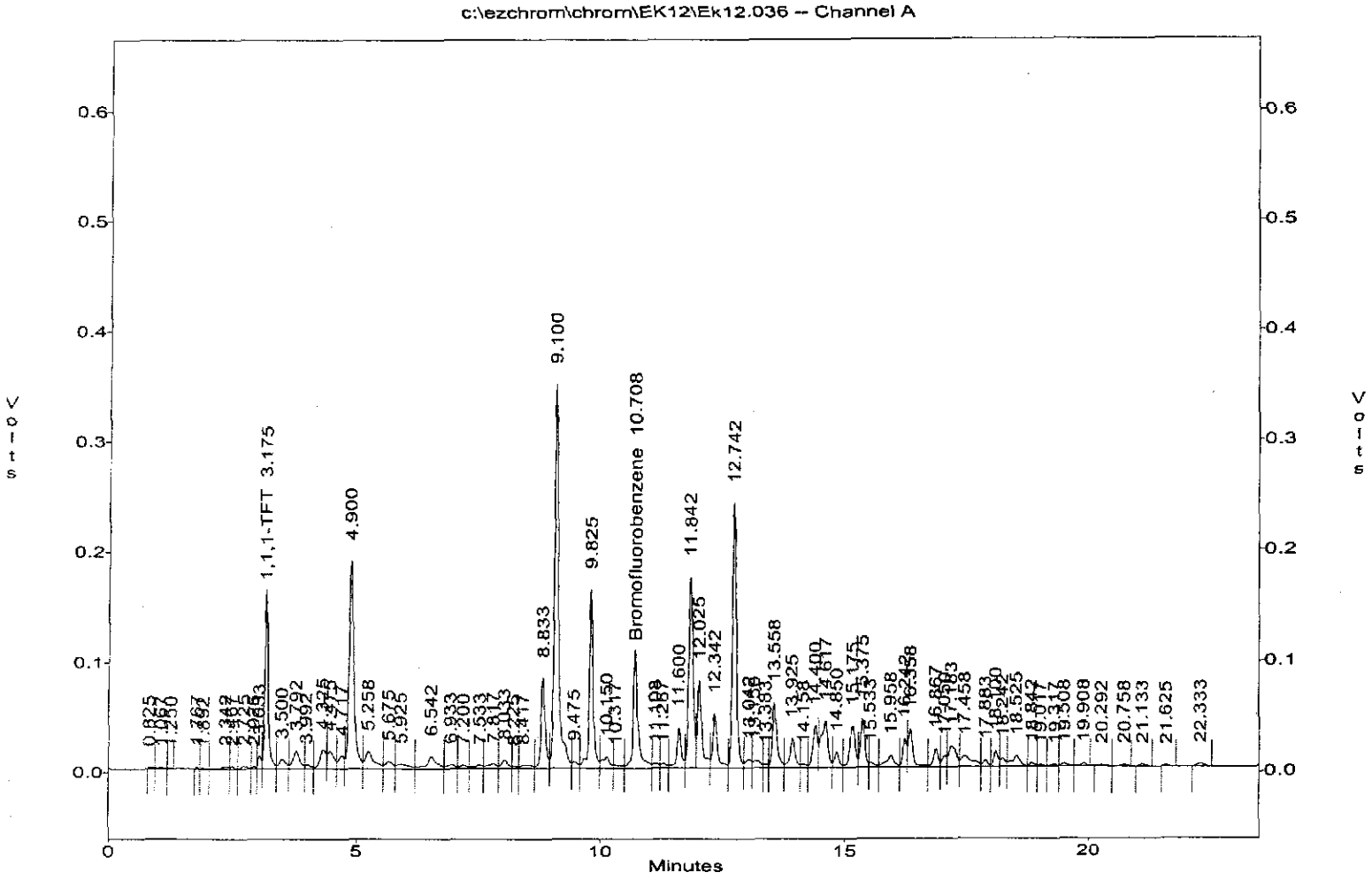
| SURROGATE | MINUTES | FROM | TO | TRUECON | CF | AREA | CONC | %D | QL | LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromofluorobenzene | 10.708 | 10.665 | 10.751 | 40.0 | 16725.9 | 707504 | 42.30 | 6 | | 20 |
| 1,1,1-Trifluorotoluene | 3.175 | 3.051 | 3.299 | 40.0 | 21400.0 | 814522 | 38.06 | -5 | | 20 |

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\Ek12.036
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : CVG39E02780 500/40
Acquired : Nov 13, 2014 08:53:04
Printed : Nov 13, 2014 09:16:37
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 11 | 1,1,1-TFT | 3.175 | 814522.0 | 21400.0 | 38.06 |
| 36 | Bromofluorobenzene | 10.708 | 707504.0 | 16725.9 | 42.30 |
| G1 | GASOLINE(TOTAL) | | 14011621.0 | 28261.9 | 495.78 |
| G2 | GRO(C6-C10) | | 10441501.0 | 21355.4 | 488.94 |
| G3 | GRO(2MP-124TMB) | | 10376179.0 | 21297.0 | 487.21 |
| G4 | GRO(C5-C12) | | 13825159.0 | 27928.9 | 495.01 |
| G5 | GRO(C6-C12) | | 13821433.0 | 27890.2 | 495.57 |
| G6 | GRO(C5-C10) | | 10445227.0 | 21396.8 | 488.17 |




4036

CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EK12047A 11/13/2014 16:09
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 13870495 | 490.79 | -2 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10300568 | 482.34 | -4 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10219037 | 479.83 | -4 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 13697232 | 490.43 | -2 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 13690172 | 490.86 | -2 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10307628 | 481.74 | -4 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.717 | 10.674 | 10.760 | 40.0 | 16725.9 | 715316 | 42.77 | 7 | | 20 |
| 1,1,1-Trifluorotoluene | 3.208 | 3.084 | 3.332 | 40.0 | 21400.0 | 823354 | 38.47 | -4 | | 20 |

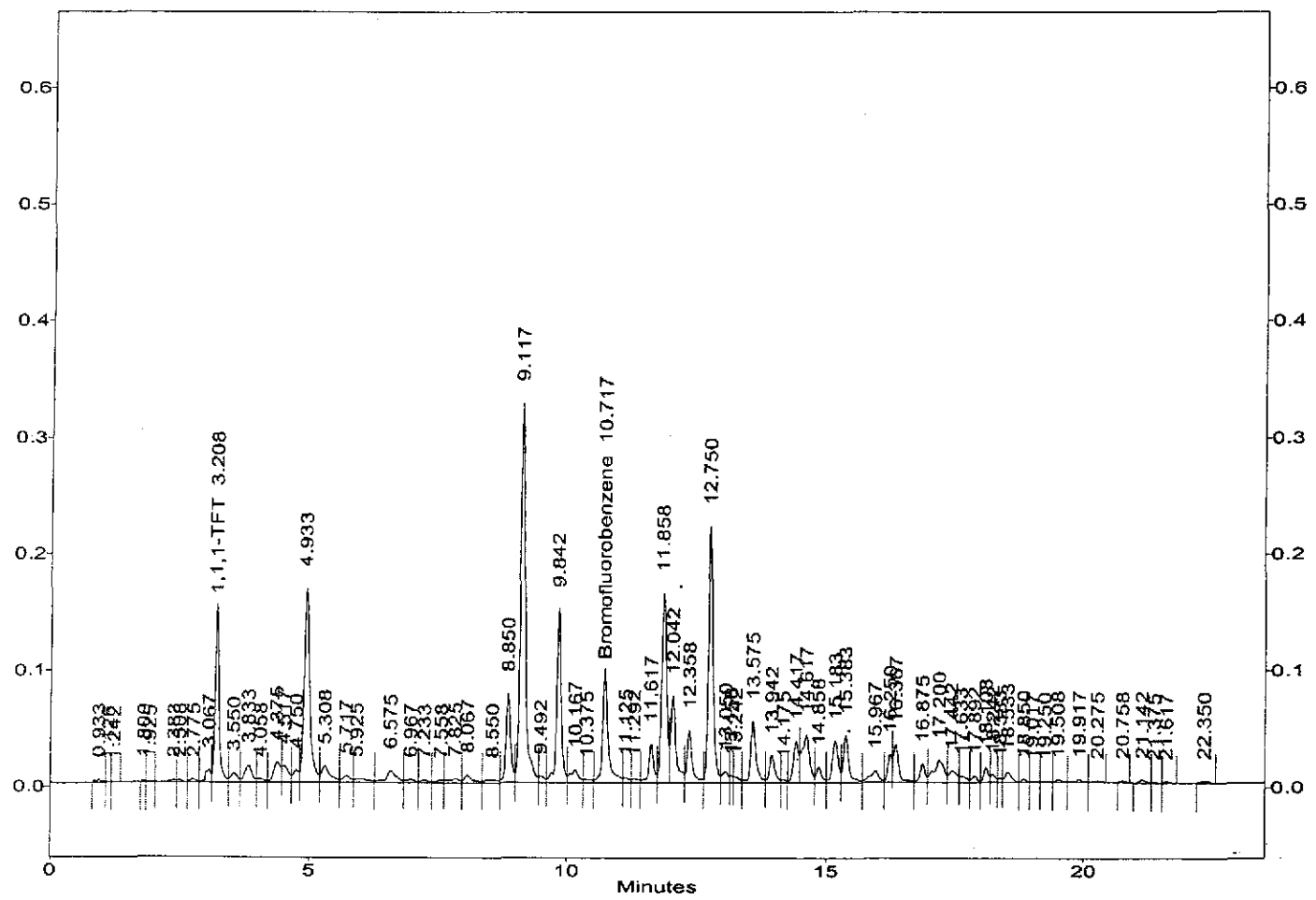
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\Ek12.047
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : CVG39E02781 500/40
Acquired : Nov 13, 2014 16:09:52
Printed : Nov 13, 2014 16:33:23
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 10 | 1,1,1-TFT | 3.208 | 823354.0 | 21400.0 | 38.47 |
| 34 | Bromofluorobenzene | 10.717 | 715316.0 | 16725.9 | 42.77 |
| G1 | GASOLINE(TOTAL) | | 13870495.0 | 28261.9 | 490.78 |
| G2 | GRO(C6-C10) | | 10300568.0 | 21355.4 | 482.34 |
| G3 | GRO(2MP-124TMB) | | 10219037.0 | 21297.0 | 479.84 |
| G4 | GRO(C5-C12) | | 13697232.0 | 27928.9 | 490.43 |
| G5 | GRO(C6-C12) | | 13690172.0 | 27890.2 | 490.86 |
| G6 | GRO(C5-C10) | | 10307628.0 | 21396.8 | 481.74 |

c:\ezchrom\chrom\EK12\Ek12.047 -- Channel A



CONTINUE CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 3DMX.53MM
Mid Conc Init LFID & Datetime: EE02005A 05/02/2014 13:36
Conc Cont LFID & Datetime: EK12058A 11/13/2014 23:20
CONC UNIT : ppb

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline(TOTAL) | NA | NA | NA | 500.0 | 28261.9 | 14193951 | 502.23 | 0 | | 20 |
| GRO(C6-C10) | NA | NA | NA | 500.0 | 21355.4 | 10429919 | 488.40 | -2 | | 20 |
| GRO(2MP-124TMB) | NA | NA | NA | 500.0 | 21297.0 | 10362258 | 486.56 | -3 | | 20 |
| GRO(C5-C12) | NA | NA | NA | 500.0 | 27928.9 | 13985526 | 500.76 | 0 | | 20 |
| GRO(C6-C12) | NA | NA | NA | 500.0 | 27890.2 | 13966328 | 500.76 | 0 | | 20 |
| GRO(C5-C10) | NA | NA | NA | 500.0 | 21396.8 | 10449117 | 488.35 | -2 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| Bromofluorobenzene | 10.700 | 10.657 | 10.743 | 40.0 | 16725.9 | 724991 | 43.35 | 8 | | 20 |
| 1,1,1-Trifluorotoluene | 3.167 | 3.043 | 3.291 | 40.0 | 21400.0 | 808461 | 37.78 | -6 | | 20 |

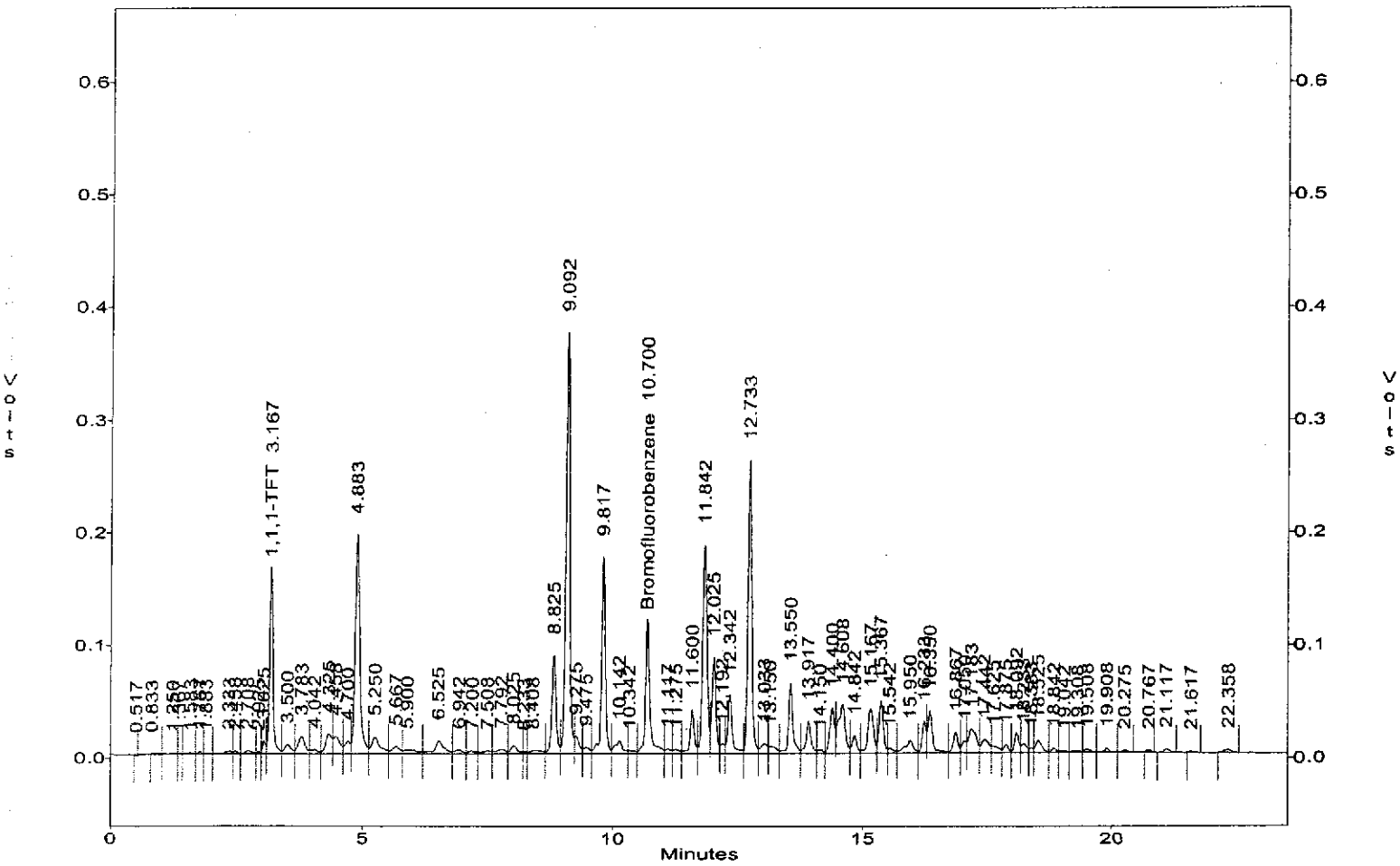
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EK12\Ek12.058
Method : c:\ezchrom\methods\Vg39e02.met
Sample ID : CVG39E02782 500/40
Acquired : Nov 13, 2014 23:20:52
Printed : Nov 13, 2014 23:44:25
User : SCerva

Channel A Results

| # | Peak Name | Ret.Time(Min) | Area | Ave. CF | ESTD Conc.(PPB) |
|---|---|---|---|---|---|
| 13 | 1,1,1-TFT | 3.167 | 808461.0 | 21400.0 | 37.78 |
| 39 | Bromofluorobenzene | 10.700 | 724991.0 | 16725.9 | 43.35 |
| G1 | GASOLINE(TOTAL) | | 14193951.0 | 28261.9 | 502.23 |
| G2 | GRO(C6-C10) | | 10429919.0 | 21355.4 | 488.40 |
| G3 | GRO(2MP-124TMB) | | 10362258.0 | 21297.0 | 486.56 |
| G4 | GRO(C5-C12) | | 13985526.0 | 27928.9 | 500.76 |
| G5 | GRO(C6-C12) | | 13966328.0 | 27890.2 | 500.76 |
| G6 | GRO(C5-C10) | | 10449117.0 | 21396.8 | 488.35 |

c:\ezchrom\chrom\EK12\Ek12.058 -- Channel A



# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# PURGEABLE TPH

**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

Purge Volume = 5 ml

GASOLINE ICAL

GRO - SV2-07-02-13
2MP - SV2-09-06-01
TMB - SV2-05-23
PENTANE - SV2-07-01-03
NAPHTHALENE - SV2-05-24
UNDECANE - SV2-07-01-02
DODECANE - SV2-07-01-06

| | |
|---|---|
| **Book #:** | A39-047 |
| **Instrument No.:** | 39 |
| **Analytical Sequence:** | EE02 |
| **Method File:** | ☑ VG39E02 |
| | ☐ |
| | ☐ |
| **Analytical Batch:** | N/A |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-5030B | 3 |
| ☐ EMAX-BTEXM | 1 |
| ☑ EMAX-8015G | 4 |
| ☐ EMAX-AK101 | 2 |
| ☐ EMAX- | |

| STANDARDS ID | Amt Added (µL) | Conc. (mg/L) |
|---|---|---|
| ICAL — | — | — |
| ICAL SV2-07-02-06 | See Analysis Run logbook | 5000 |
| ICV SV2-07-02-04 | 0.5ml | 5000 |
| ICV — | — | — |
| DCC GAS — | — | — |
| DCC BTEX — | — | — |
| DCC — | — | — |
| BFB/TFT SV2-09-08-03 (Sample) (See) | SC 5/02/14 See Analysis Run Logbook | 100 |
| LCS/LCSD — | — | — |
| MS/MSD — | — | — |
| GRO (HC-Chain) SV2-07-02-13 | 1ml | 2000 |
| | | |

| Solvent | ID/Lot # |
|---|---|
| Methanol | |
| Reagent Water | RW2-12-001 |
| | **Lot #** |
| pH strip | — |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZC-3-BTEX SC | 5/05/14 |

Analyzed By: SC

Date: 5/02/14

Method: Vg39e02.met Batch: Ee02.seq Data: Ee02.030 - [Batch: ee02.seq]

File Edit Method Batch Options Analysis Control Window Help

| Run | Sample ID | Method | Filename | Description |
|---|---|---|---|---|
| 1 | IB39E0201 | vg39e02.met | EE02.001 | |
| 2 | VG39E0201 20/10 0.02ml GAS ICAL STD / 0.5ul SUM | vg39e02.met | EE02.002 | |
| 3 | VG39E0202 50/20 0.05ml / 1ml | vg39e02.met | EE02.003 | |
| 4 | VG39E0203 100/30 0.1ml / 1.5ml | vg39e02.met | EE02.004 | |
| 5 | VG39E0204 500/40 0.5ml / 2ml | vg39e02.met | EE02.005 | GASOLINE ICAL |
| 6 | VG39E0205 1000/50 1ml / 2.5ml | vg39e02.met | EE02.006 | |
| 7 | VG39E0206 1500/80 1.5ml / 4ml | vg39e02.met | EE02.007 | |
| 8 | IVG39E02001 500/40 0.5ml GAS ICV STD / 2ml SUM | vg39e02.met | EE02.008 | GASOLINE ICV |
| 9 | GRO 1UL | vg39e02.met | EE02.009 | |
| 10 | RINSE | vg39e02.met | EE02.010 | |
| 11 | 2MP/1,2,4-TMB | vg39e02.met | EE02.011 | |
| 12 | RINSE | vg39e02.met | EE02.012 | |
| 13 | PENTANE/NAPHTHALENE | vg39e02.met | EE02.013 | FINAL |
| 14 | RINSE | vg39e02.met | EE02.014 | |
| 15 | UNDECANE/DODECANE | vg39e02.met | EE02.015 | |
| 16 | RINSE | vg39e02.met | EE02.016 | |
| 17 | IB | vg39e02.met | EE02.017 | |
| 18 | IB | vg39e02.met | EE02.018 | |
| 19 | IB | vg39e02.met | EE02.019 | |
| 20 | IB | vg39e02.met | EE02.020 | |
| 21 | IB | vg39e02.met | EE02.021 | |
| 22 | IB | vg39e02.met | EE02.022 | |
| 23 | IB SC 5/05/14 | vg39e02.met | EE02.023 | |
| 24 | IB | vg39e02.met | EE02.024 | |
| 25 | IB | vg39e02.met | EE02.025 | |
| 26 | IB | vg39e02.met | EE02.026 | |
| 27 | IB | vg39e02.met | EE02.027 | |
| 28 | IB | vg39e02.met | EE02.028 | |
| 29 | IB | vg39e02.met | EE02.029 | |
| 30 | IB | vg39e02.met | EE02.030 | |
| 31 | IB | vg39e02.met | EE02.031 | |
| 32 | IB | vg39e02.met | EE02.032 | |
| 33 | IB | vg39e02.met | EE02.033 | |
| 34 | IB | vg39e02.met | EE02.034 | |

Instrument 1: T-039

Monday, May 05, 2014

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# PURGEABLE TPH



**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

Purge Volume = 5 ml

| | |
|---|---|
| **Book #:** | A39-049 |
| **Instrument No.:** | 39 |
| **Analytical Sequence:** | EK12 |
| **Method File:** | ☑ VG39E02 |
| | ☐ |
| | ☐ |
| **Analytical Batch:** | CVG39E02777 |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-5030B | 3 |
| ☑ EMAX-8015G | 5 |
| ☐ EMAX-AK101 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | Amt Added (µL) | Conc. (mg/L) |
|---|---|---|
| ICAL | | |
| ICAL | SC | 11/13/14 |
| ICV | | |
| ICV | | |
| DCC GAS SV2-07-02-24 | 0.5ml | 5000 |
| DCC | | |
| DCC | SC | 11/13/14 |
| BFB/TFT SV2-09-17-03 water (Sample) | 2ml | 100 |
| BFB/TFT SV2-09-17-03 (DCC) | 2ml | 100 |
| water LCS/LCSD SV2-07-02-20 | 0.5ml | 5000 |
| MS/MSD ↓ | ↓ | ↓ |
| GRO (HC-Chain) SV2-07-02-13 | 1ml | 2000 |
| | | |

| Solvent | ID/Lot # |
|---|---|
| Methanol | |
| Reagent Water | RW2-12-001 |
| | Lot # |
| pH strip | HC412469 |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZC-3-BTEX | |

Analyzed By: SC

Date: 11/12/14

Preweighed vials

GPK009 (soil): K074

NOTE: 2ml surrogate TFT/BFB (SV2-09-17-03) added prior to analysis.

VG39K06 (water): K068, K074

Preweighed vials

GPK011 (soil): K075

NOTE: 2ml surrogate TFT/BFB (SV2-09-17-03) added prior to analysis.

VG39K07

~~VG39K06~~ (water): K087, K089

SC 11/13/14

Method: Vg39e02.met Batch: Ek12.seq Data: Ek12.050 - [Batch: ek12.seq]

File Edit Method Batch Options Analysis Control Window Help

| Run | Sample ID | Method | Filename | Description |
|---|---|---|---|---|
| 35 | 14K075-07 100uL S | vg39e02.met | EK12.035 | |
| 36 | CVG39E02780 500/40 | vg39e02.met | EK12.036 | |
| 37 | 14K075-08 100uL S | vg39e02.met | EK12.037 | |
| 38 | IB39K1202 | vg39e02.met | EK12.038 | VIAL QC CHECK LOT# 071414-03 VWR |
| 39 | 14K075-09 100uL S | vg39e02.met | EK12.039 | |
| 40 | 14K075-10 100uL S | vg39e02.met | EK12.040 | |
| 41 | 14K075-11 100uL S | vg39e02.met | EK12.041 | |
| 42 | 14K075-12 100uL S | vg39e02.met | EK12.042 | |
| 43 | 14K075-07N 100uL S Confirmation only | vg39e02.met | EK12.043 | |
| 44 | VG39K07B 5.0ML W | vg39e02.met | EK12.044 | |
| 45 | VG39K07L 5.0ML W | vg39e02.met | EK12.045 | Conc. 500/40 |
| 46 | VG39K07C 5.0ML W | vg39e02.met | EK12.046 | |
| 47 | CVG39E02781 500/40 | vg39e02.met | EK12.047 | |
| 48 | 14K089-01 5.0ML W | vg39e02.met | EK12.048 | PH~7 |
| 49 | 14K089-02 5.0ML W | vg39e02.met | EK12.049 | PH~7 |
| 50 | 14K089-03 5.0ML W | vg39e02.met | EK12.050 | PH~7 |
| 51 | 14K087-01 5.0ML W | vg39e02.met | EK12.051 | PH<2 |
| 52 | 14K087-02 5.0ML W | vg39e02.met | EK12.052 | PH<2 |
| 53 | 14K087-03 5.0ML W | vg39e02.met | EK12.053 | PH<2 |
| 54 | 14K087-04 5.0ML W | vg39e02.met | EK12.054 | PH<2 |
| 55 | 14K087-05 5.0ML W | vg39e02.met | EK12.055 | PH<2 |
| 56 | 14K087-06 5.0ML W | vg39e02.met | EK12.056 | PH<2 |
| 57 | 14K087-07 5.0ML W | vg39e02.met | EK12.057 | PH<2 |
| 58 | CVG39E02782 500/40 | vg39e02.met | EK12.058 | |
| 59 | 14K087-07M 5.0ML W | vg39e02.met | EK12.059 | PH<2 |
| 60 | 14K087-07S 5.0ML W | vg39e02.met | EK12.060 | PH<2 |
| 61 | 14K087-08 5.0ML W | vg39e02.met | EK12.061 | PH<2 |
| 62 | 14K087-09 5.0ML W | vg39e02.met | EK12.062 | PH<2 |
| 63 | 14K087-10 5.0ML W | vg39e02.met | EK12.063 | PH<2 |
| 64 | 14K087-11 5.0ML W | vg39e02.met | EK12.064 | PH<2 |
| 65 | 14K087-12 5.0ML W | vg39e02.met | EK12.065 | PH<2 |
| 66 | 14K087-13 5.0ML W | vg39e02.met | EK12.066 | PH<2 |
| 67 | 14K087-14 5.0ML W | vg39e02.met | EK12.067 | PH<2 |
| 68 | 14K087-15 5.0ML W | vg39e02.met | EK12.068 | PH<2 |

FINAL

Instrument 1 - T-039

# LABORATORY REPORT FOR

# BATTELLE

# RED HILL PHASE 1B

METHOD 3520C/8015B
TPH

SDG#: 14K089

CASE NARRATIVE

Client : BATTELLE

Project: RED HILL PHASE 1B

SDG : 14K089

METHOD SW3520C/8015B
TPH

A total of two(2) water samples were received on 11/13/14 to be analyzed for TPH in accordance with Method SW3520C/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSK021WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DRO was within LCS QC limits in DSK021WL/DSK021WC. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : BATTELLE
Project : RED HILL PHASE 1B

SDG NO. : 14K089
Instrument ID : GCT105

WATER

| Client Sample ID | Laboratory Sample ID | Dilution Factor | % Moist | Analysis DateTime | Extraction DateTime | Sample Data FN | Calibration Data FN | Prep. Batch | Notes |
|---|---|---|---|---|---|---|---|---|---|
| MBLK1W | DSK021WB | 1 | NA | 11/18/1412:41 | 11/17/1413:30 | LK18005A | LK18003A | DSK021W | Method Blank |
| LCS1W | DSK021WL | 1 | NA | 11/18/1412:58 | 11/17/1413:30 | LK18006A | LK18003A | DSK021W | Lab Control Sample (LCS) |
| LCD1W | DSK021WC | 1 | NA | 11/18/1413:15 | 11/17/1413:30 | LK18007A | LK18003A | DSK021W | LCS Duplicate |
| HW111214-01 | K089-02 | 1 | NA | 11/18/1413:32 | 11/17/1413:30 | LK18008A | LK18003A | DSK021W | Field Sample |
| HW111214-02 | K089-03 | 1 | NA | 11/18/1413:49 | 11/17/1413:30 | LK18009A | LK18003A | DSK021W | Field Sample |

FN - Filename
% Moist - Percent Moisture

# SAMPLE RESULTS

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 11/12/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/17/14 13:30 |
| Sample ID: | HW111214-01 | Date Analyzed: | 11/18/14 13:32 |
| Lab Samp ID: | K089-02 | Dilution Factor: | 1 |
| Lab File ID: | LK18008A | Matrix : | WATER |
| Ext Btch ID: | DSK021W | % Moisture : | NA |
| Calib. Ref.: | LK18003A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | ND | 0.10 | 0.050 | 0.075 |
| ORO | ND | 0.10 | 0.050 | 0.075 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.926 | 1.000 | 92.6 | 60-130 |
| HEXACOSANE | 0.224 | 0.2500 | 89.7 | 60-130 |

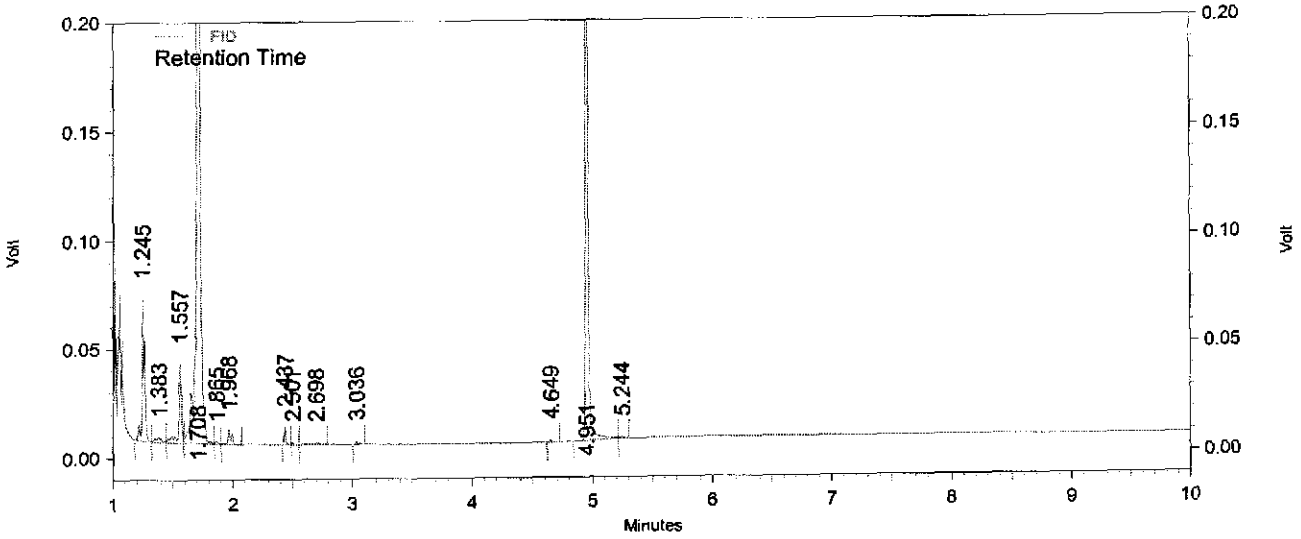
| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18008.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK17.seq** |
| **Sample ID** | **: 14K089-02** |
| **Acquired** | **: 11/18/14 13:32:30** |
| **Printed** | **: 11/19/14 09:17:58** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.708 | 1550233 | 16736.07261 | 92.628 |
| HEXACOSANE | 4.951 | 535131 | 23858.57389 | 22.429 |
| DIESEL(TOTAL) | | 185397 | 28620.13271 | 6.478 |
| DIESEL(C10-C24) | | 28351 | 27919.60062 | 1.015 |
| M.OIL(C24-C36) | | 1330 | 18035.59361 | 0.074 |
| Totals | | 2300442 | | 122.625 |




**Software Version: Version 3.3.1**

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | 11/12/14 |
| Project | : RED HILL PHASE 1B | Date Received: | 11/13/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/17/14 13:30 |
| Sample ID: | HW111214-02 | Date Analyzed: | 11/18/14 13:49 |
| Lab Samp ID: | K089-03 | Dilution Factor: | 1 |
| Lab File ID: | LK18009A | Matrix : | WATER |
| Ext Btch ID: | DSK021W | % Moisture : | NA |
| Calib. Ref.: | LK18003A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | ND | 0.10 | 0.050 | 0.075 |
| ORO | ND | 0.10 | 0.050 | 0.075 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.855 | 1.000 | 85.5 | 60-130 |
| HEXACOSANE | 0.215 | 0.2500 | 85.8 | 60-130 |

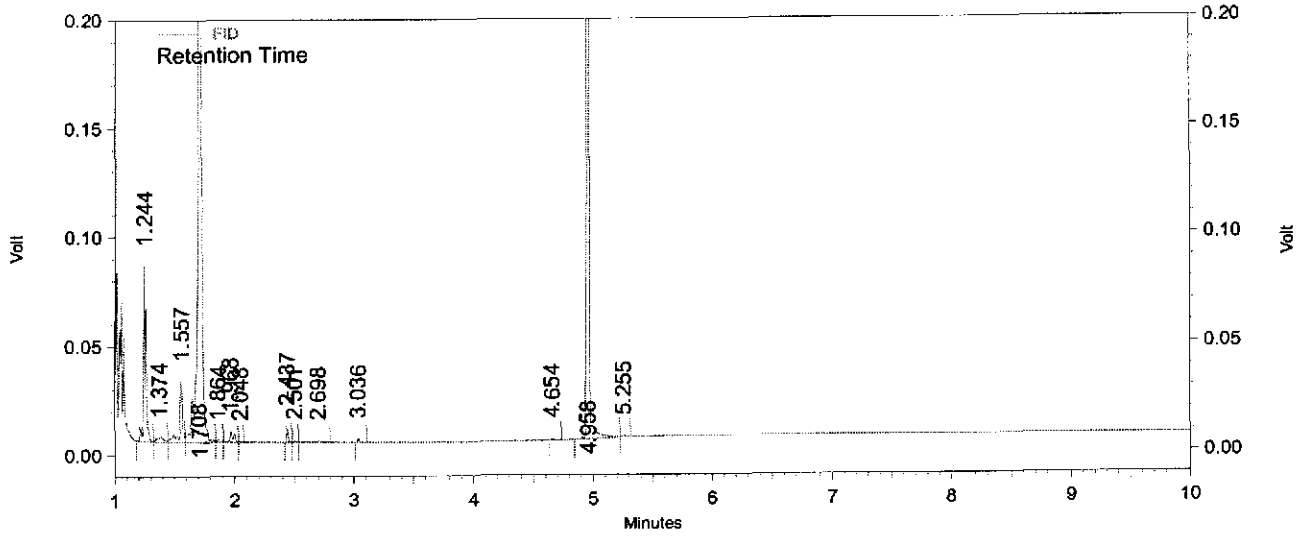
| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18009.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK17.seq** |
| **Sample ID** | **: 14K089-03** |
| **Acquired** | **: 11/18/14 13:49:34** |
| **Printed** | **: 11/19/14 09:18:04** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ppm] |
|---|---|---|---|---|
| BROMOBENZENE | 1.708 | 1430239 | 16736.07261 | 85.458 |
| HEXACOSANE | 4.958 | 511783 | 23858.57389 | 21.451 |
| DIESEL(TOTAL) | | 194843 | 28620.13271 | 6.808 |
| DIESEL(C10-C24) | | 25846 | 27919.60062 | 0.926 |
| M.OIL(C24-C36) | | 1386 | 18035.59361 | 0.077 |
| Totals | | 2164097 | | 114.720 |




**Software Version: Version 3.3.1**

# QC SUMMARIES

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

| | | | |
|---|---|---|---|
| Client | : BATTELLE | Date Collected: | NA |
| Project | : RED HILL PHASE 1B | Date Received: | 11/17/14 |
| Batch No. | : 14K089 | Date Extracted: | 11/17/14 13:30 |
| Sample ID: | MBLK1W | Date Analyzed: | 11/18/14 12:41 |
| Lab Samp ID: | DSK021WB | Dilution Factor: | 1 |
| Lab File ID: | LK18005A | Matrix : | WATER |
| Ext Btch ID: | DSK021W | % Moisture : | NA |
| Calib. Ref.: | LK18003A | Instrument ID : | GCT105 |

| PARAMETERS | RESULTS (mg/L) | LOQ (mg/L) | DL (mg/L) | LOD (mg/L) |
|---|---|---|---|---|
| DRO | ND | 0.10 | 0.050 | 0.075 |
| ORO | ND | 0.10 | 0.050 | 0.075 |

| SURROGATE PARAMETERS | RESULTS | SPK_AMT | % RECOVERY | QC LIMIT |
|---|---|---|---|---|
| BROMOBENZENE | 0.834 | 1.000 | 83.4 | 60-130 |
| HEXACOSANE | 0.233 | 0.2500 | 93.2 | 60-130 |

| Parameter | H-C Range |
|---|---|
| DRO | C10-C24 |
| ORO | C24-C36 |

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 14K089
METHOD: SW3520C/8015B

| | | | | | |
|---|---|---|---|---|---|
| MATRIX: | WATER | | | % MOISTURE: | NA |
| DILUTION FACTOR: | 1 | 1 | 1 | | |
| SAMPLE ID: | MBLK1W | | | | |
| LAB SAMP ID: | DSK021WB | DSK021WL | DSK021WC | | |
| LAB FILE ID: | LK18005A | LK18006A | LK18007A | | |
| DATE EXTRACTED: | 11/17/1413:30 | 11/17/1413:30 | 11/17/1413:30 | DATE COLLECTED: | NA |
| DATE ANALYZED: | 11/18/1412:41 | 11/18/1412:58 | 11/18/1413:15 | DATE RECEIVED: | 11/17/14 |
| PREP. BATCH: | DSK021W | DSK021W | DSK021W | | |
| CALIB. REF: | LK18003A | LK18003A | LK18003A | | |

ACCESSION:

| PARAMETER | BLNK RSLT (mg/L) | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | RPD ( % ) | QC LIMIT ( % ) | MAX RPD ( % ) |
|---|---|---|---|---|---|---|---|---|---|---|
| DRO | ND | 5.00 | 4.70 | 94 | 5.00 | 4.71 | 94 | 0 | 60-130 | 30 |

| SURROGATE PARAMETER | SPIKE AMT (mg/L) | BS RSLT (mg/L) | BS % REC | SPIKE AMT (mg/L) | BSD RSLT (mg/L) | BSD % REC | QC LIMIT ( % ) |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 1.00 | 0.934 | 93 | 1.00 | 0.967 | 97 | 60-130 |
| Hexacosane | 0.250 | 0.247 | 99 | 0.250 | 0.253 | 101 | 60-130 |

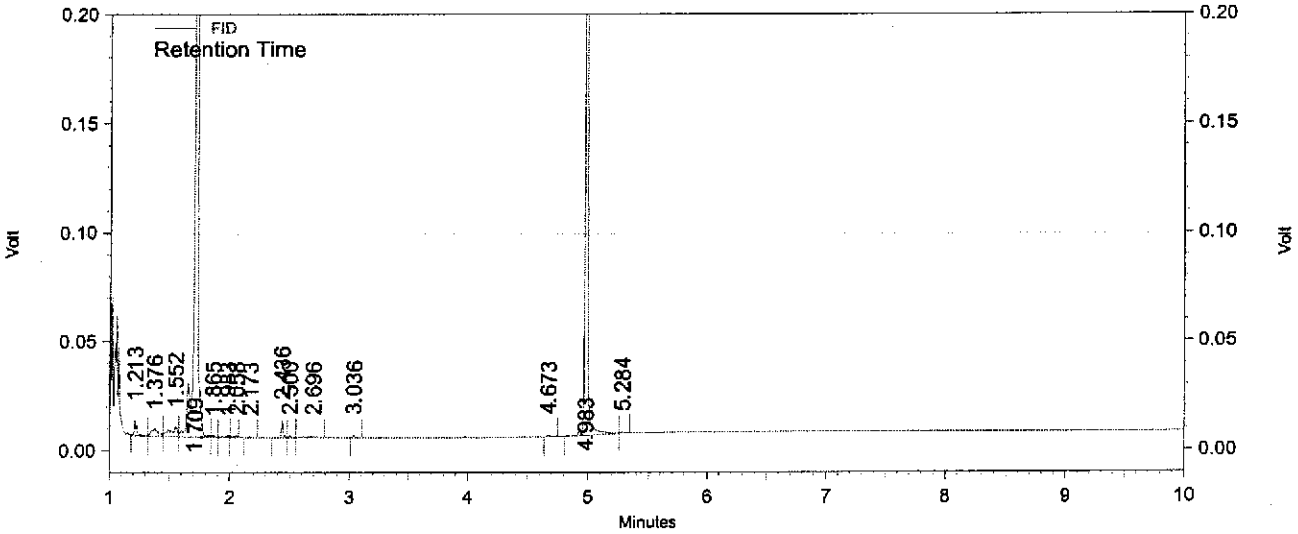
# QC DATA

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18005.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK17.seq** |
| **Sample ID** | **: DSK021WB** |
| **Acquired** | **: 11/18/14 12:41:26** |
| **Printed** | **: 11/19/14 10:05:42** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.709 | 1395408 | 16736.07261 | 83.377 |
| HEXACOSANE | 4.983 | 556030 | 23858.57389 | 23.305 |
| DIESEL(TOTAL) | | 65128 | 28620.13271 | 2.276 |
| DIESEL(C10-C24) | | 19419 | 27919.60062 | 0.696 |
| M.OIL(C24-C36) | | 1257 | 18035.59361 | 0.070 |
| M.OIL(C24-C40) | | 1257 | 18035.59361 | 0.070 |
| Totals | | 2038499 | | 109.793 |



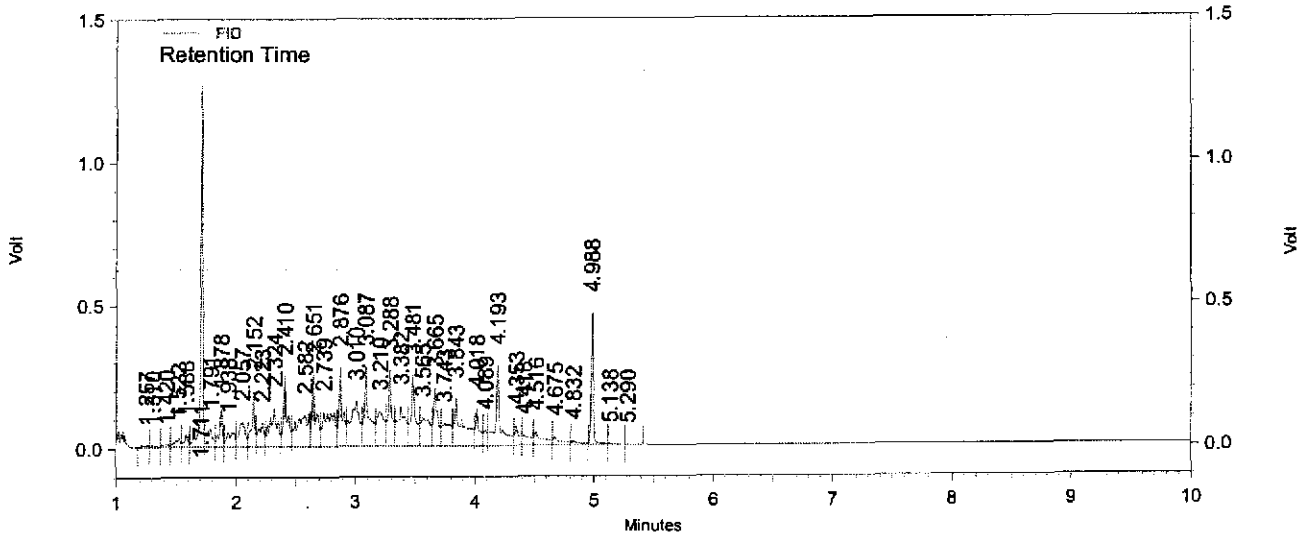

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18006.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK17.seq** |
| **Sample ID** | **: DSK021WL** |
| **Acquired** | **: 11/18/14 12:58:31** |
| **Printed** | **: 11/19/14 09:17:34** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.711 | 1563588 | 16736.07261 | 93.426 |
| HEXACOSANE | 4.988 | 589050 | 23858.57389 | 24.689 |
| DIESEL(TOTAL) | | 13669994 | 28620.13271 | 477.636 |
| DIESEL(C10-C24) | | 13130573 | 27919.60062 | 470.299 |
| M.OIL(C24-C36) | | 82281 | 18035.59361 | 4.562 |
| Totals | | 29035486 | | 1070.613 |



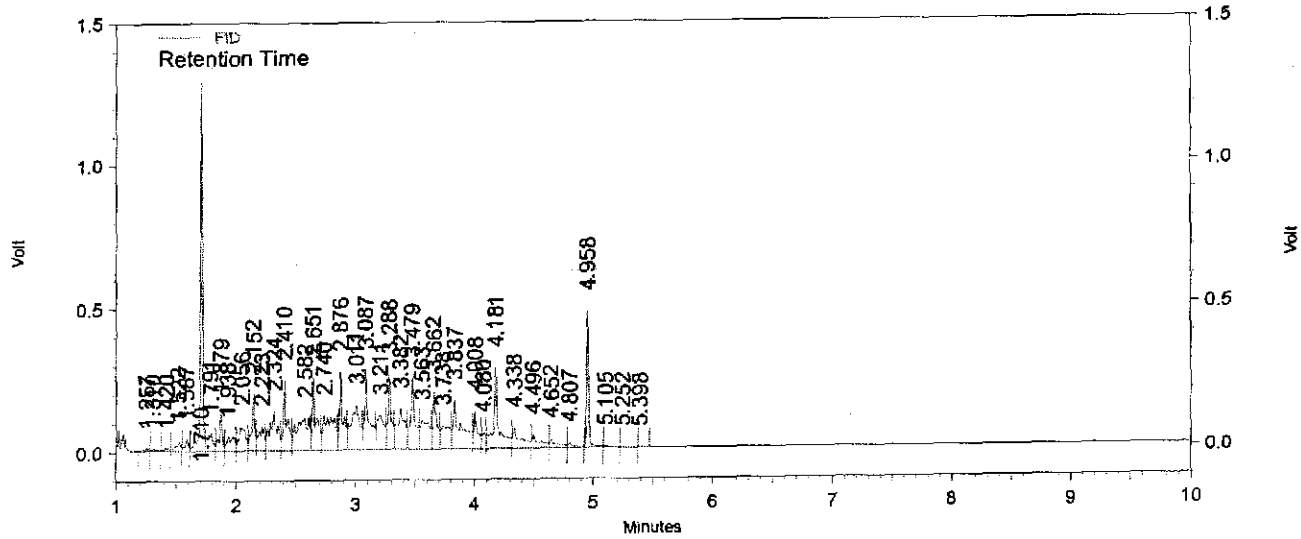

**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18007.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK17.seq** |
| **Sample ID** | **: DSK021WC** |
| **Acquired** | **: 11/18/14 13:15:31** |
| **Printed** | **: 11/19/14 09:17:41** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.710 | 1618988 | 16736.07261 | 96.736 |
| HEXACOSANE | 4.958 | 602747 | 23858.57389 | 25.263 |
| DIESEL(TOTAL) | | 13704859 | 28620.13271 | 478.854 |
| DIESEL(C10-C24) | | 13149699 | 27919.60062 | 470.984 ✓ |
| M.OIL(C24-C36) | | 87145 | 18035.59361 | 4.832 |
| Totals | | 29163438 | | 1076.670 |




**Software Version: Version 3.3.1**

# INITIAL CALIBRATIONS

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LK05003A 11/05/14 09:50
LFID & Datetime: LK05004A 11/05/14 10:07
LFID & Datetime: LK05005A 11/05/14 10:24
LFID & Datetime: LK05006A 11/05/14 10:41
LFID & Datetime: LK05007A 11/05/14 10:58
LFID & Datetime: LK05008A 11/05/14 11:15
LFID & Datetime: LK05009A 11/05/14 11:32
CONC UNIT: ppm

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 1.00X | 2.00X | 10.00X | 20.00X | 100.00X | 300.00X | 600.00X | MEAN | %RSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | 5.00 | 30684 | 33548 | 29932 | 29947 | 26877 | 24217 | 25136 | 28620.1 | 11.6 | ✓ |
| DIESEL(C10-C24) | 5.00 | 30428 | 32621 | 29320 | 29249 | 26041 | 23422 | 24357 | 27919.6 | 12.1 | ✓ |
| DIESEL(C10-C28) | 5.00 | 30428 | 32683 | 29345 | 29299 | 26090 | 23472 | 24413 | 27961.5 | 12.1 | ✓ |
| DIESEL(C10-C25) | 5.00 | 30428 | 32683 | 29345 | 29299 | 26083 | 23465 | 24405 | 27958.5 | 12.1 | ✓ |
| DIESEL(C9-C24) | 5.00 | 30684 | 33302 | 29851 | 29674 | 26513 | 23703 | 24787 | 28359.1 | 12.2 | ✓ |
| DIESEL(C9-C25) | 5.00 | 30684 | 33365 | 29876 | 29715 | 26544 | 23733 | 24820 | 28390.9 | 12.2 | ✓ |
| DIESEL(C10-C36) | 5.00 | 30428 | 32683 | 29345 | 29299 | 26093 | 23474 | 24417 | 27962.7 | 12.1 | ✓ |
| DIESEL(C10-C40) | 5.00 | 30428 | 32683 | 29345 | 29299 | 26093 | 23474 | 24417 | 27962.7 | 12.1 | ✓ |

| SURROGATE | X | 0.00X | 1.00X | 2.00X | 3.00X | 4.00X | 5.00X | 11.00X | MEAN | %RSD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BROMOBENZENE | 20.00 | 0 | 16322 | 16474 | 16110 | 17270 | 17167 | 17074 | 16736.1 | 2.9 | ✓ |
| HEXACOSANE | 5.00 | 0 | 23912 | 24484 | 24145 | 24476 | 23217 | 22918 | 23858.6 | 2.8 | ✓ |

DSD5K05.MET

AS 11/06/14



5015

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : 05
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LK05003A 11/05/14 09:50
LFID & Datetime: LK05004A 11/05/14 10:07
LFID & Datetime: LK05005A 11/05/14 10:24
LFID & Datetime: LK05006A 11/05/14 10:41
LFID & Datetime: LK05007A 11/05/14 10:58
LFID & Datetime: LK05008A 11/05/14 11:15
LFID & Datetime: LK05009A 11/05/14 11:32

| COMPOUND | RT OF STANDARDS (MIN) 1.0X | 2.0X | 10.0X | 20.0X | 100.0X | 300.0X | 600.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C24) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C28) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C25) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C9-C24) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C9-C25) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| DIESEL(C10-C40) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| SURROGATE | 0.0X | 1.0X | 2.0X | 3.0X | 4.0X | 5.0X | 11.0X | RT | FROM | TO | WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BROMOBENZENE | 0.000 | 1.712 | 1.712 | 1.712 | 1.713 | 1.711 | 1.715 | 1.712 | 1.709 | 1.715 | 0.003 |
| HEXACOSANE | 0.000 | 5.006 | 4.989 | 5.002 | 4.993 | 5.003 | 4.997 | 4.998 | 4.950 | 5.046 | 0.048 |

DSD5K05.MET

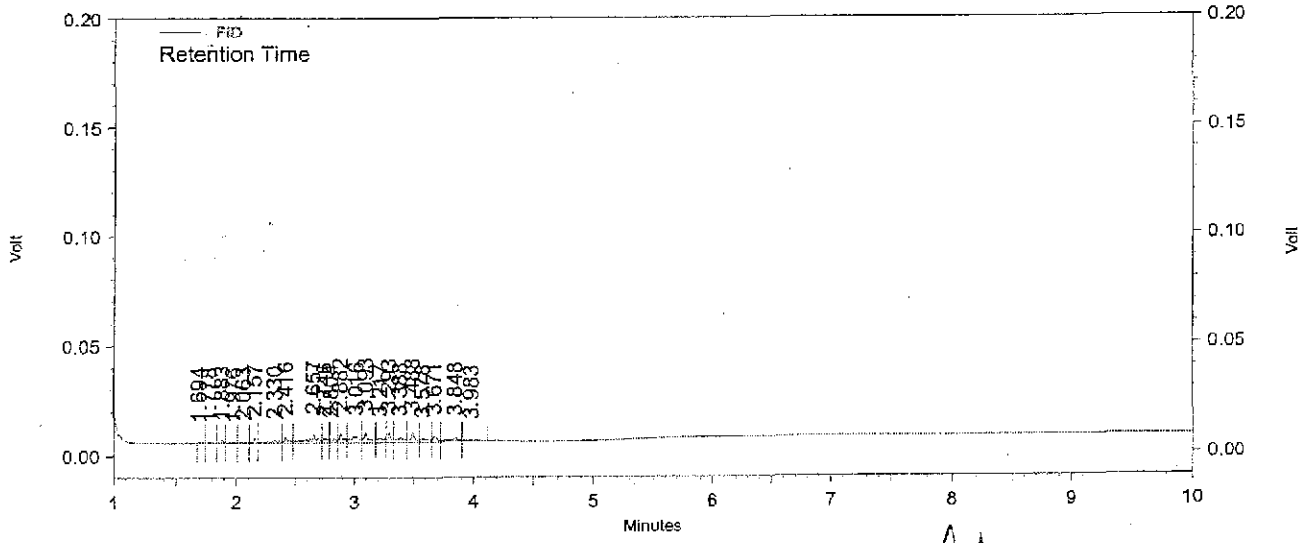
AS
11/06/14

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05003.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0501 DSL 5PPM** |
| **Acquired** | **: 11/05/14 09:50:32** |
| **Printed** | **: 11/06/14 09:49:00** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| DIESEL(TOTAL) | | 153419 | 28620.13271 | 5.000 CAL |
| DIESEL(C10-C24) | | 152142 | 27919.60062 | 5.000 CAL |
| DIESEL(C10-C28) | | 152142 | 27961.51805 | 5.000 CAL |
| DIESEL(C10-C25) | | 152142 | 27958.48881 | 5.000 CAL |
| DIESEL(C9-C24) | | 153419 | 28359.12910 | 5.000 CAL |
| DIESEL(C9-C25) | | 153419 | 28390.94238 | 5.000 CAL |
| DIESEL(C10-C36) | | 152142 | 27962.70357 | 5.000 CAL |
| DIESEL(C10-C40) | | 152142 | 27962.70357 | 5.000 CAL |
| Totals | | 1220967 | | 40.000 CAL |




11/06/14

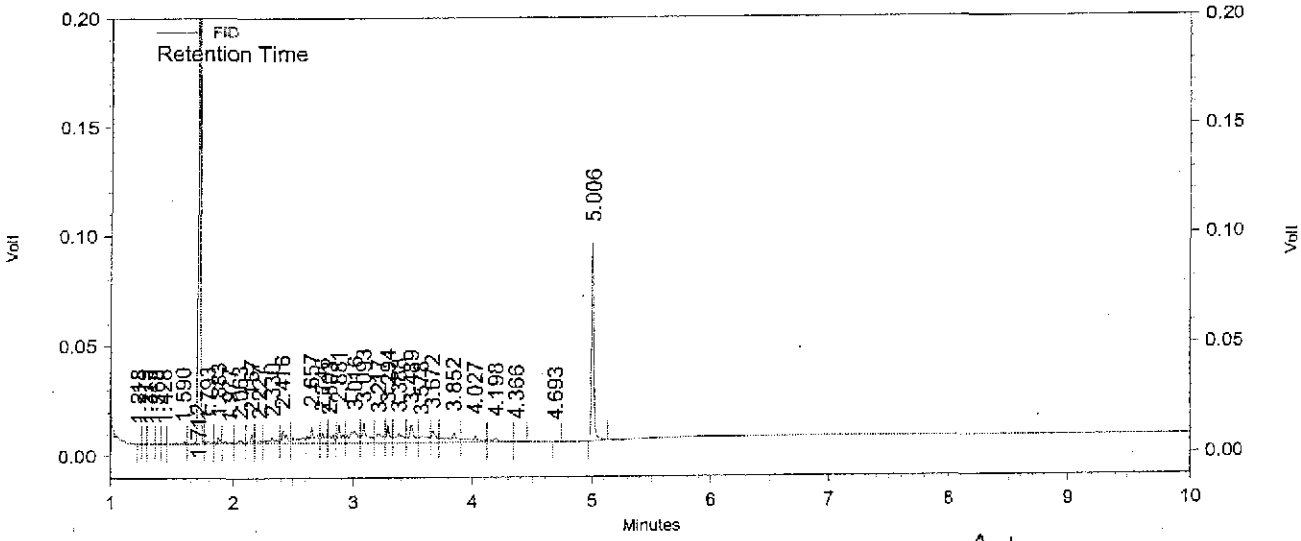
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05004.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0502 DSL 10/20/5PPM** |
| **Acquired** | **: 11/05/14 10:07:27** |
| **Printed** | **: 11/06/14 09:49:07** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.712 | 326432 | 16736.07261 | 20.000 CAL |
| HEXACOSANE | 5.006 | 119562 | 23858.57389 | 5.000 CAL |
| DIESEL(TOTAL) | | 335480 | 28620.13271 | 10.000 CAL |
| DIESEL(C10-C24) | | 326205 | 27919.60062 | 10.000 CAL |
| DIESEL(C10-C28) | | 326834 | 27961.51805 | 10.000 CAL |
| DIESEL(C10-C25) | | 326834 | 27958.48881 | 10.000 CAL |
| DIESEL(C9-C24) | | 333020 | 28359.12910 | 10.000 CAL |
| DIESEL(C9-C25) | | 333649 | 28390.94238 | 10.000 CAL |
| DIESEL(C10-C36) | | 326834 | 27962.70357 | 10.000 CAL |
| DIESEL(C10-C40) | | 326834 | 27962.70357 | 10.000 CAL |
| Totals | | 3081684 | | 105.000 CAL |




AS 11/06/14

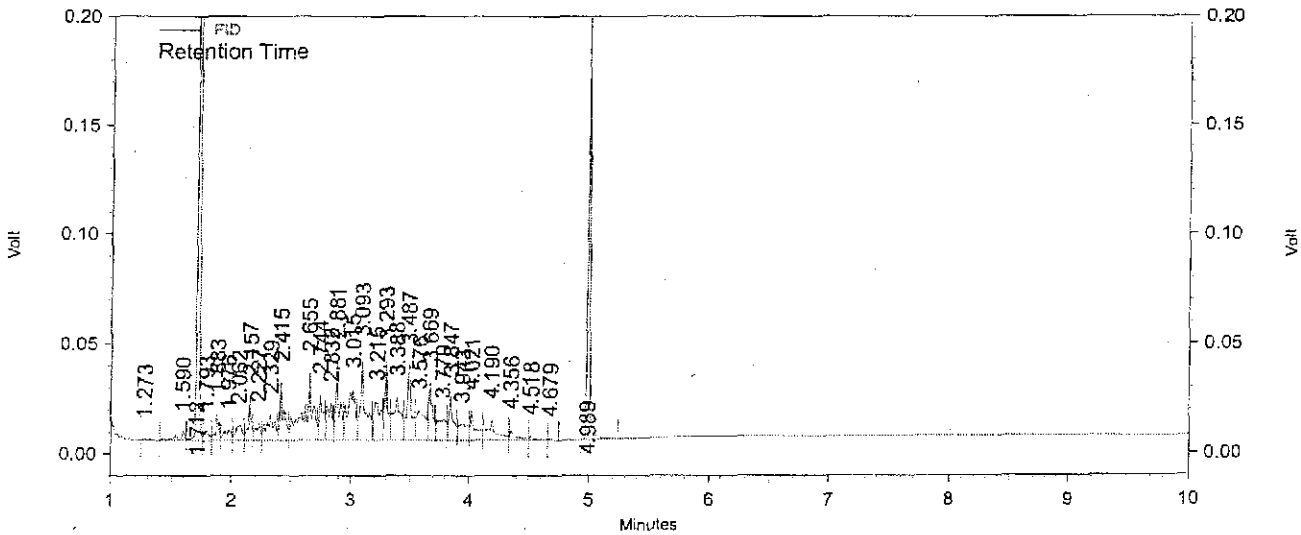
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05005.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0503 DSL 50/40/10PPM** |
| **Acquired** | **: 11/05/14 10:24:37** |
| **Printed** | **: 11/06/14 09:49:15** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.712 | 658957 | 16736.07261 | 40.000 CAL |
| HEXACOSANE | 4.989 | 244835 | 23858.57389 | 10.000 CAL |
| DIESEL(TOTAL) | | 1496602 | 28620.13271 | 50.000 CAL |
| DIESEL(C10-C24) | | 1465992 | 27919.60062 | 50.000 CAL |
| DIESEL(C10-C28) | | 1467244 | 27961.51805 | 50.000 CAL |
| DIESEL(C10-C25) | | 1467244 | 27958.48881 | 50.000 CAL |
| DIESEL(C9-C24) | | 1492529 | 28359.12910 | 50.000 CAL |
| DIESEL(C9-C25) | | 1493781 | 28390.94238 | 50.000 CAL |
| DIESEL(C10-C36) | | 1467244 | 27962.70357 | 50.000 CAL |
| DIESEL(C10-C40) | | 1467244 | 27962.70357 | 50.000 CAL |
| Totals | | 12721672 | | 450.000 CAL |

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11/06/14

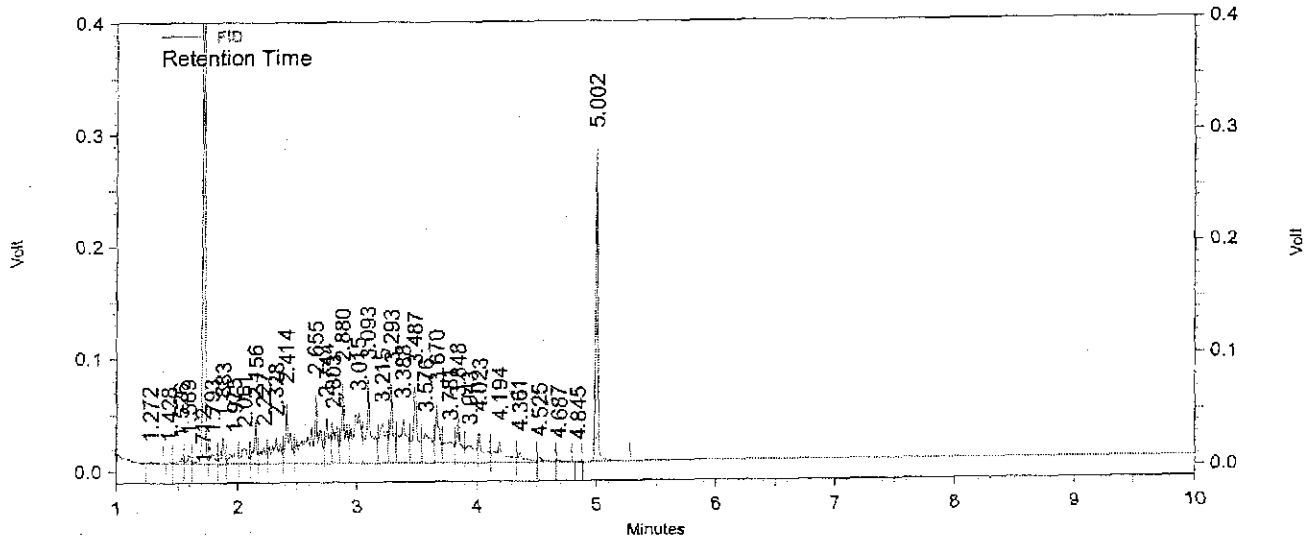
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05006.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0504 DSL 100/60/15PPM** |
| **Acquired** | **: 11/05/14 10:41:30** |
| **Printed** | **: 11/06/14 09:49:27** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.712 | 966609 | 16736.07261 | 60.000 CAL |
| HEXACOSANE | 5.002 | 362168 | 23858.57389 | 15.000 CAL |
| DIESEL(TOTAL) | | 2994680 | 28620.13271 | 100.000 CAL |
| DIESEL(C10-C24) | | 2924901 | 27919.60062 | 100.000 CAL |
| DIESEL(C10-C28) | | 2929916 | 27961.51805 | 100.000 CAL |
| DIESEL(C10-C25) | | 2929916 | 27958.48881 | 100.000 CAL |
| DIESEL(C9-C24) | | 2967397 | 28359.12910 | 100.000 CAL |
| DIESEL(C9-C25) | | 2971468 | 28390.94238 | 100.000 CAL |
| DIESEL(C10-C36) | | 2929916 | 27962.70357 | 100.000 CAL |
| DIESEL(C10-C40) | | 2929916 | 27962.70357 | 100.000 CAL |
| Totals | | 24906887 | | 875.000 CAL |

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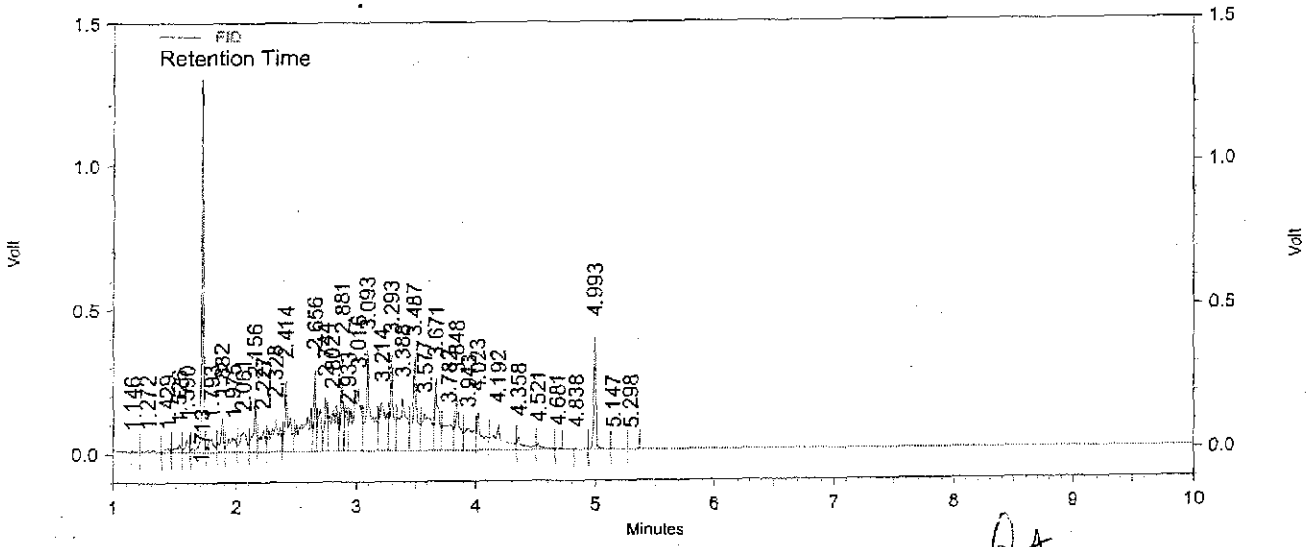
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05007.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0505 DSL 500/80/20PPM** |
| **Acquired** | **: 11/05/14 10:58:28** |
| **Printed** | **: 11/06/14 09:49:41** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.713 | 1381565 | 16736.07261 | 80.000 CAL |
| HEXACOSANE | 4.993 | 489517 | 23858.57389 | 20.000 CAL |
| DIESEL(TOTAL) | | 13438668 | 28620.13271 | 500.000 CAL |
| DIESEL(C10-C24) | | 13020338 | 27919.60062 | 500.000 CAL |
| DIESEL(C10-C28) | | 13045121 ✓ | 27961.51805 | 500.000 CAL |
| DIESEL(C10-C25) | | 13041741 ✓ | 27958.48881 | 500.000 CAL |
| DIESEL(C9-C24) | | 13256375 | 28359.12910 | 500.000 CAL |
| DIESEL(C9-C25) | | 13272243 | 28390.94238 | 500.000 CAL |
| DIESEL(C10-C36) | | 13046358 | 27962.70357 | 500.000 CAL |
| DIESEL(C10-C40) | | 13046358 ✓ | 27962.70357 | 500.000 CAL |
| Totals | | 107038284 | | 4100.000 CAL |

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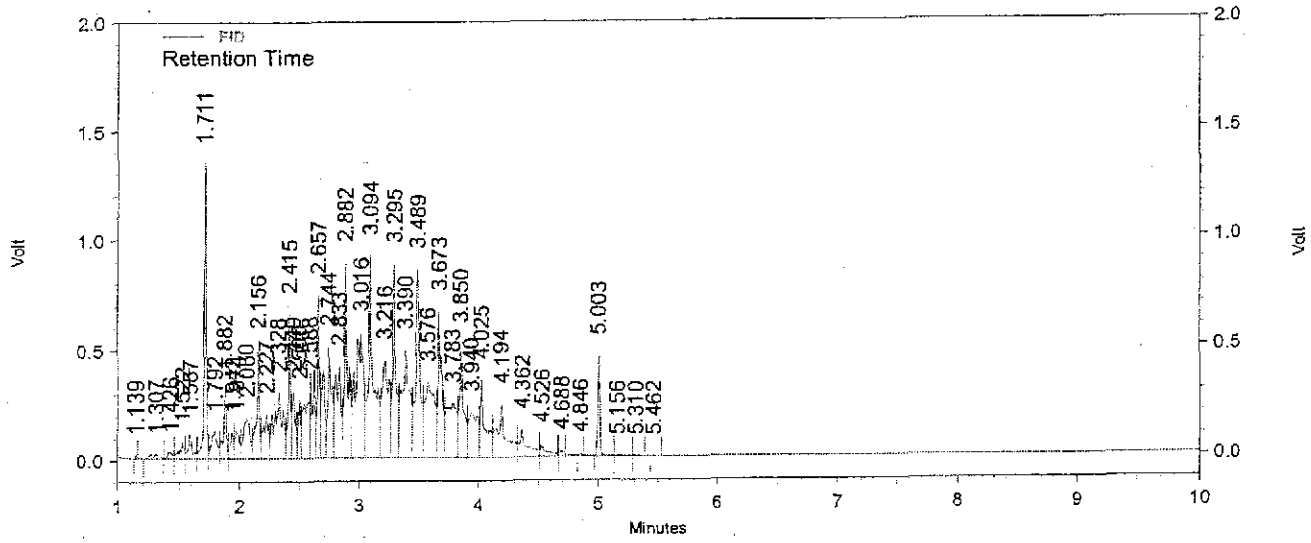
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05008.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0506 DSL 1500/100/25PPM** |
| **Acquired** | **: 11/05/14 11:15:24** |
| **Printed** | **: 11/06/14 09:49:56** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.711 | 1716683 ✓ | 16736.07261 | 100.000 CAL |
| HEXACOSANE | 5.003 | 580434 ✓ | 23858.57389 | 25.000 CAL |
| DIESEL(TOTAL) | | 36325296 ✓ | 28620.13271 | 1500.000 CAL |
| DIESEL(C10-C24) | | 35132708 ✓ | 27919.60062 | 1500.000 CAL |
| DIESEL(C10-C28) | | 35207349 | 27961.51805 | 1500.000 CAL |
| DIESEL(C10-C25) | | 35198098 | 27958.48881 | 1500.000 CAL |
| DIESEL(C9-C24) | | 35555234 ✓ | 28359.12910 | 1500.000 CAL |
| DIESEL(C9-C25) | | 35599912 | 28390.94238 | 1500.000 CAL |
| DIESEL(C10-C36) | | 35210674 | 27962.70357 | 1500.000 CAL |
| DIESEL(C10-C40) | | 35210674 | 27962.70357 | 1500.000 CAL |
| Totals | | 285737062 | | 12125.000 CAL |

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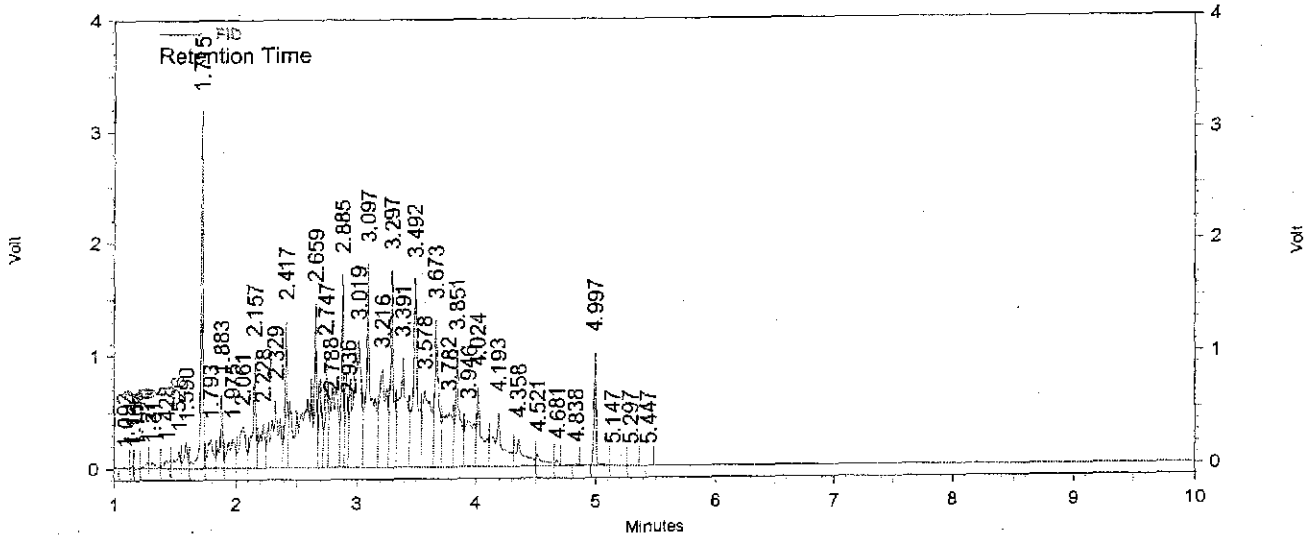
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LK05\LK05009.dat |
| Method | : D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LK05.seq |
| Sample ID | : DSD5K0507 DSL 3000/220/55PPM |
| Acquired | : 11/05/14 11:32:14 |
| Printed | : 11/06/14 09:51:33 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.715 | 3756361 | 16736.07261 | 220.000 CAL |
| HEXACOSANE | 4.997 | 1260479 | 23858.57389 | 55.000 CAL |
| DIESEL(TOTAL) | | 75408267 | 28620.13271 | 3000.000 CAL |
| DIESEL(C10-C24) | | 73070919 | 27919.60062 | 3000.000 CAL |
| DIESEL(C10-C28) | | 73238935 | 27961.51805 | 3000.000 CAL |
| DIESEL(C10-C25) | | 73214103 | 27958.48881 | 3000.000 CAL |
| DIESEL(C9-C24) | | 74361943 | 28359.12910 | 3000.000 CAL |
| DIESEL(C9-C25) | | 74459508 | 28390.94238 | 3000.000 CAL |
| DIESEL(C10-C36) | | 73249759 | 27962.70357 | 3000.000 CAL |
| DIESEL(C10-C40) | | 73249759 | 27962.70357 | 3000.000 CAL |
| Totals | | 595270033 | | 24275.000 CAL |

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**Software Version: Version 3.3.1**

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LK05011A 11/05/14 12:06
LFID & Datetime: LK05012A 11/05/14 12:23
LFID & Datetime: LK05013A 11/05/14 12:39
LFID & Datetime: LK05014A 11/05/14 12:56
LFID & Datetime: LK05015A 11/05/14 13:13
LFID & Datetime: LK05016A 11/05/14 13:30
CONC UNIT: ppm

| COMPOUND | CONC X | CALIBRATION FACTORS (AREA)/UNIT 2.00X | 10.00X | 20.00X | 100.00X | 300.00X | 600.00X | MEAN | %RSD | |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | 5.00 | 25279 | 28997 | 26507 | 27549 | 24954 | 27295 | 26763.6 | 5.6 | ✓ |
| M.OIL(C18-C36) | 5.00 | 21271 | 21529 | 20230 | 22087 | 18839 | 21396 | 20892.0 | 5.6 | ✓ |
| M.OIL(C24-C36) | 5.00 | 19438 | 18662 | 17110 | 18899 | 16149 | 17956 | 18035.6 | 6.8 | ✓ |
| M.OIL(C24-C40) | 5.00 | 19438 | 18662 | 17110 | 18899 | 16149 | 17956 | 18035.6 | 6.8 | ✓ |

DSD5K05.MET

AS 11/06/14

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
LFID & Datetime: LK05011A 11/05/14 12:06
LFID & Datetime: LK05012A 11/05/14 12:23
LFID & Datetime: LK05013A 11/05/14 12:39
LFID & Datetime: LK05014A 11/05/14 12:56
LFID & Datetime: LK05015A 11/05/14 13:13
LFID & Datetime: LK05016A 11/05/14 13:30

| COMPOUND | RT OF STANDARDS (MIN) 2.0X | 10.0X | 20.0X | 100.0X | 300.0X | 600.0X | MEAN RT | RT WINDOW FROM | TO | RTWINDOW WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C18-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C24-C36) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| M.OIL(C24-C40) | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

DSD5K05.MET

As
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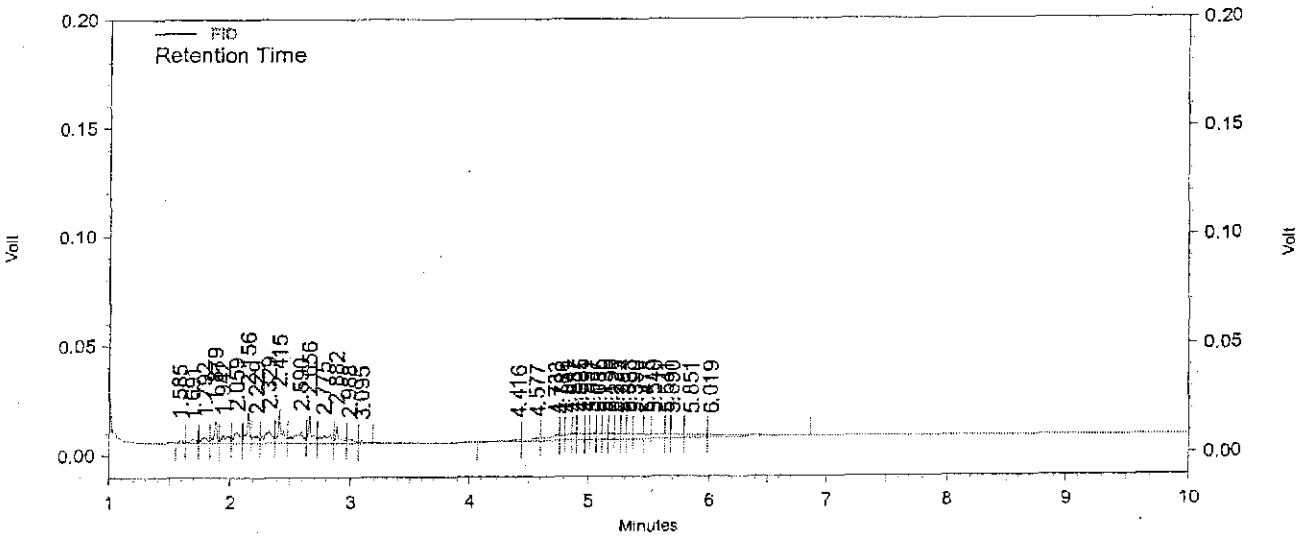
**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05011.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0508 JP5/5W30 10/10PPM** |
| **Acquired** | **: 11/05/14 12:06:05** |
| **Printed** | **: 11/06/14 09:51:46** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 252786 ✓ | 26763.57150 | 10.000 CAL |
| M.OIL(C18-C36) | | 212707 ✓ | 20892.01950 | 10.000 CAL |
| M.OIL(C24-C36) | | 194381 ✓ | 18035.59361 | 10.000 CAL |
| M.OIL(C24-C40) | | 194381 | 18035.59361 | 10.000 CAL |
| Totals | | 854255 | | 40.000 CAL |

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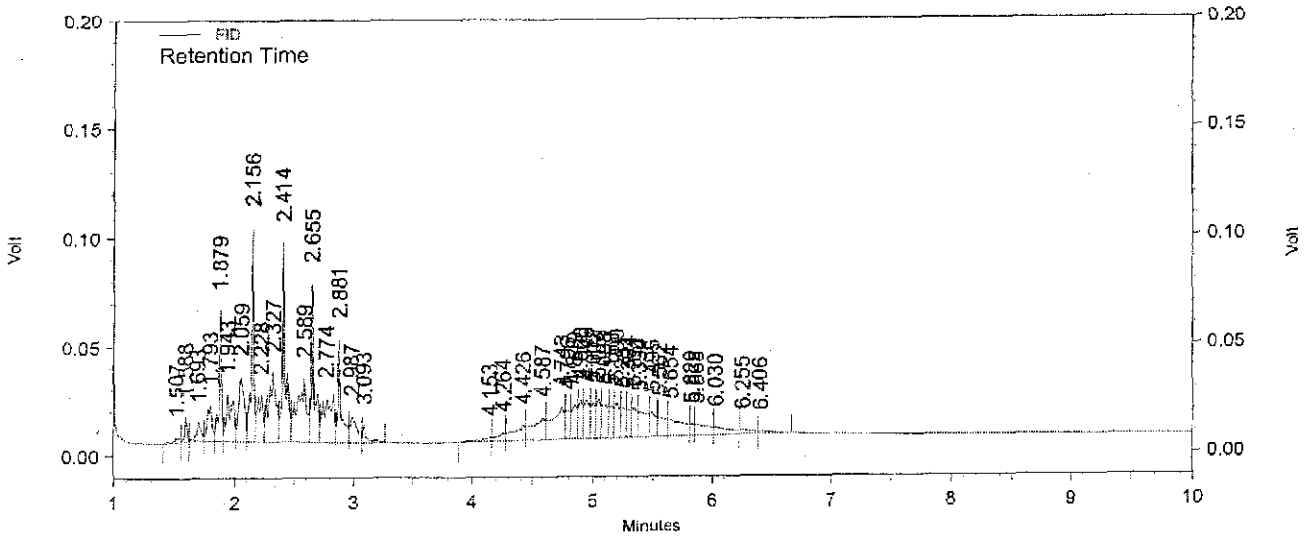
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05012.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0509 JP5/5W30 50/50PPM** |
| **Acquired** | **: 11/05/14 12:23:02** |
| **Printed** | **: 11/06/14 09:51:51** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 1449845 ✓ | 26763.57150 | 50.000 CAL |
| M.OIL(C18-C36) | | 1076439 ✓ | 20892.01950 | 50.000 CAL |
| M.OIL(C24-C36) | | 933084 ✓ | 18035.59361 | 50.000 CAL |
| M.OIL(C24-C40) | | 933084 ✓ | 18035.59361 | 50.000 CAL |
| Totals | | 4392452 | | 200.000 CAL |

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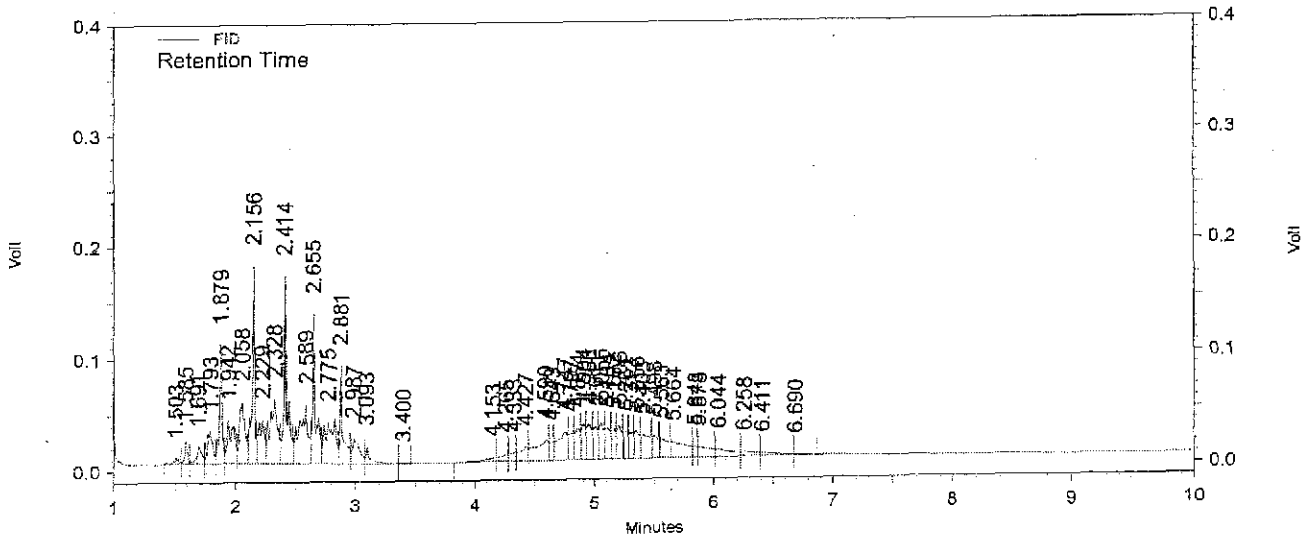
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LK05\LK05013.dat |
| Method | : D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LK05.seq |
| Sample ID | : DSD5K0510 JP5/5W30 100/100PPM |
| Acquired | : 11/05/14 12:39:58 |
| Printed | : 11/06/14 09:52:06 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 2650748 | 26763.57150 | 100.000 CAL |
| M.OIL(C18-C36) | | 2023033 | 20892.01950 | 100.000 CAL |
| M.OIL(C24-C36) | | 1710977 | 18035.59361 | 100.000 CAL |
| M.OIL(C24-C40) | | 1710977 | 18035.59361 | 100.000 CAL |
| Totals | | 8095735 | | 400.000 CAL |

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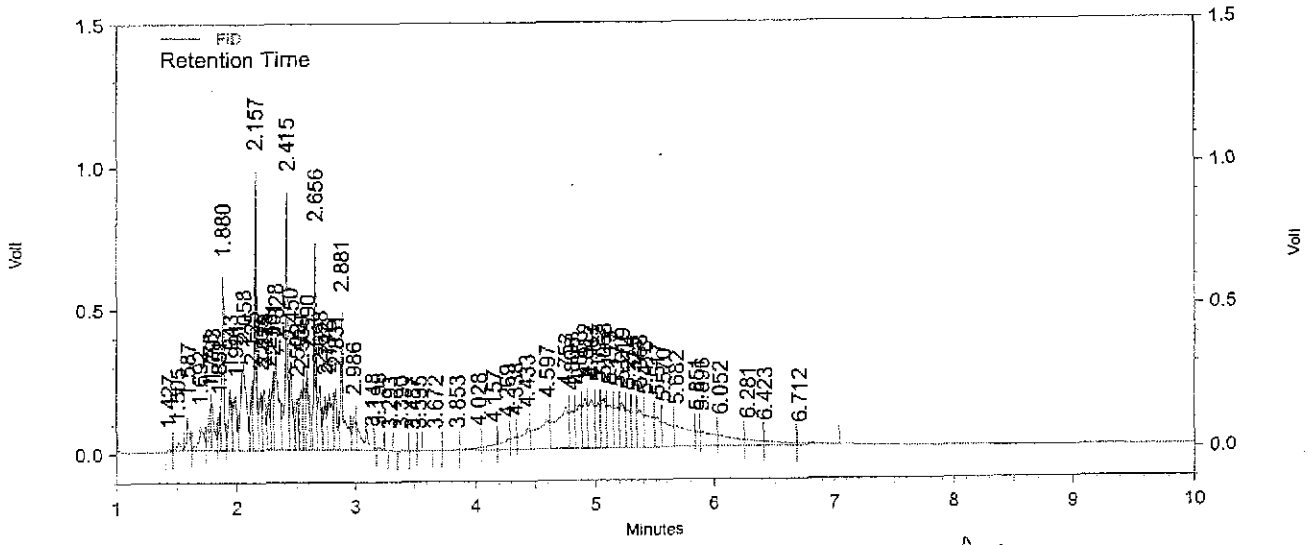
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05014.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0511 JP5/5W30 500/500PPM** |
| **Acquired** | **: 11/05/14 12:56:55** |
| **Printed** | **: 11/06/14 09:52:18** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 13774736 ✓ | 26763.57150 | 500.000 CAL |
| M.OIL(C18-C36) | | 11043302 ✓ | 20892.01950 | 500.000 CAL |
| M.OIL(C24-C36) | | 9449693 ✓ | 18035.59361 | 500.000 CAL |
| M.OIL(C24-C40) | | 9449693 ✓ | 18035.59361 | 500.000 CAL |
| Totals | | 43717424 | | 2000.000 CAL |

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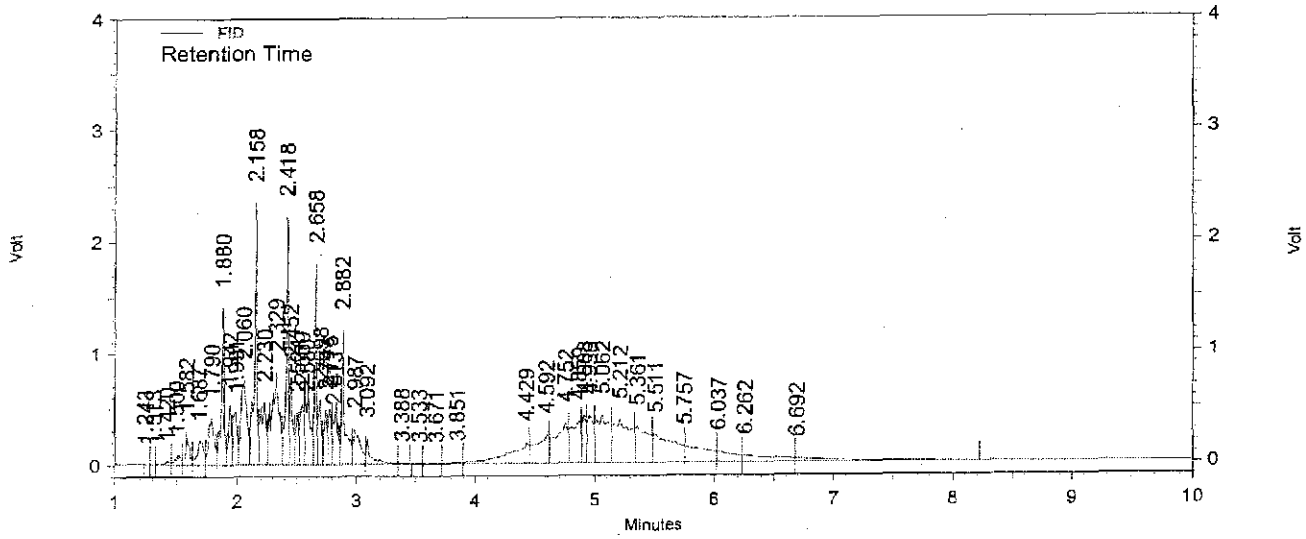
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05015.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0512 JP5/5W30 1500/1500PPM** |
| **Acquired** | **: 11/05/14 13:13:54** |
| **Printed** | **: 11/06/14 09:52:32** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 37431293 ✓ | 26763.57150 | 1500.000 CAL |
| M.OIL(C18-C36) | | 28258896 ✓ | 20892.01950 | 1500.000 CAL |
| M.OIL(C24-C36) | | 24223446 ✓ | 18035.59361 | 1500.000 CAL |
| M.OIL(C24-C40) | | 24223446 ✓ | 18035.59361 | 1500.000 CAL |
| Totals | | 114137081 | | 6000.000 CAL |

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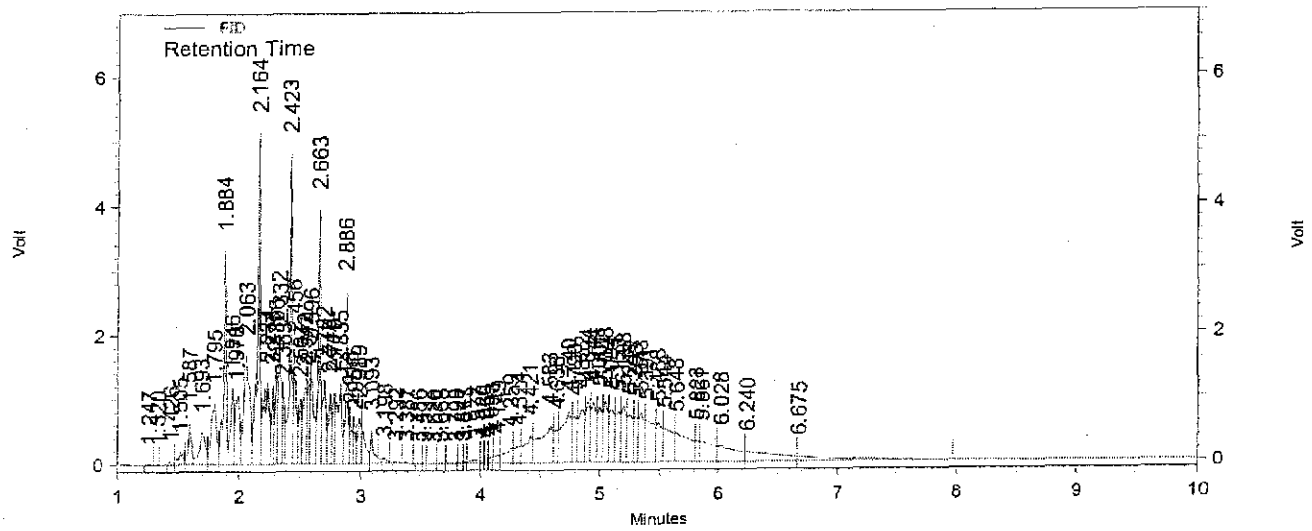
**Software Version: Version 3.3.1**

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05016.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DSD5K0513 JP5/5W30 3000/3000PPM** |
| **Acquired** | **: 11/05/14 13:30:48** |
| **Printed** | **: 11/06/14 09:52:46** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 81884345 | 26763.57150 | 3000.000 CAL |
| M.OIL(C18-C36) | | 64189317 | 20892.01950 | 3000.000 CAL |
| M.OIL(C24-C36) | | 53866985 | 18035.59361 | 3000.000 CAL |
| M.OIL(C24-C40) | | 53866985 | 18035.59361 | 3000.000 CAL |
| Totals | | 253807632 | | 12000.000 CAL |

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**Software Version: Version 3.3.1**

# SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LK05007A 11/05/2014 10:58
Conc Cont LFID & Datetime: LK05010A 11/05/2014 11:49
CONC UNIT : ppm

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 28620.1 | 14475834 | 505.79 | 1 | | 15 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 27919.6 | 13846358 | 495.94 | -1 | | 15 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 27961.5 | 13919850 | 497.82 | -0 | | 15 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 27958.5 | 13905021 | 497.35 | -1 | | 15 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 28359.1 | 14166762 | 499.55 | -0 | | 15 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 28390.9 | 14225425 | 501.05 | 0 | | 15 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 27962.7 | 13924214 | 497.96 | -0 | | 15 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 27962.7 | 13924214 | 497.96 | -0 | | 15 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.713 | 1.710 | 1.716 | 80.0 | 16736.1 | 1381725 | 82.56 | 3 | | 15 |
| HEXACOSANE | 4.990 | 4.942 | 5.038 | 20.0 | 23858.6 | 521606 | 21.86 | 9 | | 15 |

DSD5K05.MET

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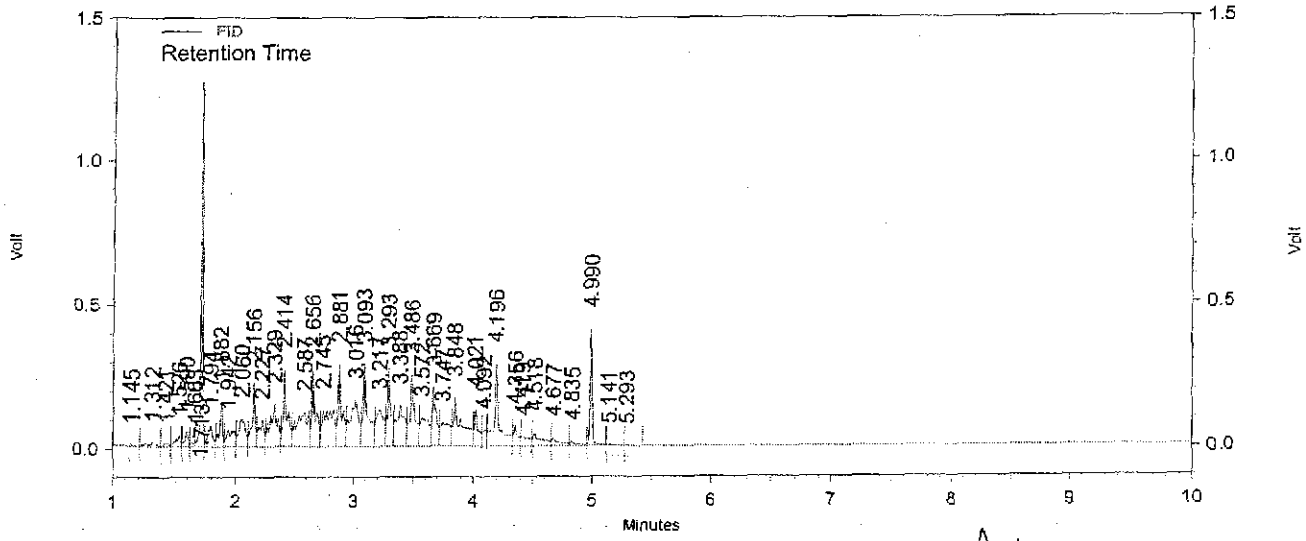
**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05010.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: IDSD5K0501 DSL 500/80/20PPM** |
| **Acquired** | **: 11/05/14 11:49:11** |
| **Printed** | **: 11/06/14 09:04:57** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.713 | 1381725 | 16736.07261 | 82.560 |
| HEXACOSANE | 4.990 | 521606 | 23858.57389 | 21.862 |
| DIESEL(TOTAL) | | 14475834 | 28620.13271 | 505.792 |
| DIESEL(C10-C24) | | 13846358 | 27919.60062 | 495.937 |
| DIESEL(C10-C28) | | 13919850 | 27961.51805 | 497.822 |
| DIESEL(C10-C25) | | 13905021 | 27958.48881 | 497.345 |
| DIESEL(C9-C24) | | 14166762 | 28359.12910 | 499.549 |
| DIESEL(C9-C25) | | 14225425 | 28390.94238 | 501.055 |
| DIESEL(C10-C36) | | 13924214 | 27962.70357 | 497.957 |
| DIESEL(C10-C40) | | 13924214 | 27962.70357 | 497.957 |
| Totals | | 114291009 | | 4097.835 |




AS 11/06/14

**Software Version: Version 3.3.1**

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LK05014A 11/05/2014 12:56
Conc Cont LFID & Datetime: LK05017A 11/05/2014 13:47
CONC UNIT : ppm

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 26763.6 | 11381114 | 425.25 | -15 | | 15 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 20892.0 | 9825630 | 470.30 | -6 | | 15 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 18035.6 | 8414955 | 466.58 | -7 | | 15 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 18035.6 | 8414955 | 466.58 | -7 | | 15 |

DSD5K05.MET

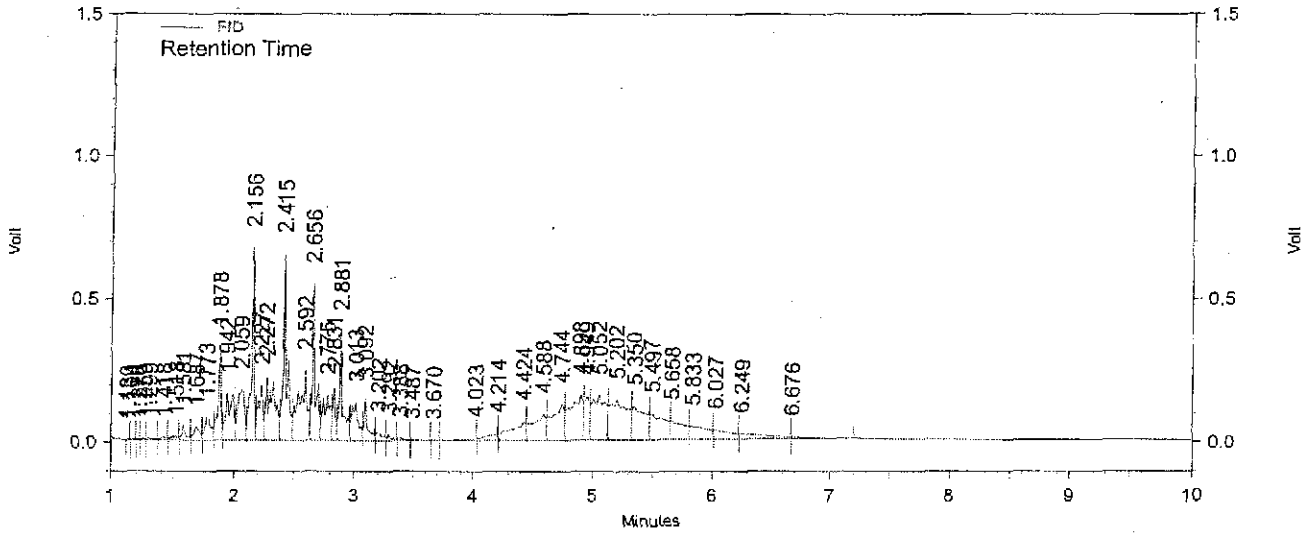
11/06/14

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05017.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: IDSD5K0502 JP5/5W30 500/500PPM** |
| **Acquired** | **: 11/05/14 13:47:50** |
| **Printed** | **: 11/06/14 09:46:58** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 11381114 | 26763.57150 | 425.246 |
| M.OIL(C18-C36) | | 9825630 | 20892.01950 | 470.305 |
| M.OIL(C24-C36) | | 8414955 | 18035.59361 | 466.575 |
| M.OIL(C24-C40) | | 8414955 | 18035.59361 | 466.575 |
| Totals | | 38036654 | | 1828.702 |




AS
11/06/14

**Software Version: Version 3.3.1**

5037

INITIAL CALIBRATION VERIFICATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LK05014A 11/05/2014 12:56
Conc Cont LFID & Datetime: LK05018A 11/05/2014 14:04
CONC UNIT : ppm

| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 26763.6 | 14925291 | 557.67 | 12 | | 15 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 20892.0 | 11193330 | 535.77 | 7 | | 15 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 18035.6 | 7814356 | 433.27 | -13 | | 15 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 18035.6 | 7814356 | 433.27 | -13 | | 15 |

DSD5K05.MET

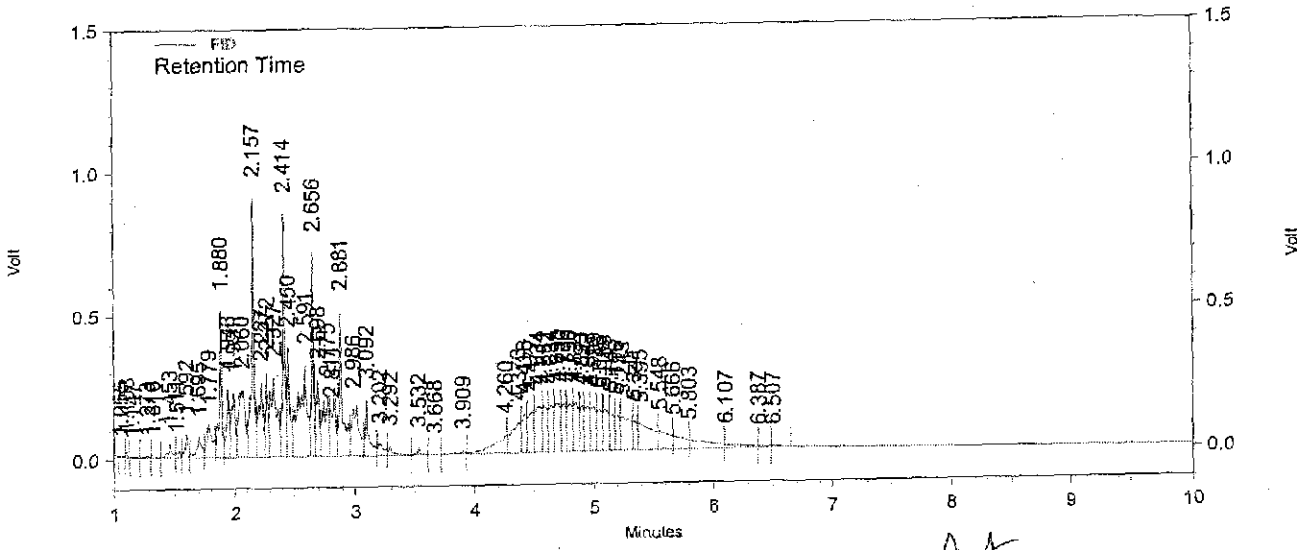
AA 11/06/14

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| Inst. Name: | : GCT-105 (Offline) |
| File | : D:\Projects\EZC331\Data\LK05\LK05018.dat |
| Method | : D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met |
| Sequence: | : D:\Projects\EZC331\Sequence\LK05.seq |
| Sample ID | : IDSD5K0503 JP5/5W30 500/500PPM |
| Acquired | : 11/05/14 14:04:43 |
| Printed | : 11/06/14 09:47:12 |
| User | : KLinn |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 14925291 | 26763.57150 | 557.672 |
| M.OIL(C18-C36) | | 11193330 | 20892.01950 | 535.771 |
| M.OIL(C24-C36) | | 7814356 | 18035.59361 | 433.274 |
| M.OIL(C24-C40) | | 7814356 | 18035.59361 | 433.274 |
| Totals | | 41747333 | | 1959.991 |




11/06/14

**Software Version: Version 3.3.1**

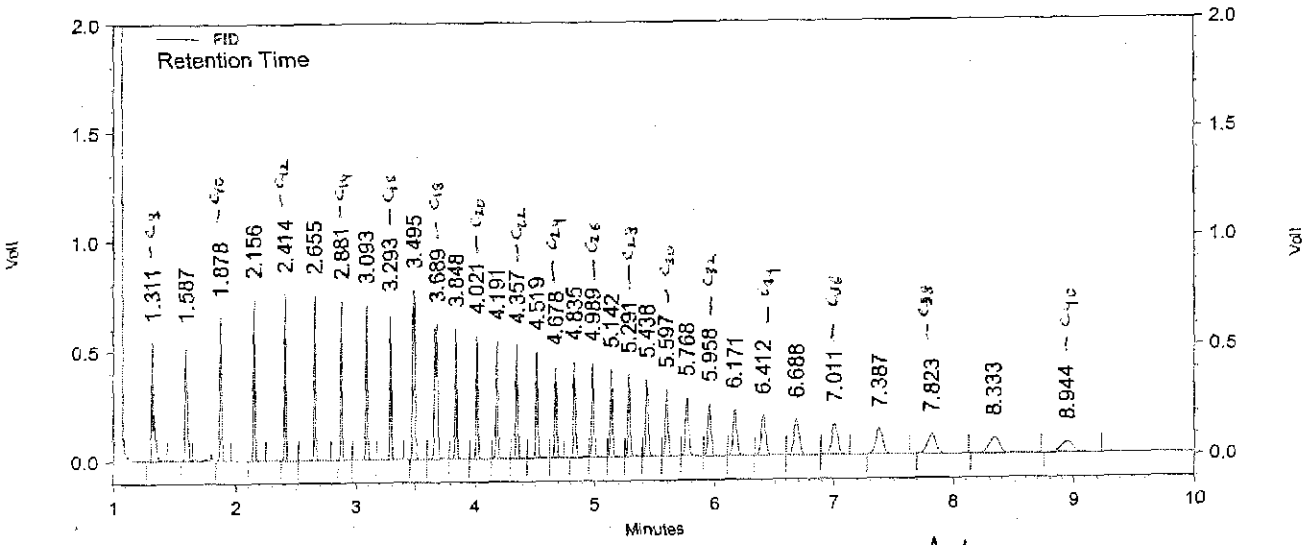
5039

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05019.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: DRO(C8-C40 + C9-C39)** |
| **Acquired** | **: 11/05/14 14:21:43** |
| **Printed** | **: 11/06/14 09:56:28** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | | | | 0.000 BDL |
| HEXACOSANE | 4.989 | 533787 | 23858.57389 | 22.373 |
| DIESEL(TOTAL) | | 18433417 | 28620.13271 | 644.072 |
| DIESEL(C10-C24) | | 9564207 | 27919.60062 | 342.562 |
| DIESEL(C10-C28) | | 11576768 | 27961.51805 | 414.025 |
| DIESEL(C10-C25) | | 10575219 | 27958.48881 | 378.247 |
| DIESEL(C9-C24) | | 10214552 | 28359.12910 | 360.186 |
| DIESEL(C9-C25) | | 11225564 | 28390.94238 | 395.392 |
| DIESEL(C10-C36) | | 15453996 | 27962.70357 | 552.665 |
| DIESEL(C10-C40) | | 16794424 | 27962.70357 | 600.601 |
| Totals | | 104371934 | | 3710.123 |




AA 11/06/14

**Software Version: Version 3.3.1**

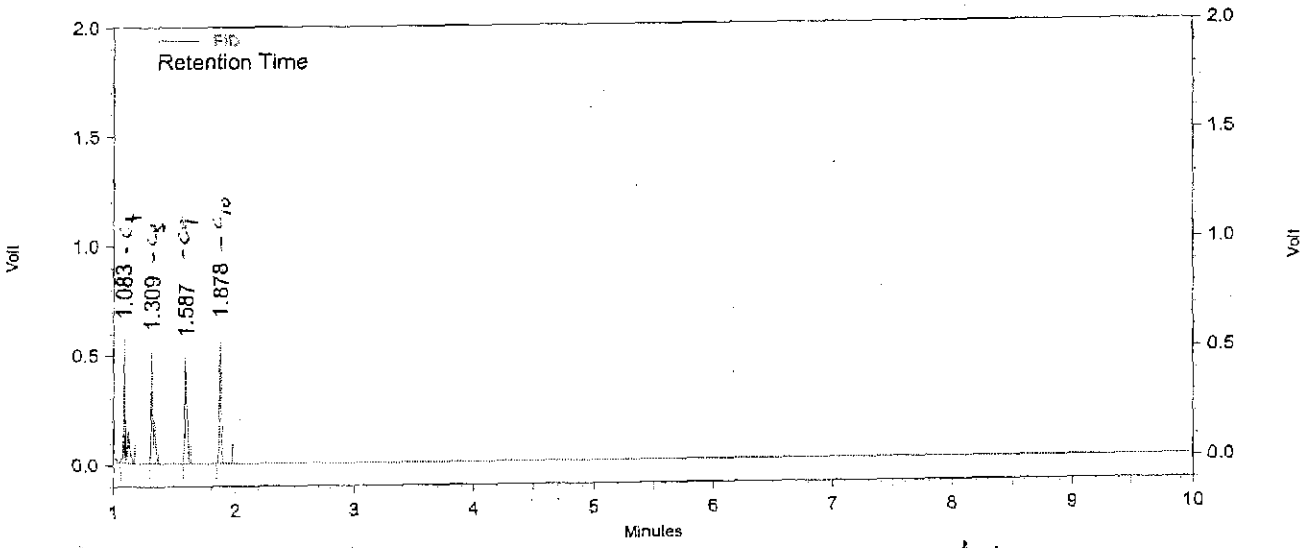
5949

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK05\LK05020.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK05.seq** |
| **Sample ID** | **: GRO(C6-C10)** |
| **Acquired** | **: 11/05/14 14:38:43** |
| **Printed** | **: 11/06/14 09:57:07** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | | | | 0.000 BDL |
| HEXACOSANE | | | | 0.000 BDL |
| DIESEL(TOTAL) | | 1773382 | 28620.13271 | 61.963 |
| DIESEL(C10-C24) | | 0 | 27919.60062 | 0.000 |
| DIESEL(C10-C28) | | 0 | 27961.51805 | 0.000 |
| DIESEL(C10-C25) | | 0 | 27958.48881 | 0.000 |
| DIESEL(C9-C24) | | 601971 | 28359.12910 | 21.227 |
| DIESEL(C9-C25) | | 601971 | 28390.94238 | 21.203 |
| DIESEL(C10-C36) | | 0 | 27962.70357 | 0.000 |
| DIESEL(C10-C40) | | 0 | 27962.70357 | 0.000 |
| Totals | | 2977324 | | 104.392 |




AA 11/06/14

**Software Version: Version 3.3.1**

5041

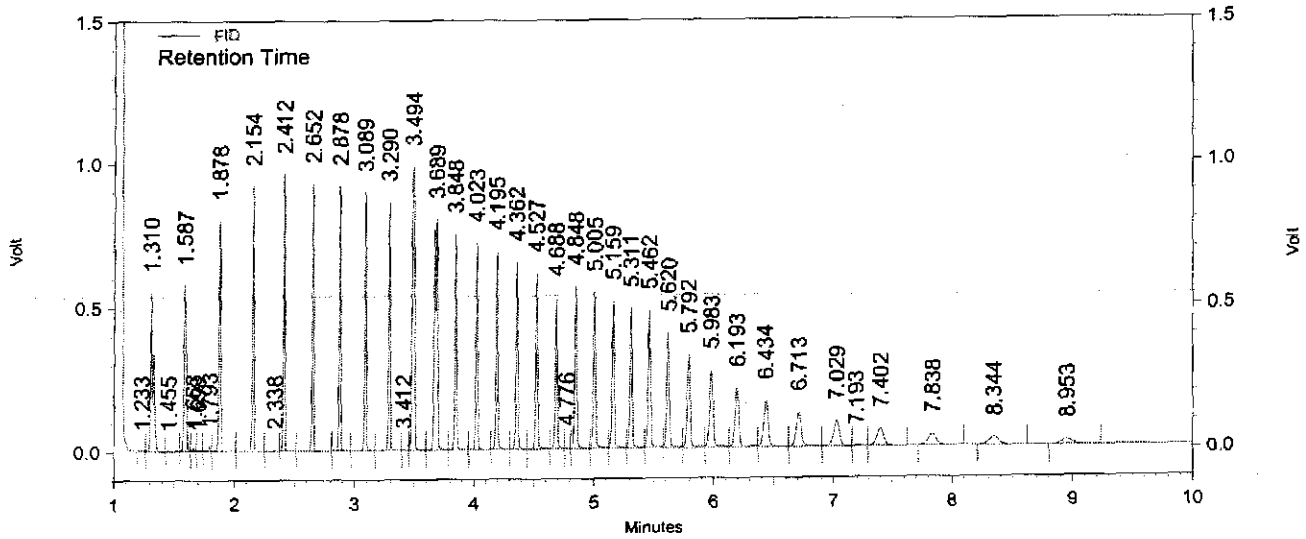
# DAILY CALIBRATIONS

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18001.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK18.seq** |
| **Sample ID** | **: DRO(C8-C40 + C9-C39)** |
| **Acquired** | **: 11/18/14 11:33:37** |
| **Printed** | **: 11/18/14 11:43:45** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.698 | 4529 | 16736.07261 | 0.271 |
| HEXACOSANE | 5.005 | 700543 | 23858.57389 | 29.362 |
| DIESEL(TOTAL) | | 21165560 | 28620.13271 | 739.534 |
| DIESEL(C10-C24) | | 11322442 | 27919.60062 | 405.537 |
| DIESEL(C10-C28) | | 13321402 | 27961.51805 | 476.419 |
| DIESEL(C10-C25) | | 12645946 | 27958.48881 | 452.311 |
| DIESEL(C9-C24) | | 12164279 | 28359.12910 | 428.937 |
| DIESEL(C9-C25) | | 12798510 | 28390.94238 | 450.796 |
| DIESEL(C10-C36) | | 17694980 | 27962.70357 | 632.806 |
| DIESEL(C10-C40) | | 18611463 | 27962.70357 | 665.582 |
| Totals | | 120429654 | | 4281.556 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LK05007A 11/05/2014 10:58
Conc Cont LFID & Datetime: LK18003A 11/18/2014 12:07
CONC UNIT : ppm

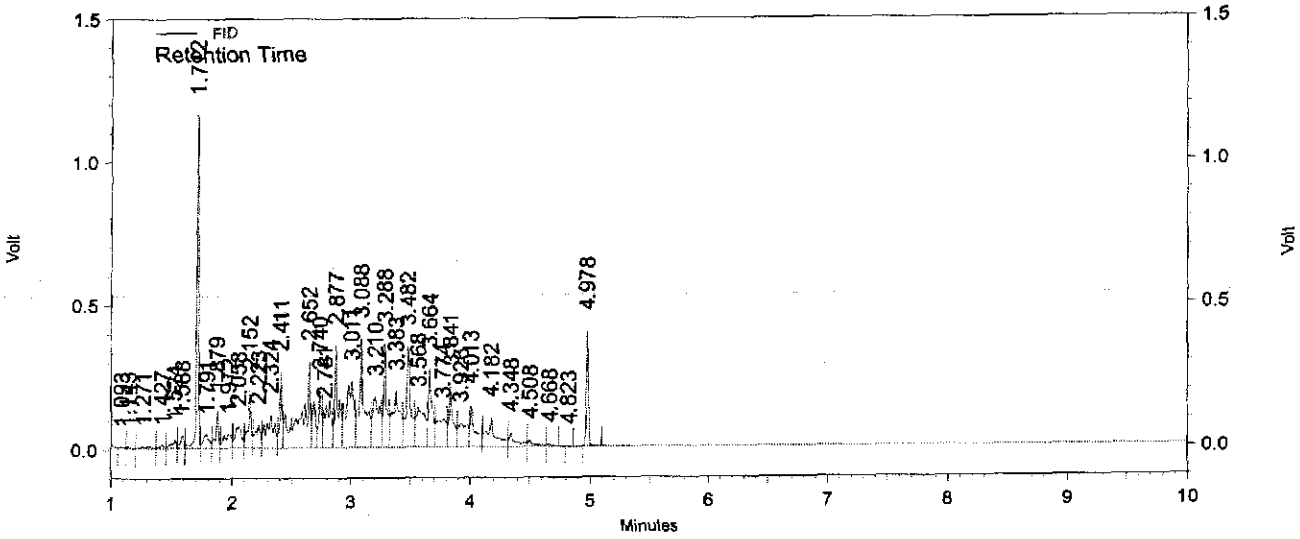
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 28620.1 | 15111427 | 528.00 | 6 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 27919.6 | 14692108 | 526.23 | 5 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 27961.5 | 14696985 | 525.61 | 5 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 27958.5 | 14696985 | 525.67 | 5 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 28359.1 | 14944694 | 526.98 | 5 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 28390.9 | 14949571 | 526.56 | 5 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 27962.7 | 14696985 | 525.59 | 5 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 27962.7 | 14696985 | 525.59 | 5 | | 20 |
| **SURROGATE** | **MINUTES** | **FROM** | **TO** | **TRUECON** | **CF** | **AREA** | **CONC** | **%D** | **QL** | **LIMITS** |
| BROMOBENZENE | 1.712 | 1.709 | 1.715 | 80.0 | 16736.1 | 1353038 | 80.85 | 1 | | 20 |
| HEXACOSANE | 4.978 | 4.930 | 5.026 | 20.0 | 23858.6 | 482617 | 20.23 | 1 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18003.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK18.seq** |
| **Sample ID** | **: CDSD5K05479 DSL 500/80/20PPM** |
| **Acquired** | **: 11/18/14 12:07:30** |
| **Printed** | **: 11/19/14 10:17:23** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ppm] |
|---|---|---|---|---|
| BROMOBENZENE | 1.712 | 1353038 | 16736.07261 | 80.846 |
| HEXACOSANE | 4.978 | 482617 | 23858.57389 | 20.228 |
| DIESEL(TOTAL) | | 15111427 | 28620.13271 | 528.000 |
| DIESEL(C10-C24) | | 14692108 | 27919.60062 | 526.229 |
| DIESEL(C10-C28) | | 14696985 | 27961.51805 | 525.615 |
| DIESEL(C10-C25) | | 14696985 | 27958.48881 | 525.672 |
| DIESEL(C9-C24) | | 14944694 | 28359.12910 | 526.980 |
| DIESEL(C9-C25) | | 14949571 | 28390.94238 | 526.561 |
| DIESEL(C10-C36) | | 14696985 | 27962.70357 | 525.592 |
| DIESEL(C10-C40) | | 14696985 | 27962.70357 | 525.592 |
| Totals | | 120321395 | | 4311.315 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LK05014A 11/05/2014 12:56
Conc Cont LFID & Datetime: LK18004A 11/18/2014 12:24
CONC UNIT : ppm

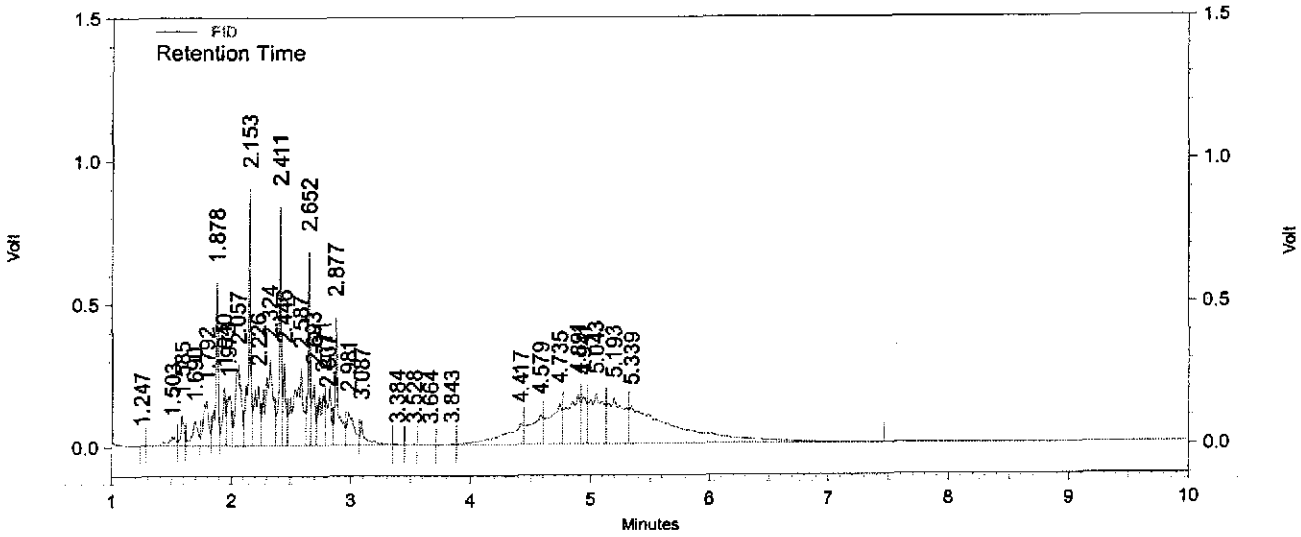
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 26763.6 | 13899393 | 519.34 | 4 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 20892.0 | 10761154 | 515.08 | 3 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 18035.6 | 9207253 | 510.51 | 2 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 18035.6 | 9207253 | 510.51 | 2 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18004.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK18.seq** |
| **Sample ID** | **: CDSD5K05480 JP5/5W30 500/500PPM** |
| **Acquired** | **: 11/18/14 12:24:32** |
| **Printed** | **: 11/19/14 10:17:31** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 13899393 | 26763.57150 | 519.340 |
| M.OIL(C18-C36) | | 10761154 | 20892.01950 | 515.084 |
| M.OIL(C24-C36) | | 9207253 | 18035.59361 | 510.505 |
| M.OIL(C24-C40) | | 9207253 | 18035.59361 | 510.505 |
| **Totals** | | 43075053 | | 2055.434 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LK05007A 11/05/2014 10:58
Conc Cont LFID & Datetime: LK18015A 11/18/2014 15:32
CONC UNIT : ppm

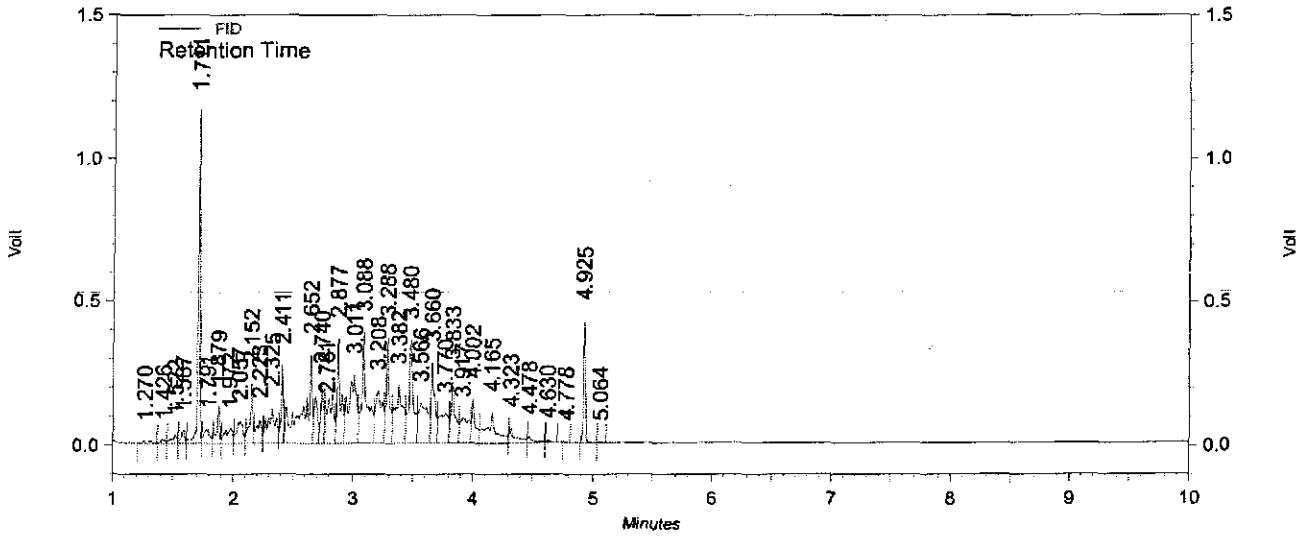
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| DIESEL(TOTAL) | NA | NA | NA | 500.0 | 28620.1 | 15365966 | 536.89 | 7 | | 20 |
| DIESEL(C10-C24) | NA | NA | NA | 500.0 | 27919.6 | 14942185 | 535.19 | 7 | | 20 |
| DIESEL(C10-C28) | NA | NA | NA | 500.0 | 27961.5 | 14952453 | 534.75 | 7 | | 20 |
| DIESEL(C10-C25) | NA | NA | NA | 500.0 | 27958.5 | 14946651 | 534.60 | 7 | | 20 |
| DIESEL(C9-C24) | NA | NA | NA | 500.0 | 28359.1 | 15111307 | 532.85 | 7 | | 20 |
| DIESEL(C9-C25) | NA | NA | NA | 500.0 | 28390.9 | 15115773 | 532.41 | 6 | | 20 |
| DIESEL(C10-C36) | NA | NA | NA | 500.0 | 27962.7 | 14952453 | 534.73 | 7 | | 20 |
| DIESEL(C10-C40) | NA | NA | NA | 500.0 | 27962.7 | 14952453 | 534.73 | 7 | | 20 |
| SURROGATE | MINUTES | FROM | TO | TRUECON | CF | AREA | CONC | %D | QL | LIMITS |
| BROMOBENZENE | 1.711 | 1.708 | 1.714 | 80.0 | 16736.1 | 1394563 | 83.33 | 4 | | 20 |
| HEXACOSANE | 4.925 | 4.877 | 4.973 | 20.0 | 23858.6 | 498609 | 20.90 | 4 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18015.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK18.seq** |
| **Sample ID** | **: CDSD5K05481 DSL 500/80/20PPM** |
| **Acquired** | **: 11/18/14 15:32:04** |
| **Printed** | **: 11/19/14 10:17:48** |
| **User** | **: KLinn** |

***FID Results***

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| BROMOBENZENE | 1.711 | 1394563 | 16736.07261 | 83.327 |
| HEXACOSANE | 4.925 | 498609 | 23858.57389 | 20.899 |
| DIESEL(TOTAL) | | 15365966 | 28620.13271 | 536.894 |
| DIESEL(C10-C24) | | 14942185 | 27919.60062 | 535.186 |
| DIESEL(C10-C28) | | 14952453 | 27961.51805 | 534.751 |
| DIESEL(C10-C25) | | 14946651 | 27958.48881 | 534.602 |
| DIESEL(C9-C24) | | 15111307 | 28359.12910 | 532.855 |
| DIESEL(C9-C25) | | 15115773 | 28390.94238 | 532.415 |
| DIESEL(C10-C36) | | 14952453 | 27962.70357 | 534.728 |
| DIESEL(C10-C40) | | 14952453 | 27962.70357 | 534.728 |
| *Totals* | | 122232413 | | 4380.385 |




**Software Version: Version 3.3.1**

CONTINUE CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Column : HP5
Column size ID : 30MX0.32MM 0.25UM
Mid Conc Init LFID & Datetime: LK05014A 11/05/2014 12:56
Conc Cont LFID & Datetime: LK18016A 11/18/2014 15:49
CONC UNIT : ppm

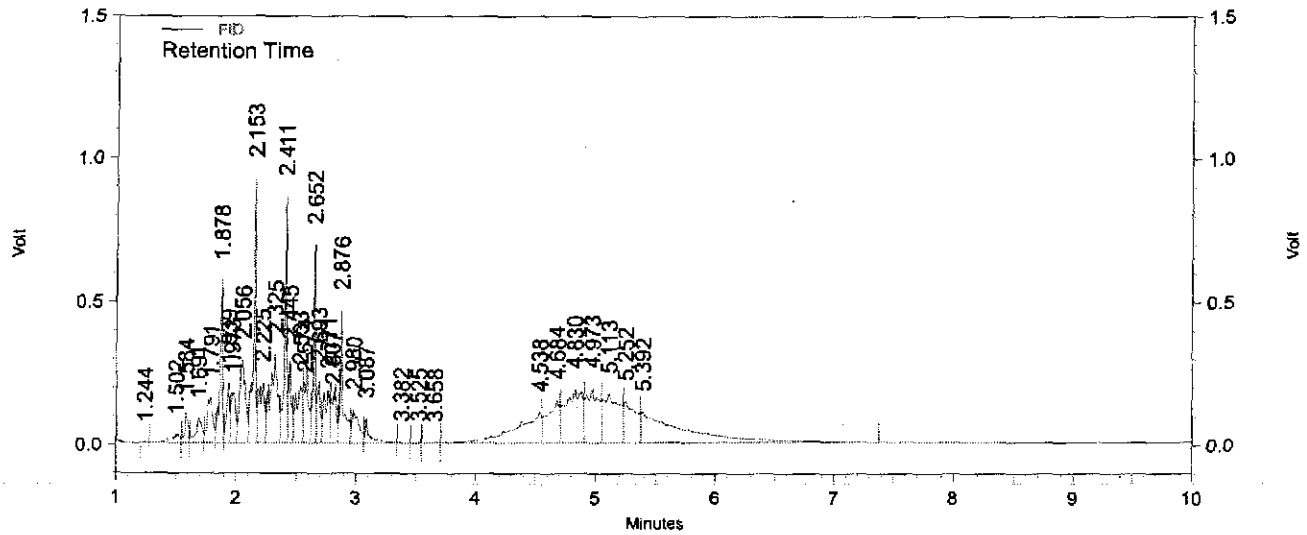
| COMPOUND | RT MINUTES | RT WINDOW FROM | RT WINDOW TO | TRUE CONC | AVERAGE CF | RESULT AREA | RESULT CONC | %D | QL | %D LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|
| JP5(C8-C18) | NA | NA | NA | 500.0 | 26763.6 | 14240481 | 532.08 | 6 | | 20 |
| M.OIL(C18-C36) | NA | NA | NA | 500.0 | 20892.0 | 11052111 | 529.01 | 6 | | 20 |
| M.OIL(C24-C36) | NA | NA | NA | 500.0 | 18035.6 | 9482209 | 525.75 | 5 | | 20 |
| M.OIL(C24-C40) | NA | NA | NA | 500.0 | 18035.6 | 9482209 | 525.75 | 5 | | 20 |

**METHOD 8015 by GC/FID**
**EMAX Laboratories, Inc.**

| | |
|---|---|
| **Inst. Name:** | **: GCT-105 (Offline)** |
| **File** | **: D:\Projects\EZC331\Data\LK18\LK18016.dat** |
| **Method** | **: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met** |
| **Sequence:** | **: D:\Projects\EZC331\Sequence\LK18.seq** |
| **Sample ID** | **: CDSD5K05482 JP5/5W30 500/500PPM** |
| **Acquired** | **: 11/18/14 15:49:04** |
| **Printed** | **: 11/19/14 10:17:53** |
| **User** | **: KLinn** |

**FID Results**

| Name | Retention Time | Area | Average RF | ESTD conc. [ ppm ] |
|---|---|---|---|---|
| JP5(C8-C18) | | 14240481 | 26763.57150 | 532.084 |
| M.OIL(C18-C36) | | 11052111 | 20892.01950 | 529.011 |
| M.OIL(C24-C36) | | 9482209 | 18035.59361 | 525.750 |
| M.OIL(C24-C40) | | 9482209 | 18035.59361 | 525.750 |
| Totals | | 44257010 | | 2112.595 |




**Software Version: Version 3.3.1**

# ANALYTICAL LOGS

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# EXTRACTABLE TPH

**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

DSK005W : K015
J216

DSK007S: LOQ-6, LOD-6 [AK102/AK103]

DSK004W: LOQ-5, LOD-5
J226

DSK006S : J226 [AK102, AK103]

KHL 11/5/19

| | |
|---|---|
| Book #: | AD5-030 |
| Instrument No.: | D5 |
| Analytical Sequence: | LK05 |
| Method File: | DS D5K05, AKD5I25 |
| Analytical Batch: | CDS05K0540F |

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-8015D | 6 |
| ☑ EMAX-AK102/AK103 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | Conc (mg/L) |
|---|---|
| ICAL | |
| ☑ Diesel SS3B-19-06-01 | 5→3000 |
| ☑ Motor Oil ☑ JP5 SS3B-19-06-03 | 10→3000 |
| $CH_2Cl_2$ 54184 | Pure |
| DSL DCC SS3B-17-96-02 | 500/80/20 |
| JP5/SW30 DCC SS3B-17-96-03 | 500/500 |
| Alaska DCC SS3B-17-90-02 | 500/500/20/80 |
| ~~Arizona DCC~~ DRO SS3B-17-91-02 | ——— |
| 6RO SS3B-17-82-02 | ——— |
| DSL ICV SS3B-19-06-02 | 500/80/20 |
| JP5/SW30 ICV1 SS3B-19-07-01 | 500/500 |
| JP5/SW30 ICV2 SS3B-19-09-02 | 500/500 |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZCHROM_GC6890N | |
| ☐ External Hard Drive | |

Analyzed By: KHL

Date: 11/5/19

Gct-105 Method: AKD5125.met Data: LK05062.dat Project: Ezt331 - [Sequence: LK05.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Status | Run | Level | Vial | Column | Sample ID | Method | Filename | Action | Destination |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Complete | Unknown | 0 | 99 | 2 | IB | DSD5K05.met | K05001.dat | | |
| 2 | Complete | Unknown | 0 | 100 | 2 | IBD5K0501 | DSD5K05.met | LK05002.dat | | |
| 3 | Complete | Unknown | 0 | 1 | 2 | DSD5K0501 DSL 5PPM | DSD5K05.met | LK05003.dat | | DSL + SURR. ICAL |
| 4 | Complete | Unknown | 0 | 2 | 2 | DSD5K0502 DSL 10/20/5PPM | DSD5K05.met | LK05004.dat | | DSL + SURR. ICAL |
| 5 | Complete | Unknown | 0 | 3 | 2 | DSD5K0503 DSL 50/40/10PPM | DSD5K05.met | LK05005.dat | | DSL + SURR. ICAL |
| 6 | Complete | Unknown | 0 | 4 | 2 | DSD5K0504 DSL 100/60/15PPM | DSD5K05.met | LK05006.dat | | DSL + SURR. ICAL |
| 7 | Complete | Unknown | 0 | 5 | 2 | DSD5K0505 DSL 500/80/20PPM | DSD5K05.met | LK05007.dat | | DSL + SURR. ICAL |
| 8 | Complete | Unknown | 0 | 6 | 2 | DSD5K0506 DSL 1500/100/25PPM | DSD5K05.met | LK05008.dat | | DSL + SURR. ICAL |
| 9 | Complete | Unknown | 0 | 7 | 2 | DSD5K0507 DSL 3000/220/55PPM | DSD5K05.met | LK05009.dat | | DSL + SURR. ICAL |
| 10 | Complete | Unknown | 0 | 8 | 2 | IDSD5K0501 DSL 500/80/20PPM | DSD5K05.met | LK05010.dat | | DSL + SURR. ICV |
| 11 | Complete | Unknown | 0 | 9 | 2 | DSD5K0508 JP5/5W30 10/10PPM | DSD5K05.met | LK05011.dat | | JP5 + 5W30 ICAL |
| 12 | Complete | Unknown | 0 | 10 | 2 | DSD5K0509 JP5/5W30 50/50PPM | DSD5K05.met | LK05012.dat | | JP5 + 5W30 ICAL |
| 13 | Complete | Unknown | 0 | 11 | 2 | DSD5K0510 JP5/5W30 100/100PPM | DSD5K05.met | LK05013.dat | | JP5 + 5W30 ICAL |
| 14 | Complete | Unknown | 0 | 12 | 2 | DSD5K0511 JP5/5W30 500/500PPM | DSD5K05.met | LK05014.dat | | JP5 + 5W30 ICAL |
| 15 | Complete | Unknown | 0 | 13 | 2 | DSD5K0512 JP5/5W30 1500/1500PPM | DSD5K05.met | LK05015.dat | | JP5 + 5W30 ICAL |
| 16 | Complete | Unknown | 0 | 14 | 2 | DSD5K0513 JP5/5W30 3000/3000PPM | DSD5K05.met | LK05016.dat | | JP5 + 5W30 ICAL |
| 17 | Complete | Unknown | 0 | 15 | 2 | IDSD5K0502 JP5/5W30 500/500PPM | DSD5K05.met | LK05017.dat | | JP5 + 5W30(RESTEK) ICV |
| 18 | Complete | Unknown | 0 | 16 | 2 | IDSD5K0503 JP5/5W30 500/500PPM | DSD5K05.met | LK05018.dat | | JP5 + 5W30(ACCUSTD) ICV |
| 19 | Complete | Unknown | 0 | 17 | 2 | DRO(C8-C40 + C9-C39) | DSD5K05.met | LK05019.dat | | |
| 20 | Complete | Unknown | 0 | 18 | 2 | GRO(C6-C10) | DSD5K05.met | LK05020.dat | | |
| 21 | Complete | Unknown | 0 | 96 | 2 | CDSD5K05407 DSL 500/80/20PPM | DSD5K05.met | LK05021.dat | | |
| 22 | Complete | Unknown | 0 | 97 | 2 | CDSD5K05408 JP5/5W30 500/500PPM | DSD5K05.met | LK05022.dat | | |
| 23 | Complete | Unknown | 0 | 19 | 2 | DSK005WB | DSD5K05.met | LK05023.dat | | |
| 24 | Complete | Unknown | 0 | 20 | 2 | DSK005WL | DSD5K05.met | LK05024.dat | | |
| 25 | Complete | Unknown | 0 | 21 | 2 | DSK005WC | DSD5K05.met | LK05025.dat | | |
| 26 | Complete | Unknown | 0 | 22 | 2 | 14K015-01 | DSD5K05.met | LK05026.dat | | |
| 27 | Complete | Unknown | 0 | 23 | 2 | 14K015-02 | DSD5K05.met | LK05027.dat | | |
| 28 | Complete | Unknown | 0 | 24 | 2 | 14K015-03 | DSD5K05.met | LK05028.dat | | |
| 29 | Complete | Unknown | 0 | 25 | 2 | 14K015-03M | DSD5K05.met | LK05029.dat | | |
| 30 | Complete | Unknown | 0 | 26 | 2 | 14K015-03S | DSD5K05.met | LK05030.dat | | |
| 31 | Complete | Unknown | 0 | 27 | 2 | 14K015-05 | DSD5K05.met | LK05031.dat | | |
| 32 | Complete | Unknown | 0 | 28 | 2 | 14K015-06 | DSD5K05.met | LK05032.dat | | |
| 33 | Complete | Unknown | 0 | 96 | 2 | CDSD5K05409 DSL 500/80/20PPM | DSD5K05.met | LK05033.dat | | |
| 34 | Complete | Unknown | 0 | 97 | 2 | CDSD5K05410 JP5/5W30 500/500PPM | DSD5K05.met | LK05034.dat | | |
| 35 | Complete | Unknown | 0 | 29 | 2 | 14K015-07 | DSD5K05.met | LK05035.dat | | |
| 36 | Complete | Unknown | 0 | 30 | 2 | 14K015-08 | DSD5K05.met | LK05036.dat | | |
| 37 | Complete | Unknown | 0 | 31 | 2 | 14K015-09 | DSD5K05.met | LK05037.dat | | |
| 38 | Complete | Unknown | 0 | 32 | 2 | 14K015-10 | DSD5K05.met | LK05038.dat | | |
| 39 | Complete | Unknown | 0 | 33 | 2 | 14K015-11 | DSD5K05.met | LK05039.dat | | |
| 40 | Complete | Unknown | 0 | 34 | 2 | 14J216-01I 0.02/1ML | DSD5K05.met | LK05040.dat | | Yellow/ Turbid |
| 41 | Complete | Unknown | 0 | 96 | 2 | CDSD5K05411 DSL 500/80/20PPM | DSD5K05.met | LK05041.dat | | |
| 42 | Complete | Unknown | 0 | 97 | 2 | CDSD5K05412 JP5/5W30 500/500PPM | DSD5K05.met | LK05042.dat | | |
| 43 | Complete | Unknown | 0 | 100 | 2 | IBD5K0502 | AKD5125.met | LK05043.dat | | |
| 44 | Complete | Unknown | 0 | 98 | 2 | CAKD5125413 500/500/20/80PPM | AKD5125.met | LK05044.dat | | |

FINAL

KHL 11/6/14

For Help, press F1

Start | Untitled - Paint | Ezchrom Elite | Gct-105 - Method: A... | Gct-105 (Offline) - Mes... | b:\projects\ezchrom\export | Thursday, November 06, 2014 | Caps

GC1-105 Method: AKD5125.met Data: LK05062.dat Project: EZC331 - [Sequence: LK05.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Status | Run | Level | Vial | Volume | Sample ID | Method | Filename | Action | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 44 | Complete | Unknown | 0 | 98 | 2 | CAKD5125413 500/500/20/80PPM | AKD5125.met | LK05044.dat | | |
| 45 | Complete | Unknown | 0 | 17 | 2 | DRO(C8-C40 + C9-C39) | AKD5125.met | LK05045.dat | | |
| 46 | Complete | Unknown | 0 | 35 | 2 | DSK007SB | AKD5125.met | LK05046.dat | | |
| 47 | Complete | Unknown | 0 | 36 | 2 | LOQ-06 | AKD5125.met | LK05047.dat | | |
| 48 | Complete | Unknown | 0 | 37 | 2 | LOD-06 | AKD5125.met | LK05048.dat | | |
| 49 | Complete | Unknown | 0 | 38 | 2 | DSK004WB | AKD5125.met | LK05049.dat | | |
| 50 | Complete | Unknown | 0 | 39 | 2 | DSK004WL | AKD5125.met | LK05050.dat | | |
| 51 | Complete | Unknown | 0 | 40 | 2 | DSK004WC | AKD5125.met | LK05051.dat | | |
| 52 | Complete | Unknown | 0 | 41 | 2 | LOQ-05 | AKD5125.met | LK05052.dat | | |
| 53 | Complete | Unknown | 0 | 42 | 2 | LOD-05 | AKD5125.met | LK05053.dat | | |
| 54 | Complete | Unknown | 0 | 43 | 2 | 14J226-02 | AKD5125.met | LK05054.dat | | |
| 55 | Complete | Unknown | 0 | 98 | 2 | CAKD5125414 500/500/20/80PPM | AKD5125.met | LK05055.dat | | |
| 56 | Complete | Unknown | 0 | 17 | 2 | DRO(C8-C40 + C9-C39) | AKD5125.met | LK05056.dat | | |
| 57 | Complete | Unknown | 0 | 44 | 2 | DSK006SB | AKD5125.met | LK05057.dat | | |
| 58 | Complete | Unknown | 0 | 45 | 2 | DSK006SL | AKD5125.met | LK05058.dat | | |
| 59 | Complete | Unknown | 0 | 46 | 2 | DSK006SC | AKD5125.met | LK05059.dat | | |
| 60 | Complete | Unknown | 0 | 47 | 2 | 14J226-04 | AKD5125.met | LK05060.dat | | |
| 61 | Complete | Unknown | 0 | 48 | 2 | 14J226-05 | AKD5125.met | LK05061.dat | | |
| 62 | Stopped | Unknown | 0 | 98 | 2 | CAKD5125415 500/500/20/80PPM | AKD5125.met | LK05062.dat | ANY | |
| 63 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05063.dat | | |
| 64 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05064.dat | | |
| 65 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05065.dat | | |
| 66 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05066.dat | | |
| 67 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05067.dat | | |
| 68 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05068.dat | | |
| 69 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05069.dat | | |
| 70 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05070.dat | | |
| 71 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05071.dat | | |
| 72 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05072.dat | | |
| 73 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05073.dat | | |
| 74 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05074.dat | | |
| 75 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05075.dat | | |
| 76 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05076.dat | | |
| 77 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05077.dat | | |
| 78 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05078.dat | | |
| 79 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05079.dat | | |
| 80 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05080.dat | | |
| 81 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05081.dat | | |
| 82 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05082.dat | | |
| 83 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05083.dat | | |
| 84 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05084.dat | | |
| 85 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05085.dat | | |
| 86 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05086.dat | | |
| 87 | | Unknown | 0 | | 2 | IB | AKD5125.met | LK05087.dat | | |

KHL 11/6/14

FINAL

AHL 11/6/14

For Help, press F1

Start | Unused - Paint | EZChromElite | GC1-105 - Method: A... | GC1-105 (Offline) - M... | D:\Projects\EZC331\Export | Thursday, November 06, 2014 08:41

EMAX LABORATORIES, INC.

# ANALYSIS RUN LOG
*for*
# EXTRACTABLE TPH



**Note:** For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

**Comments:**

DSK021W: K089
K093

DSK0255 : K094
K106

**Book #:** AD5-030

**Instrument No.:** D5

**Analytical Sequence:** LK18

**Method File:** DSD5K05

**Analytical Batch:** CDSD5K05479

| SOP # | Rev. # |
|---|---|
| ☑ EMAX-8015D | 6 |
| ☐ EMAX-AK102/AK103 | 3 |
| ☐ EMAX- | |

| STANDARDS ID | Conc (mg/L) |
|---|---|
| ICAL | |
| ☐ Diesel | |
| ☐ Motor Oil ☐ JP5 | |
| $CH_2Cl_2$ 54184 | Pure |
| DSL DCC SSSB-19-08-02 | 500/500/20 |
| JP5/5W30 DCC SSSB-19-08-03 | 500/500 |
| Alaska DCC | |
| Arizona DCC | |
| DRO SSSB-19-91-02 | – |
| | |
| | |

| ELECTRONIC DATA ARCHIVAL | |
|---|---|
| Location | Date |
| ☐ EZCHROM_GC6890N | |
| ☐ External Hard Drive | |

Analyzed By: KHL

Date: 11/18/19

5056

GCT-105 Method: DSD5K05.met Data: LK13001.dat Project: EZC331 - [Sequence: LK18.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Hold | Status | Port | Level | Vial | Rung | Sample ID | Method | Datafile | Actions | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Complete | Unknc | 0 | 99 | 2 | DRO(C9-C40 + C9-C39) | DSD5K05.met | LK18001.dat | | |
| 2 | Complete | Unknown | 0 | 100 | 2 | IBD5K1801 | DSD5K05.met | LK18002.dat | | |
| 3 | Complete | Unknown | 0 | 1 | 2 | CDSD5K05479 DSL 500/80/20PPM | DSD5K05.met | LK18003.dat | | |
| 4 | Complete | Unknown | 0 | 2 | 2 | CDSD5K05480 JP5/5W30 500/500PPM | DSD5K05.met | LK18004.dat | | |
| 5 | Complete | Unknown | 0 | 3 | 2 | DSK021WB | DSD5K05.met | LK18005.dat | | |
| 6 | Complete | Unknown | 0 | 4 | 2 | DSK021WL | DSD5K05.met | LK18006.dat | | |
| 7 | Complete | Unknown | 0 | 5 | 2 | DSK021WC | DSD5K05.met | LK18007.dat | | |
| 8 | Complete | Unknown | 0 | 6 | 2 | 14K089-02 | DSD5K05.met | LK18008.dat | | |
| 9 | Complete | Unknown | 0 | 7 | 2 | 14K089-03 | DSD5K05.met | LK18009.dat | | |
| 10 | Complete | Unknown | 0 | 8 | 2 | 14K093-02 | DSD5K05.met | LK18010.dat | | Yellow |
| 11 | Complete | Unknown | 0 | 9 | 2 | 14K093-03 | DSD5K05.met | LK18011.dat | | Yellow |
| 12 | Complete | Unknown | 0 | 10 | 2 | 14K093-04 | DSD5K05.met | LK18012.dat | | Yellow |
| 13 | Complete | Unknown | 0 | 11 | 2 | 14K093-08 | DSD5K05.met | LK18013.dat | | Yellow |
| 14 | Complete | Unknown | 0 | 12 | 2 | 14K093-10 | DSD5K05.met | LK18014.dat | | Yellow |
| 15 | Complete | Unknown | 0 | 1 | 2 | CDSD5K05481 DSL 500/80/20PPM | DSD5K05.met | LK18015.dat | | |
| 16 | Complete | Unknown | 0 | 2 | 2 | CDSD5K05482 JP5/5W30 500/500PPM | DSD5K05.met | LK18016.dat | | |
| 17 | Complete | Unknown | 0 | 13 | 2 | 14K093-05 | DSD5K05.met | LK18017.dat | | |
| 18 | Complete | Unknown | 0 | 14 | 2 | 14K093-06 | DSD5K05.met | LK18018.dat | | |
| 19 | Complete | Unknown | 0 | 15 | 2 | 14K093-09 | DSD5K05.met | LK18019.dat | | |
| 20 | Complete | Unknown | 0 | 16 | 2 | 14K093-11 | DSD5K05.met | LK18020.dat | | |
| 21 | Complete | Unknown | 0 | 17 | 2 | 14K093-12 | DSD5K05.met | LK18021.dat | | |
| 22 | Complete | Unknown | 0 | 18 | 2 | 14K093-12M | DSD5K05.met | LK18022.dat | | |
| 23 | Complete | Unknown | 0 | 19 | 2 | 14K093-12S | DSD5K05.met | LK18023.dat | | |
| 24 | Complete | Unknown | 0 | 20 | 2 | 14K093-13 | DSD5K05.met | LK18024.dat | | |
| 25 | Complete | Unknown | 0 | 1 | 2 | CDSD5K05483 DSL 500/80/20PPM | DSD5K05.met | LK18025.dat | | |
| 26 | Complete | Unknown | 0 | 2 | 2 | CDSD5K05484 JP5/5W30 500/500PPM | DSD5K05.met | LK18026.dat | | |
| 27 | Complete | Unknown | 0 | 21 | 2 | DSK025SB | DSD5K05.met | LK18027.dat | | |
| 28 | Complete | Unknown | 0 | 22 | 2 | DSK025SL | DSD5K05.met | LK18028.dat | | |
| 29 | Complete | Unknown | 0 | 23 | 2 | DSK025SC | DSD5K05.met | LK18029.dat | | |
| 30 | Complete | Unknown | 0 | 24 | 2 | 14K094-01 | DSD5K05.met | LK18030.dat | | |
| 31 | Complete | Unknown | 0 | 25 | 2 | 14K094-02 | DSD5K05.met | LK18031.dat | | |
| 32 | Complete | Unknown | 0 | 26 | 2 | 14K094-03 | DSD5K05.met | LK18032.dat | | |
| 33 | Complete | Unknown | 0 | 27 | 2 | 14K094-04 | DSD5K05.met | LK18033.dat | | |
| 34 | Complete | Unknown | 0 | 28 | 2 | 14K094-05 | DSD5K05.met | LK18034.dat | | |
| 35 | Complete | Unknown | 0 | 29 | 2 | 14K094-05M | DSD5K05.met | LK18035.dat | | |
| 36 | Complete | Unknown | 0 | 30 | 2 | 14K094-05S | DSD5K05.met | LK18036.dat | | |
| 37 | Complete | Unknown | 0 | 1 | 2 | CDSD5K05485 DSL 500/80/20PPM | DSD5K05.met | LK18037.dat | | |
| 38 | Complete | Unknown | 0 | 2 | 2 | CDSD5K05486 JP5/5W30 500/500PPM | DSD5K05.met | LK18038.dat | | |
| 39 | Complete | Unknown | 0 | 31 | 2 | 14K094-06 | DSD5K05.met | LK18039.dat | | |
| 40 | Complete | Unknown | 0 | 32 | 2 | 14K094-07 | DSD5K05.met | LK18040.dat | | |
| 41 | Complete | Unknown | 0 | 33 | 2 | 14K094-08 | DSD5K05.met | LK18041.dat | | |
| 42 | Complete | Unknown | 0 | 34 | 2 | 14K106-03 | DSD5K05.met | LK18042.dat | | |
| 43 | Complete | Unknown | 0 | 35 | 2 | 14K106-04 | DSD5K05.met | LK18043.dat | | |
| 44 | Complete | Unknown | 0 | 36 | 2 | 14K106-05 | DSD5K05.met | LK18044.dat | | |

FINAL

For Help, press F1

Bm 11/19/14

Wednesday, November 19, 2014

GC1-105 Method: DSD5K05.met Data: LK13001.dat Project: EZC331 - [Sequence: LK18.seq]

File Edit View Method Data Sequence Analysis Control Reports Window Help

1: FID

| Run # | Status | Path | Level | Vial | Inj | Sample ID | Method | Data | Acq | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| 44 | Complete | Unknown | 0 | 36 | 2 | 14K106-05 | DSD5K05.met | LK18044.dat | | |
| 45 | Complete | Unknown | 0 | 37 | 2 | 14K106-06 | DSD5K05.met | LK18045.dat | | |
| 46 | Complete | Unknown | 0 | 38 | 2 | 14K106-07 | DSD5K05.met | LK18046.dat | | |
| 47 | Complete | Unknown | 0 | 39 | 2 | 14K106-01 | DSD5K05.met | LK18047.dat | | Amber |
| 48 | Complete | Unknown | 0 | 40 | 2 | 14K106-02 | DSD5K05.met | LK18048.dat | | Amber |
| 49 | Complete | Unknown | 0 | 1 | 2 | CDSD5K05487 DSL 500/80/20PPM | DSD5K05.met | LK18049.dat | | |
| 50 | Stopped | Unknown | 0 | 2 | 2 | CDSD5K05488 JP5/5W30 500/500PPM | DSD5K05.met | LK18050.dat | ANY | |
| 51 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18051.dat | | |
| 52 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18052.dat | | |
| 53 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18053.dat | | |
| 54 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18054.dat | | |
| 55 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18055.dat | | |
| 56 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18056.dat | | |
| 57 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18057.dat | | |
| 58 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18058.dat | | |
| 59 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18059.dat | | |
| 60 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18060.dat | | |
| 61 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18061.dat | | |
| 62 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18062.dat | | |
| 63 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18063.dat | | |
| 64 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18064.dat | | |
| 65 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18065.dat | | |
| 66 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18066.dat | | |
| 67 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18067.dat | | |
| 68 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18068.dat | | |
| 69 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18069.dat | | |
| 70 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18070.dat | | |
| 71 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18071.dat | | |
| 72 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18072.dat | | |
| 73 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18073.dat | | |
| 74 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18074.dat | | |
| 75 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18075.dat | | |
| 76 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18076.dat | | |
| 77 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18077.dat | | |
| 78 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18078.dat | | |
| 79 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18079.dat | | |
| 80 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18080.dat | | |
| 81 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18081.dat | | |
| 82 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18082.dat | | |
| 83 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18083.dat | | |
| 84 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18084.dat | | |
| 85 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18085.dat | | |
| 86 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18086.dat | | |
| 87 | | Unknown | 0 | | 2 | IB | DSD5K05.met | LK18087.dat | | |

11/19/14

FINAL

11/19/14

For Help, press F1

Wednesday, November 19, 2014

# EXTRACTION LOGS

EMAX LABORATORIES, INC.

# EXTRACTION LOG
*for*
# TPH



| SOP | Rev. # |
|---|---|
| ☑ EMAX-3520 | 5 |
| ☐ EMAX-3540 | 2 |
| ☐ EMAX-3550 | 4 |
| ☐ EMAX-3580 | 2 |
| ☐ EMAX-8015AZ | 2 |
| ☐ EMAX-AK 102/103 | 3 |
| ☐ EMAX- | |

**Note:** For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

| Lab Sample ID | Sonicator # | Concentrator # |
|---|---|---|
| DSK021WB | | 5 |
| WC | | 5 |
| WD | | 5 |
| K089-02 | | 5 |
| -03 | | 5 |
| K093-02 | | 4 |
| -03 | | 4 |
| -04 | | 4 |
| -05 | | 4 |
| -06 | | 4 |
| -08 | | 4 |
| -09 | | 3 |
| -10 | | 3 |
| -11 | | 3 |
| -12 | | 3 |
| -12M | | 3 |
| -12S | | 3 |
| -13 | | 2 |

**Book #:** EDS-070
**Preparation Batch:** DSK 021W
**Matrix:** WATER
**Micropipette ID:** 1000µL PE00-03
**Micropipette ID:** 100µL PE97C-03

| Standards | ID | Amount Added (ml) |
|---|---|---|
| Surrogate | | |
| Surrogate | SS3-009-08-30 | 0.5 |
| LCS/MS DS | WSS3-009-08-04 | 0.1 |
| LCS/MS | | |

| Reagent | Lot # / ID |
|---|---|
| $CH_2Cl_2$ | 57484 |
| $Na_2SO_4$ | SWIB-002-03-06 |
| HCl | 4113080 |
| Silica Sand | |
| Silica Gel | |
| Reagent Water | SWIA-005-10-05 |
| pH strip | HC421273 |
| Filter Paper | 9587322B |

TUNING

| Sonicator # | Reading |
|---|---|
| | |
| | |
| | |
| | |

| Concentrator | Water Bath Temperature Setting (°C) | Thermometer Reading (°C) |
|---|---|---|
| 1 | | |
| 2 | 35 | 35 |
| 3 | 35 | 35 |
| 4 | 35 | 35 |
| 5 | 35 | 35 |
| 6 | | |

**Comments:**

Test thermometer = SVOC-T1

Prepared By: JM Standard Added By: JM

Witnessed By: AGG Checked By: ML

Extract Received By: DS 11/15/19 Extraction Location: PE00-10

Disposal Date: Disposed By:

EMAX LABORATORIES, INC.

FileID: DSK021W

# EXTRACTION LOG FOR EXTRACTABLE TPH

| PrepBatchID | LabSampleID | Aliquot | Unit | DateTime | Ve(ml) | ExpAmt | ExpVe(ml) | PrepFctr | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 14DSK021W01 | DSK021WB | 1000 | ml | 11/17/14 14:39 | 10 | 1000 | 10 | 1 | |
| 14DSK021W02 | DSK021WL | 1000 | ml | 11/17/14 14:39 | 10 | 1000 | 10 | 1 | |
| 14DSK021W03 | DSK021WC | 1000 | ml | 11/17/14 14:39 | 10 | 1000 | 10 | 1 | |
| 14DSK021W04 | K089-02 | 1000 | ml | 11/17/14 14:39 | 10 | 1000 | 10 | 1 | ✓ |
| 14DSK021W05 | K089-03 | 1000 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1 | ✓ |
| 14DSK021W06 | K093-02 | 970 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.03 | orange |
| 14DSK021W07 | K093-03 | 970 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.03 | black |
| 14DSK021W08 | K093-04 | 950 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.05 | yellow |
| 14DSK021W09 | K093-05 | 880 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.14 | light yellow |
| 14DSK021W10 | K093-06 | 970 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.03 | yellow |
| 14DSK021W11 | K093-08 | 960 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.04 | yellow green |
| 14DSK021W12 | K093-09 | 1020 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 0.98 | yellow |
| 14DSK021W13 | K093-10 | 940 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.06 | orange |
| 14DSK021W14 | K093-11 | 1030 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 0.97 | yellow |
| 14DSK021W15 | K093-12 | 1040 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 0.96 | yellow |
| 14DSK021W16 | K093-12M | 980 | ml | 11/17/14 14:40 | 10 | 1000 | 10 | 1.02 | yellow |
| 14DSK021W17 | K093-12S | 950 | ml | 11/17/14 14:51 | 10 | 1000 | 10 | 1.05 | yellow |
| 14DSK021W18 | K093-13 | 1080 | ml | 11/17/14 14:51 | 10 | 1000 | 10 | 0.93 | |

Ve=extract volume PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe

☑ Extraction Started @ 11/17/14 13:30 Prepared By: JMuert

☑ Extraction Ended @ 11/18/14 7:30 Checked By: ML

Comments: Vol entered after extraction started, pH adjusted to pH<2 w/ conc. HCl. Date 11/18/14

SOP EMAX-3520 Rev. 5

# DATA QUALITY ASSESSMENT REPORT

# DATA QUALITY ASSESSMENT REPORT FOR GROUNDWATER AND POTABLE WATER SAMPLES COLLECTED AT RED HILL BULK FUEL STORAGE FACILITY DURING OCTOBER AND NOVEMBER 2014 AT JOINT BASE PEARL HARBOR-HICKAM, HAWAII

Data Validator: Tammy Chang, Project Chemist (Parsons, Austin)

## 1.0 INTRODUCTION

The following data quality assessment report (DQAR) covers data validation results for groundwater (RHMW06-GW-01 and RHMW07-GW-01) and potable water (HW111214-01) samples including field duplicates collected from October 20 to November 12, 2014 from two monitoring wells at the Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii and from a fire hydrant, a source for potable drilling water located in Aeia, Hawaii. Samples were analyzed using definitive analytical methods and laboratory reporting requirements in the *Final Work Plan/Sampling and Analysis Plan, Monitoring Well Installation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii* (work plan) (Battelle and Parsons, 2014) conducted under Contract No. N62583-11-D-0515, Task Order (TO) KB01. The analytical results for all collected samples were validated. A project-specific "Level IV" data validation procedure, evaluating the summarized sample and quality control (QC) data, was performed. The Level IV review involved review and evaluation of the summarized data reported, including sample results and all QC data, as well as the analysis case narratives and internal standard recovery information (for applicable analyses). As a result of the data validation process, Department of Defense (DoD) Quality System Manual (QSM), version 4.2 (2010), data qualifiers were applied as necessary to the sample results. In addition, data validation qualifiers and final qualifiers (i.e., "VALIDATOR_QUALIFIER" and "FINAL_QUALIFIER" fields in the Naval Electronic Data Deliverable [NEDD]) were assigned to samples affected by the identified data quality deficiencies and were used in data summary tables.

Analyses of samples were performed in accordance with the project Quality Assurance Project Plan (QAPP) in the work plan (Battelle and Parsons, 2014), as well as the DoD QSM version 4.2. The laboratory analytical data packages were provided in "Level IV" format (i.e., sample data, QC data summaries, and associated raw data). The validated samples are listed in Section 3.0, which provides sample numbers, Sample Delivery Group (SDG) numbers, sampling dates, and trip blanks. Level IV reports were reviewed for all non-compliant issues, instrument print-out for all positively identified analytes, and for all manual integrations.

All water samples for definitive analyses used to generate definitive data were performed by APPL Laboratories, Inc. (APPL), Clovis, California and EMAX Laboratories, Inc., Torrance, California. Each laboratory performed the following analyses:

APPL: Volatile Organic Organics (VOCs), Ethylene Dibromide (EDB), 1,2-Dibromo-3-chloropropane (DBCP), Methane, Alkalinity, Chloride (this parameter was

requested for sample RHMW07-GW-01 only), and Sulfate, Nitrite/Nitrate, and Dissolved Lead. All samples collected for the dissolved lead groundwater analysis in October were filtered on site. Both fire hydrant samples collected for dissolved lead analysis in November were filtered and acidified by APPL upon receipt.

EMAX: Total Petroleum Hydrocarbons-Gasoline (TPH-GRO), Total Petroleum Hydrocarbons-Diesel Range Organics and TPH-Residual Range Organics (TPH-DRO/RRO), and Polynuclear Aromatic Hydrocarbons (PAHs).

This DQAR presents a review of data quality in relation to the project data quality objectives (DQOs) of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters. There were no data rejected due to non-compliant issues relating to data quality.

# 2.0 EVALUATION CRITERIA

The analyses and findings presented in this report are based on the documentation outlined in the data quality specifications within the project QAPP or the analytical methods.

When both parent and field duplicate (FD) samples have results at or above the Limit of Quantification (LOQ), the relative percent difference (%RPD) of parent/FD results should be less than 20% (below 50% as recommended in the Naval Facilities Engineering Command (NAVFAC) Project Procedures Manual [DON 2007]).

Results of parent and FD samples with %RPDs between 20% - 50% have been flagged with "J"; above 50% have been flagged with "R".

## 2.1 Validation Qualifiers

Data qualification decisions were made in accordance with the procedures specified in the project QAPP and the laboratory subcontract statement of work (SOW).

The following data flags are used in this report:

"J" = Estimated: the compound was positively identified; the quantitation is an estimation due to discrepancies in meeting certain compound-specific QC criteria or because the concentration was between the LOQ and Detection Limit (DL).

"UJ" = The compound was not detected; however, the result is estimated due to discrepancies in meeting certain compound-specific QC criteria.

"B" = Blank contamination: The compound was found at a similar concentration in an associated blank above the DL, as well as in the sample.

"U" = Undetected: The compound was analyzed for, but not detected.

"R" = Rejected: The compound was analyzed for, but due to a major QC non-compliance, results were rejected.

## 3.0 SAMPLE IDS AND RELATED INFORMATION

| SDG | Field Sample ID | Colletion Date | Cooler Rec. Temp. | Lab |
|---|---|---|---|---|
| 14J130* | RHMW07-GW-01<br>RHMW07-GW-01 FD | October 20, 2014 | 5.7°C | EMAX |
| 14J144 | RHMW06-GW-01**<br>TB102114 | October 21, 2014 | 4.0°C & 5.7°C | EMAX |
| 14J206*** | RHMW07-GW-01<br>RHMW07-GW-01 FD<br>TB102714 | October 27, 2014 | 3.3°C | EMAX |
| 14K089 | HW111214-01<br>HW111214-02****<br>TRIP111214 | November 12, 2014 | 5.4°C | EMAX |
| 74672 | RHMW07-GW-01<br>RHMW07-GW-01 FD<br>TB102014 | October 20, 2014 | 2.5°C | APPL |
| 74701 | RHMW06-GW-01**<br>TB102114 | October 21, 2014 | 2.5°C | APPL |
| 74924 | HW111214-01<br>HW111214-02****<br>TRIP111214 | November 12, 2014 | 4.0°C | APPL |

* Due to the lack of a trip blank, neither sample was analyzed for TPH-GRO.

** Sample was designated as the parent sample for the matrix spike/matrix spike duplicate (MS/MSD) analyses.

*** Both samples and trip blank were recollected and analyzed for TPH-GRO only.

**** Sample HW111214-02 is the FD of HW111214-01.

All water samples were analyzed using the following extraction/analytical methods:

- VOCs by SW5030B/8260C;
- PAHs by SW3520C/8270C-SIM;
- TPH-GRO ($C_6 – C_{10}$) by SW5030B/8015B;
- TPH-DRO ($C_{10} – C_{24}$) and TPH-RRO ($C_{24} – C_{36}$) by SW3520C/8015B;
- EDB and DBCP by EPA Method 8011;

- Dissolved methane by RSK-175;
- Dissolved lead by SW3015/6020A;
- Nitrate-Nitrite by EPA Method 353.2;
- Total alkalinity by Standard Method (SM) 2320B; and
- Chloride and sulfate by EPA Method 9056D; chloride was only requested for sample RHMW07-GW-01.

All trip blanks were analyzed for VOCs by SW8260C or TPH-GRO by SW8015B.

Detailed validation results for each analytical method are presented in the following sections.

## 3.1 Sampling, Chain-of-Custody, and Sample Identification

Water samples were received in good condition, with no sample identification discrepancies, and were analyzed for the parameters noted on the chains-of-custody (CoCs). Samples collected on October 20, 2014 from RHMW07, were shipped without a trip blank for TPH-GRO analyses; therefore, the TPH-GRO analyses were cancelled. A sample for TPH-GRO analysis was re-collected from RHMW07 and shipped with a trip blank on October 27, 2014.

## 3.2 Method SW8011 – EDB and DBCP

All water samples collected were analyzed for EDB and DBCP using method SW8011.

### 3.2.1 Accuracy

Accuracy was evaluated using the %recovery (%R) obtained from the laboratory control samples (LCSs), MS/MSD, and surrogate analyses.

- **LCS:** Both %R results were within the QC acceptance limits.
- **MS/MSD:** Both %Rs were compliant.
- **Surrogate recoveries:** All %Rs of surrogate were compliant.

### 3.2.2 Precision

Precision was evaluated based on the relative percent difference (%RPD) of MS/MSD, and parent/FD sample results.

Both %RPDs of MS/MSD were compliant.

Both sets of parent and FD sample had no detections of these two target compounds at DLs.

### 3.2.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness meets project DQOs for the EDB and DBCP results. The following parameters were assessed for representativeness and results of the data review are noted:

- **Sample holding times and preservation**: The water samples were shipped on ice and were received at the laboratory at the appropriate temperature. Water samples were not acid-preserved. Analytical holding times (7 days) were met for all samples.
- **Initial calibration, Initial Calibration Verification, and Continuing Calibration Verification results**: Initial calibration, initial calibration verification (ICV) results, and continuing calibration verification (CCV) results met QC acceptance criteria. ICVs were prepared with secondary source standard.
- **Method blanks**: Target analytes were not detected at or above ½ of the LOQ in the method blanks (MBs).
- **Calibration Range Exceedance:** All sample results were within the calibration range.

#### 3.2.4 Sensitivity

Sensitivity was evaluated using the LOQ and DL for each sample as compared to the project practical quantitation limit (PQL). The laboratory LOQ met project PQL requirements.

#### 3.2.5 Comparability

Comparability was evaluated based on the analytical method requested on the CoC and performed by the laboratory compared to those described in the project QAPP and laboratory SOW. All samples were analyzed by the appropriate method requested on the CoC. Water sample results were reported in units of micrograms per liter (µg/L).

#### 3.2.6 Completeness

Completeness was evaluated by comparing the total number of samples collected to the total number of samples reported with valid analytical data. No data were qualified as "R" (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the water EDB and DBCP results.

### 3.3 Method SW8260C-VOCs

All water samples were analyzed for VOCs using method SW8260C. Samples were analyzed for a project-specific list of 41 VOCs.

#### 3.3.1 Accuracy

Accuracy was evaluated using the %R obtained from the surrogate spikes, LCS analyses, and MS/MSD analyses. Sample RHMW06-GW-01 was designated for the MS/MSD analyses. Evaluation results are shown below.

- **LCS recoveries:** All LCS %Rs met QC acceptance criteria.
- **Surrogate recoveries:** Surrogate compound recoveries for each field and lab QC samples met QC acceptance criteria**.**
- **MS/MSD %Rs:** In the MS, 12 analytes recovered above their upper control limit; in the MSD, 9 analytes recovered above their upper control limits. All other %Rs were compliant.

The parent sample had no detections of any of these non-compliant analytes; therefore flagging was not required.

### 3.3.2 Precision

Precision was evaluated based on the %RPD of the parent/FD results and MS/MSD results. The criterion for precision is %RPDs ≤20% for the parent/FD. Samples RHMW07-GW-01 and HW111214-01 were collected in duplicate.

All %RPDs of MS/MSD were compliant. None of the target VOCs were detected above the LOQ in the parent and FD samples of the RHMW07-GW-01 set; therefore, the %RPD calculation was not applicable.

Bromoform was detected in both parent and FD samples of HW111214-01 set with %RPD of 7.4%.

### 3.3.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness meets project DQOs for the VOC results. The following parameters were assessed for representativeness and results of the data review are noted:

- **Sample holding times and preservation**: The water samples were shipped on ice and were received at the laboratory at the appropriate temperature. Water samples and trip blank samples were not acid-preserved. All samples met project QAPP requirements for analysis holding times (7 days).
- **Instrument tuning data**: Mass spectral ion intensities met QC acceptance criteria.
- **Initial calibration and ICV results**: Initial calibration and ICV results met QC acceptance criteria. ICVs were also used as LCSs which were prepared with secondary source standard.
- **CCV results**: CCV results met QC acceptance criteria.
- **Internal standards**: Internal standard results met QC acceptance criteria.
- **Method blanks**: Target compounds were not detected at or above ½ of the LOQ in the MBs.
- **Trip blanks**: All trip blanks (denoted with "TB" in the sample name) were free of target compounds at DL except TB102014 and TB102114 have bromomethane detected at 1.5 µg/L and 1.2 µg/L respectively (LOQ = 2.0 µg/L and DL = 0.24 µg/L). None of the associated samples have this compound detected; therefore, flagging was not required.
- **Calibration Range Exceedance:** Final reported sample results were within the calibration range including diluted runs.

### 3.3.4 Sensitivity

Sensitivity was evaluated using the LOQs and DLs for each sample as compared to project maximum allowable PQLs. The laboratory LOQs met PQL requirements listed in the QAPP.

### 3.3.5 Comparability

Comparability was evaluated based on the analytical method requested on the CoC, and performed by the laboratory compared to those described in the project QAPP and DoD QSM Version 4.2. All samples were analyzed by the appropriate method requested on the CoC. Results were reported in units of µg/L.

### 3.3.6 Completeness

Completeness was evaluated by comparing the total number of samples collected with the total number of samples reported with valid analytical data. No data were qualified as "R" (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the water VOC results.

## 3.4 Method SW8270C-SIM PAHs

All water samples collected were analyzed for PAHs using method SW8270C-SIM. The project-specific compound list included 18 PAHs.

### 3.4.1 Accuracy

Accuracy was evaluated using the %R obtained from the surrogate spikes, LCS, LCS duplicate (LCSD), MS/MSD analyses. Sample RHMW06-MW-01 was designated for the MS/MSD analyses.

- **LCS/LCSD recoveries:** All LCS/LCSD %Rs met QC acceptance criteria.
- **Surrogate recoveries:** Surrogate compound recoveries for all field and lab QC samples met QC acceptance criteria.

### 3.4.2 Precision

Precision was evaluated based on the %RPD of the parent/FD, LCS/LCSD, and MS/MSD results.

For the parent/FD sample of RHMW06-GW-01 and HW111214-01, none of the target compounds were detected at or above the LOQ, therefore, the %RPD calculation is not applicable.

All %RPDs of MS/MSD were compliant.

The only non-compliant %RPD of LCS/LCSD was benzo(b)fluoranthene in the batch associated with samples HW111214-01 and HW111214-02. Since %Rs of the LCS and LCSD were compliant, and this compound was not detected in the two associated field samples; therefore flagging was not required.

### 3.4.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness met project DQOs for the PAH results. The following parameters were assessed for representativeness and results of the data review are noted:

- **Sample holding times and preservation**: The water samples were shipped on ice and were received at the laboratory at the appropriate temperature. Analytical holding times (7 days for extraction, 40 days for analysis) were met for all samples.
- **Instrument tuning data**: Mass spectral ion intensities met QC acceptance criteria.
- **Initial calibration, ICV, and CCV results**: Initial calibration, ICV results, and CCV results all met QC acceptance criteria. ICVs were prepared with secondary source standard.
- **Internal Standards:** All internal standard results met QC acceptance criteria.
- **Method blanks**: Target compounds were not detected at or above ½ of the LOQ in the MBs.
- **Calibration Range Exceedance:** Sample results were within the calibration range.
- **Naphthalene:** Due to the commonly observed lab contamination of this compound, Battelle agreed to raise the LOQ, LOD, and DL five times. The raised LOQ, 0.10 µg/L, is less than the PQL of 1.7 µg/L

#### 3.4.4 Sensitivity

Sensitivity was evaluated using the LOQs and DLs for each sample as compared to project PQLs. The laboratory LOQs met QAPP PQLs for all target compounds.

#### 3.4.5 Comparability

Comparability was evaluated based on the analytical method requested on the CoC and performed by the laboratory compared to those described in the project QAPP. All samples were analyzed by the appropriate method requested on the CoC. Results were reported in units of µg/L.

#### 3.4.6 Completeness

Completeness was evaluated by comparing the total number of samples collected with the total number of samples reported with valid analytical data. No data were qualified as "R" (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the water PAH results.

### 3.5 Method SW8015B TPH - GRO

All water samples collected were analyzed for TPH-GRO ($C_6$-$C_{10}$) using method SW8015B, with results reported as "TPH-GRO ($C_6$-$C_{10}$)."

#### 3.5.1 Accuracy

Accuracy was evaluated using the %R obtained from the surrogate spikes, LCS/LCSD, and MS/MSD analyses. Evaluation results are shown below.

- **LCS/LCSD recoveries:** All LCS/LCSD %R results met QC acceptance criteria.
- **MS/MSD recoveries:** Both MS and MSD %Rs were compliant.

- **Surrogate recoveries:** Surrogate compound recoveries for all field and lab QC samples met QC acceptance.

### 3.5.2 Precision

Precision was evaluated based on %RPD of the parent/FD samples and parent/FD results. The %RPD of LCS/LCSD and MS/MSD results were compliant.

TPH-GRO was not detected at or above the LOQ in both sets of parent and FD samples; therefore, the %RPD calculation was not applicable.

### 3.5.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness met project DQOs for the TPH-GRO results. The following parameters were assessed for representativeness and results of the data review are noted.

- **Sample holding times and preservation**: The water samples were shipped on ice and were received at the laboratory at the appropriate temperature. Water samples were not acid-preserved. Analytical holding times (7 days) were met for all samples.
- **Initial calibration, ICV and CCV results**: Initial calibration, ICV results, and CCV results met QC acceptance criteria. ICV was prepared with secondary source standard.
- **Method blanks**: No target compounds were detected in the MBs at or above ½ of the LOQ.
- **Trip blanks**: No target compounds were detected in the trip blanks at or above ½ of the LOQ.
- **Calibration Range Exceedance:** All sample results were within the calibration range.

### 3.5.4 Sensitivity

Sensitivity was evaluated using the RLs and MDLs for each sample as compared to project maximum allowable RLs. Sample-specific RLs and MDLs were adjusted for sample dilution.

### 3.5.5 Comparability

Comparability was evaluated based on analytical method requested on the CoC and performed by the laboratory compared to those described in the project QAPP and laboratory SOW. Results for water samples were reported in units of milligrams per liter (mg/L).

### 3.5.6 Completeness

Completeness was evaluated by comparing the total number of samples collected with the total number of samples reported with valid analytical data. No data were qualified as "R" (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the water TPH-GRO results.

## 3.6 Method SW8015B TPH-DRO ($C_{10}$ – $C_{24}$) and TPH-RRO ($C_{24}$ – $C_{36}$)

All water samples collected were analyzed for TPH-DRO ($C_{10}$ – $C_{24}$) organics and TPH-RRO ($C_{24}$ – $C_{36}$) organics by method SW8015B.

### 3.6.1 Accuracy

Accuracy was evaluated using the %R obtained from the surrogate spikes, LCS, LCSD, and MS/MSD analyses. Evaluation results are shown below.

- **LCS/LCSD recoveries:** All LCS/LCSD %R results for TPH-DRO and TPH-RRO met QC acceptance criteria.
- **Surrogate recoveries:** Surrogate compound recoveries for each sample met QC acceptance criteria.
- **MS/MSD:** %R of TPH-DRO and TPH-RRO were all compliant.

### 3.6.2 Precision

Precision was evaluated based on the %RPD of the parent/FD sample results, LCS/LCSD, and MS/MSD results.

The %RPDs of MS/MSD and LCS/LCSD for TPH-DRO and TPH-RRO were compliant.

None of the results of the two sets of parent and FD samples had TPH-DRO or TPH-RRO detected at or above the LOQ.

### 3.6.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness meets project DQOs for the TPH-DRO and TPH-RRO. The following parameters were assessed for representativeness and results of the data review are noted.

- **Sample holding times and preservation:** The water samples were shipped on ice and were received at the laboratory at an appropriate temperature. Analytical holding times (7 days for extraction, 40 days for analysis) were met for all analyses of the water samples.
- **Initial calibration, ICV and CCV results:** Initial calibration, ICV results, and CCV results met QC acceptance criteria. ICVs were prepared with secondary source standard.
- **Method blanks**: TPH-DRO and TPH-RRO were not detected at or above ½ of the LOQ in the MBs.
- **Calibration Range Exceedance:** All sample results were within the calibration range.
- There was a discrete peak in parent sample RHMW07-GW-01 and its FD. The TPH-DRO pattern of parent and FD did not match the pattern of the diesel standard used by the lab.
- The lab injected the TPH-DRO extract into the gas chromatography/mass spectrometry (GC/MS), ran the SW8260C, and looked for tentatively identified compounds (TICs). Initial evaluation found that the detected non-VOC target compound was butoxyacetic acid which was identified as one of the breakdown products of glycol drilling foam used during the drilling process of this well. This was concluded based on the results from a TIC approach.

- The lab recalculated the TPH-DRO result of the parent and FD samples without the discrete peak of each sample. Both samples had TPH-DRO detected below the LOQ, at 0.057 mg/L and 0.066 mg/L, respectively.

#### 3.6.4 Sensitivity

Sensitivity was evaluated using the LOQs and DLs for each group of TPH as compared to project PQLs. The laboratory LOQs met contract PQL requirements.

#### 3.6.5 Comparability

Comparability was evaluated based on the analytical method requested on the CoC and performed by the laboratory compared to those described in the project QAPP and laboratory SOW. All samples were analyzed for TPH-DRO and TPH-RRO as requested on the CoC. Results for water samples were reported in units of mg/L.

#### 3.5.6 Completeness

Completeness was evaluated by comparing the total number of samples collected to the total number of samples reported with valid analytical data. No data were qualified as "R" (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the water TPH-DRO and TPH-RRO results.

### 3.7 Method RSK-175 for Dissolved Methane

All water samples collected were analyzed for dissolved methane using method RSK-175.

#### 3.7.1 Accuracy

Accuracy was evaluated using the %R obtained from the LCS/LCSD and MS/MSD analyses.

- **LCS/LCSD recoveries:** The %R results were within the QC acceptance limits.
- **MS/MSD recoveries:** Lab did not run the requested MS/MSD by mistake.

#### 3.7.2 Precision

Precision was evaluated based on the %RPD of LCS/LCSD and parent/FD sample results.

The %RPD of the LCS/LCSD was compliant.

The %RPD for the parent/FD of sample RHMW07-GW-01 is 38% which is less than the 50% limit, but greater than 20%. Both parent and FD sample results were flagged with "J."

Methane was not detected in the parent/FD of sample HW111214-01.

#### 3.7.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness meets project DQOs for the methane results. The following parameters were assessed for representativeness and results of the data review are noted:

- **Sample holding times and preservation**: The water samples were shipped on ice and were received at the laboratory at appropriate temperature. Water samples were not acid-preserved. Analytical holding times (7 days) were met for all samples.
- **Initial calibration, ICV and CCV results**: Initial calibration, ICV results, and CCV results met QC acceptance criteria. ICV was prepared with secondary source standard.
- **Method blanks**: Methane was not detected at or above ½ of the LOQ in the MBs.
- **Calibration Range Exceedance:** All sample results were within the calibration range.

#### 3.7.4 Sensitivity

Sensitivity was evaluated using the LOQ and DL for each sample as compared to project PQL. The laboratory LOQ met project PQL requirements.

#### 3.7.5 Comparability

Comparability was evaluated based on the analytical method requested on the CoC and performed by the laboratory compared to those described in the project QAPP and laboratory SOW. All samples were analyzed by the appropriate method requested on the CoC. Methane results were reported in units of µg/L.

#### 3.7.6 Completeness

Completeness was evaluated by comparing the total number of samples collected with the total number of samples reported with valid analytical data. No data were qualified as "R" (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the water methane results.

### 3.8 Sulfate, Chloride, Nitrate-Nitrite as Nitrogen and Total Alkalinity (as CaCO3)

Water samples were analyzed for sulfate and chloride by method SW9056, nitrate-nitrite-N by EPA method 353.2, and total alkalinity by SM 2320B.

Sample RHMW07-GW-01 was the only sample requested for chloride analysis.

#### 3.8.1 Accuracy

Accuracy was evaluated using the %R obtained from LCS and/or LCSD analyses and MS/MSD analyses. LCSD was not performed for the sulfate and chloride analysis. Accuracy meets project DQOs. Evaluation results are shown below.

- **LCS/LCSD:** All %Rs were compliant.
- **MS/MSD:** All %Rs were compliant

#### 3.8.2 Precision

Analytical precision for alkalinity and nitrate-nitrite analyses was evaluated using the %RPD obtained from the LCS/LCSD analyses, MS/MSD, and parent/FD samples. For sulfate, the precision was evaluated based on MS/MSD and parent/FD results.

All %RPDs were met for all LCS/LCSD pairs and for all MS/MSD pairs.

For total alkalinity, %RPD for the parent/FD of sample RHMW07-GW-01 was compliant at 3.8% and for the parent/FD of sample HW111214-01 was compliant at 1.3%.

For nitrate-nitrite, the %RPD of the parent/FD results of sample HW111214-01 was compliant. Neither the parent nor FD result of sample RHMW07-GW-01 was detected at or above the LOQ.

For sulfate, the %RPDs for both sets of parent/FD results were compliant.

### 3.8.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness meets project DQOs for the sulfate, nitrate-nitrite, and alkalinity results.

The following parameters were assessed for representativeness and results of the data review are noted.

- **Sample holding times and preservation**: The water samples were shipped on ice and were received at the laboratory at appropriate temperature. Analytical holding times (sulfate, chloride, nitrate-nitrite-N, 28 days; total alkalinity, 14 days) were met for all samples.
- **Initial calibration, ICV and CCV results**: Initial calibration, ICV results, and CCV results met QC acceptance criteria. ICVs were prepared with secondary source standard.
- **Method blanks**: No target compounds were detected at or above ½ of the LOQ in the MBs.
- **Calibration range exceedance:** All sample results were within calibration range.

### 3.8.4 Sensitivity

Sensitivity was evaluated using the LOQs and DLs for each sample as compared to project PQLs. The laboratory LOQs met project PQL requirements for all results.

### 3.8.5 Comparability

Comparability was evaluated based on the analytical method requested on the CoC and performed by the laboratory compared to those described in the project QAPP. All samples were analyzed by the appropriate method requested on the CoC. Results were reported in units of mg/L.

### 3.8.6 Completeness

Completeness was evaluated by comparing the total number of samples collected to the total number of samples reported with valid analytical data. No data were qualified as “R” (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the nitrate-nitrite, sulfate, and alkalinity results.

## 3.9 SW6020A - Dissolved Lead

Filtered and acidified water samples were analyzed for dissolved lead by Method 6020A. All samples collected in October 2014 were field filtered. The two samples collected in November were not field filtered. APPL filtered and acidified those samples upon receipt.

Due to high sodium content in the samples, the digestate of groundwater was diluted with 2-fold dilution. All limits were elevated twice. Elevated LOQ was still lower than the project-required PQL. Potable water samples were analyzed without any dilution.

### 3.9.1 Accuracy

Accuracy was evaluated using the %R obtained from LCS and MS/MSD analyses. Accuracy meets project DQOs. Other than the requested MS/MSD for sample RHMW06-GW-01, the lab also performed MS/MSD analysis with sample HW111214-02. Evaluation results are shown below.

- **LCSs:** The %Rs were compliant.
- **MS/MSD:** Both %Rs were compliant for both sets of MS/MSD analyses.

### 3.9.2 Precision

Analytical precision was evaluated using the %RPD obtained from the MS/MSD and parent/FD samples.

The %RPDs of both set of MS/MSD were compliant.

Both the parent and FD of sample RHMW07-GW-01 had dissolved lead reported as non-detect; therefore the %RPD calculation was not applicable.

Sample HW111214-01 had dissolved lead reported as 12.2 µg/L and its FD had dissolved lead reported as 0.67 µg/L which is below the LOQ. The %RPD calculation is only applicable when both results are greater than LOQ. However, a "J" flag was applied by the data validator to the parent sample result due to the large difference between the two results.

### 3.9.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent actual site conditions. Analytical representativeness meets project DQOs for the lead results.

The following parameters were assessed for representativeness and results of the data review are noted.

- **Sample holding times and preservation**: The water samples were shipped on ice and were received at the laboratory at appropriate temperature. Analytical holding times (180 days) were met for all samples.
- **Initial calibration, ICV and CCV results**: Initial calibration, ICV results, and CCV results met QC acceptance criteria. ICV was prepared with secondary source standard.
- **Interference Check Solution A (ICSA) and Interference Check Solution AB (ICSAB)** results were compliant.
- **Method blanks**: Lead was not detected at or above ½ of the LOQ in the MBs.
- **Calibration range exceedance:** All sample results were within calibration range.

- A **Dilution Test (DT)** was performed with sample RHMW06-GW-01, but it was not applicable. A second DT was performed with sample HW111214-02 and it also was not applicable.
- A **Post-Digestion Spike (PDS) Analysis** was performed with the same samples and the %Rs were compliant for both sets of analyses.

#### 3.9.4 Sensitivity

Sensitivity was evaluated using the LOQs and DLs for each sample as compared to project PQLs. The laboratory LOQs met project PQL requirements for all results.

#### 3.9.5 Comparability

Comparability was evaluated based on the analytical method requested on the CoC, and performed by the laboratory compared to those described in the project QAPP. All samples were analyzed by the appropriate method requested on the CoC. Results were reported in units of µg/L.

#### 3.9.6 Completeness

Completeness was evaluated by comparing the total number of samples collected to the total number of samples reported with valid analytical data. No data were qualified as "R" (rejected) according to the project QAPP protocol. Completeness is 100% and meets project DQOs for the lead results.

## 4.0 DATA QUALITY ASSESSMENT

DQA criteria were used to evaluate the quality of the field sampling efforts and laboratory results for compliance with project DQOs. The DQA criteria were expressed in terms of analytical precision, accuracy, representativeness, sensitivity, comparability, and completeness by analytical method. Data qualification decisions were made in accordance with the procedures specified in the project QAPP and the DoD QSM Version 4.2 and professional judgment.

### 4.1 Precision

Precision is the measure of variability between individual sample measurements under prescribed conditions. The RPD for the LCS/LCSD and laboratory duplicate analyses demonstrate the precision of the analytical methods. An RPD within the DoD QSM-specific control limit indicates satisfactory precision in a measurement system. The RPD for the parent/FD demonstrates the precision of sampling technique.

Analytical precision RPD results (i.e. LCS/LCSD) for all methods for water samples were all in control except one of the target PAHs, benzo(b)fluoranthene, had %RPD greater than the criteria. However, it is the data validator's professional opinion that there was no impact to the data quality.

RPDs of MS/MSD results were evaluated for matrix effect.

The results for methane in sample RHMW07-GW-01 and its FD, and dissolved lead in sample HW111214-01 and its FD, had non-compliant %RPD and "J" flags have been applied to both parent and FD sample results.

## 4.2 Accuracy

Accuracy is the degree of agreement of a measurement with an accepted reference or true value. The results of surrogate and LCS/LCSD analyses, when expressed in terms of percent recovery, demonstrate the accuracy of the method. LCS spike recoveries indicate accuracy relevant to an analytical batch lot, and are strictly a measure of laboratory analytical accuracy conditions independent of samples and matrices. Surrogate spike recoveries provide a measure of accuracy for the analysis of each individual sample and also provide an indication of sample matrix effects. MS/MSD results were evaluated for sample matrix effect on the accuracy.

For VOC analysis, 12 analytes recovered above their upper control limit in the MS; 9 analytes recovered above their upper control limits in the MSD. The parent sample, RHMW06-GW-01, had no detections of any of these non-compliant analytes; therefore flagging was not required.

## 4.3 Representativeness

All sample data are believed to be representative of the site conditions prevailing at the time of sample collection because samples were properly collected, stored, and preserved. For samples having dilutions for a given analyte, only the diluted result was reported by the laboratory for project decision-making.

## 4.4 Sensitivity

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. Sensitivity requirements include the establishment of various limits such as calibration requirements, MDLs and RLs. Sensitivity requirements were established in accordance with the project-specific QAPP and DoD QSM Version 4.2. The QAPP-required PQLs were met. Sample-specific LOQs, LODs, and DLs for this data set were adjusted for the sample volume used in each analysis and the dilution factor, when applicable.

## 4.5 Comparability

All samples were reported in either µg/L or mg/L. Analytical protocols for the methods were adhered to according to the project QAPP, and analytical results are considered comparable under the compliant lab and field QC requirements.

## 4.6 Completeness

Completeness is defined as the percentage of laboratory measurements judged to be valid on a method-by-method basis. Valid data are defined as all data and/or qualified data considered to meet the DQOs for this project. Data completeness is expressed as percent complete, which is (the number of usable samples per compound ÷ total number of samples per compound) x 100. Completeness for this sampling event was 100% for all compounds and all water samples, understanding that all results qualified as estimated are usable to meet project objectives.

## 4.7 Conclusion

The overall quality assurance objective for all measurement data is to maximize the probability that the data generated are of documented quality, and are defensible for the intended

data uses. In order to meet these objectives, data shall be: (1) representative of actual site physical and chemical conditions; (2) comparable to the QAPP-required criteria; (3) complete to the extent that necessary conclusions may be reached; and (4) of known quantitative statistical significance in terms of precision and accuracy, at levels appropriate for each stated data use for the project. In general, these objectives have been met.

The water data are of acceptable quality and are considered usable to support project objectives. Samples are representative of the site when used in accordance with the validation qualifiers.

## 5.0 REFERENCES


Battelle and Parsons. 2014. *Final Work Plan/Sampling and Analysis Plan, Monitoring Well Installation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam*, Hawaii. Prepared for Naval Facilities Engineering Command, Hawaii. August.

Department of the Navy (DON), 2007. *Project Procedures Manual, U.S. Navy Installation Restoration Program, NAVFAC Pacific*, Prepared for Pacific Division, Naval Facilities Engineering Command (NAVFAC Pacific). February.

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# APPENDIX D

# SURVEYING

## SURVEYING

Surveying of RHMW06 and RHMW07 was conducted in November 2014 and January 2015 by Pacific GPS LLC (Pacific GPS) of Honolulu, Hawaii, a Hawaii-registered land surveyor, to determine horizontal and vertical coordinates of the two monitoring wells. The monitoring wells were initially surveyed on November 17, 2014 using Global Navigation Satellite System (GNSS) Global Positioning System (GPS) receivers. The well coordinates were surveyed with respect to three nearby local reference points recently established by the U.S. Geological Survey (USGS) at the Facility and one existing control monument that was used in earlier surveys of Facility monitoring wells. The USGS reference points were specifically established so that a common control point could be used for surveying all new monitoring wells at the Facility. The coordinate values of the USGS reference points were provided to Battelle and Pacific GPS by the Navy. Pacific GPS confirmed the reference point information with a representative from the National Geodetic Survey prior to completion of the well survey to ensure that datum references and reference systems were consistent between the USGS and Pacific GPS.

The horizontal datum for the reported horizontal coordinates of RHMW06 and RHMW07 is: NAD83 (A11); Epoch of 2010. The vertical datum for the reported elevations of the monitoring wells is: Local Mean Sea Level. The Pacific GPS survey report (2015) including horizontal coordinates and elevations in feet and meters for RHMW06 and RHMW07, and the coordinates and elevations for the USGS reference points is provided in Attachment D.1. The horizontal coordinates and elevations in feet are also provided on the geologic boring and well construction logs in Appendix A.

The horizontal coordinate and elevation of each monitoring well were established on the black reference mark located on the sounding tube gauge of each well (see Attachment D.1, Figure 2). The horizontal coordinate and elevation of the sounding tube reference mark were established by plumbing a GNSS antenna directly over the top of the reference mark. Elevations of the top of the steel protective well casing and the top of the concrete base were established by use of a pocket tape and measuring up from the reference mark to the top of the steel protective well casing and down from the top of the steel protective well casing to the top of the concrete base. The accuracy of the horizontal control was to 0.1 foot and the accuracy of the vertical control was to 0.01 foot.

Groundwater elevations were calculated using the initial GPS survey data and the groundwater table was anomalously higher at downgradient monitoring well RHMW07 than at RHMW06. An optical level survey was performed on January 8, 2015 to check the GPS survey results for both monitoring wells. The optic level survey results confirmed the accuracy of the previously measured well elevations and provide independent verification that the adjusted elevations of the well from the GPS survey are within the expected accuracy of the survey.

# ATTACHMENT D.1

# SURVEY REPORT

# FINAL REPORT

## Red Hill Fuel Storage Facility
## Monitoring Well As-Built Survey

*Prepared for:*

Battelle
The Business of Innovation

PO: US001-0000441015

*Prepared by:*

Pacific GPS LLC

**November 2014**

**Revised: January 2015**

## Introduction

Under contract with Battelle, Pacific GPS conducted an as-built survey of 2 new monitoring wells at the Red Hill Fuel Storage Facility located on the island of Oahu, Hawaii. The purpose of the survey was to establish a horizontal coordinate and elevation on a reference mark of each well and, via measure-ups, an elevation on the top of the well casing and of top of the concrete base of each well. These well locations were surveyed with respect to local reference points recently established by the USGS on the Red Hill Facility as well as one NGS control monument that was used in legacy surveys of Red Hill Facility monitoring wells.

The coordinates and elevations of the new monitoring wells were established by constraining the survey network to 3 reference points recently established by the USGS. The coordinate values of the new reference points were provided by Battelle in a document entitled *REDHILLCOORD_for_Bruce.txt* (see Appendix).

The horizontal datum for the reported coordinates of the new monitoring wells is:

**NAD83 (PA11); Epoch of 2010.0**

The vertical datum for the reported elevations of the new monitoring wells is:

**Local Mean Sea Level**

## Contact Information

The Pacific GPS installation and survey was completed on November 17th, 2014. Technical questions or comments regarding the survey or this report can be directed to:

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## New Monitoring Wells

Two new monitoring wells were built on the Red Hill Fuel Storage Facility. A horizontal coordinate was established on the "Black Mark" located on the gauge of each monitoring well (see Figure 2).

The coordinate and elevation of the reference mark were established by plumbing the GNSS antenna directly over the top of the mark (see Figure 1).

Elevations of the top of the casing and the top of the concrete base were established by use of a pocket tape and measuring:

1. Up from the reference mark to the top of the casing, and
2. Down from the top of the casing to the top of the concrete base.

Figure 1. New Monitoring Well

Figure 2. Gauge Reference Mark

## Well Survey and Results

One Trimble R7 and one Trimble R10 GNSS receiver were used for the static GPS observations in this survey. A minimum of 20 minutes of common occupation time was recorded for each baseline. Antenna heights were measured in both meters and feet and reduced and compared in the field prior to changing locations.

All baseline vectors were processed using the Trimble Business Center software. Fixed bias solutions were obtained for all baselines.

The International GPS Service for Geodynamics (IGS) rapid precise orbits ('igr') were used for in the processing of all baseline vectors. The horizontal and vertical GPS loop misclosures were reviewed and found to satisfy the FGCS specifications for First Order static GPS surveys (see Table 1).

**Absolute Loop Misclosures**

| Loop | Horizontal Misclosure [mm] | Vertical Misclosure [mm] | Loop Length [meters] | PPM |
|---|---|---|---|---|
| Ref2 - Well2 - Ref3 - Ref2 | 8 | 35 | 1116 | 31.80 |
| Ref2 - Well1 - Well2 - Ref2 | 22 | 1 | 953 | 22.90 |
| Chigui - Ref2 - Well1 - Ref1 - Adit3 - Chigui | 39 | 13 | 4101 | 10.10 |

**Table 1. Absolute Loop Misclosures**

A minimally constrained network adjustment was executed using Microsearch™ Geolab 3-D network adjustment software. The published horizontal geodetic coordinates and elevation of one existing reference point was held as the minimal constraint. *A priori* weights for the observations are based on the variance-covariance sub-matrices estimated by Trimble Business Center.

In the minimally constrained adjustment, the estimated variance factor of 0.9997 passed the $\chi^2$-test at the 95% level of confidence indicating appropriate *a priori* estimates of the accuracy of the GPS observations. A review of the 95% relative confidence regions (ellipses) reveals that the relative network accuracy satisfies the FGCS requirements for First Order relative geodetic GPS positioning (1:100,000).

A fully constrained network adjustment was then performed on the appropriate datum as realized by the published coordinates and elevations of the USGS Reference Monuments (Ref1, Ref2, Ref3). The geoid model, Geoid12A, was introduced into the adjustment in a *relative* sense to derive elevations for the new monitoring well reference marks.

The coordinates and elevations of the three reference monuments were applied as provided by the Client (see Appendix).

In the constrained adjustment, the estimated variance factor (0.9856) passed the $\chi 2$–test at the 95% level of confidence. No observations were flagged for possible rejection, an additional indication that the introduction of the constraints did not unduly distort the network.

As part of this survey effort, the NGS control point, CHIGUI, was recovered and occupied. Point CHIGUI served as a control point for a previous survey conducted by Pacific GPS in September of 2009. Although the published coordinates of CHIGUI were not used as a constraint in this survey, they were compared with the derived values from the adjustment. The northing, easting, and orthometric height differences between the derived values versus the published values were -0.009, -0.01, and -0.045 meters respectively.

In addition, a second legacy control point, ADIT3, was believed to have been recovered and occupied. Subsequent to the survey, the calculations revealed that the recovered point was not ADIT3, but rather a point hailing from a previous large-scale aerial photo survey (implied by the aerial target painted on the point) and for the purpose of identification hereinafter referred to as simply 'FX'.

In an effort to further validate the accuracy of the GPS-derived elevations of the wells, and to strengthen the vertical component of the survey, a level run was executed in January of 2015. A Leica NA 720 automatic level was used to observe orthometric elevation differences from Reference 3 to Reference 2 with side shots to each of the well points of interest. Table 2 summarizes the observations and derived elevations holding the published elevation of Reference 3 fixed.

The elevation difference values were further introduced into the final constrained adjustment with an observation weight of 1 millimeter at 1 standard deviation to assist in the derivation of the well elevations.

The final coordinates and elevations of the new well site reference marks are reported in Table 3.

**Figure 3. Observing Level Measurements**

## Red Hill Monitoring Well Level Run; January 2015

**Linear Unit: U.S. Survey Foot**

| Station | BS | FS | Derived Elev. | Pub Elev. | Surveyed Elev. | Delta |
|---|---|---|---|---|---|---|
| Observations | | | | Calculations | | |
| REF 3 | 0.18 | | | 269.85 | | |
| TP1 | 2.41 | 8.76 | 261.27 | | | |
| Well 2 - Gauge | | 4.58 | 259.10 | | 259.01 | **-0.09** |
| Well 2 - Casing | | 4.00 | 259.68 | | 259.59 | **-0.09** |
| Well 2 - Concrete | | 6.89 | 256.79 | | 256.71 | **-0.08** |
| TP2 | 0.11 | 7.15 | 256.53 | | | |
| TP3 | 0.08 | 10.44 | 246.20 | | | |
| TP4 | 1.55 | 9.54 | 236.74 | | | |
| TP5 | 1.50 | 7.89 | 230.40 | | | |
| TP6 | 0.20 | 8.93 | 222.97 | | | |
| Well 3 - Gauge | | 2.85 | 220.32 | | 220.29 | **-0.03** |
| Well 3 - Casing | | 2.43 | 220.74 | | 220.71 | **-0.03** |
| Well 3 - Concrete | | 5.72 | 217.45 | | 217.43 | **-0.02** |
| TP7 | 0.32 | 11.19 | 211.98 | | | |
| TP8 | 2.77 | 9.99 | 202.31 | | | |
| REF 2 | | 7.00 | 198.08 | 198.10 | | **0.02** |

Table 2. Automatic Level Observations

## Red Hill Monitoring Well Survey; November 2014

Horizontal Datum: NAD83 (2011); Epoch of 2010.0
Vertical Datum: Local Mean Sea Level
Projection: Hawaii Zone 3
Linear Unit: U.S. Survey Foot

| Well | Reference | Latitude | ° | ' | " | Longitude | ° | ' | " | Ellipsoid Height | Northing | Easting | Elevation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well 1 | Gauge Ref Mark | N | 21 | 22 | 22.82633 | W | 157 | 53 | 52.08911 | 271.98 | 74964.96 | 1675189.52 | 220.29 |
| | Top of Casing | | | | | | | | | 272.40 | | | 220.71 |
| | Top of Concrete | | | | | | | | | 269.12 | | | 217.43 |
| Well 2 | Gauge Ref Mark | N | 21 | 22 | 26.41531 | W | 157 | 53 | 40.61056 | 310.77 | 75327.83 | 1676274.17 | 259.01 |
| | Top of Casing | | | | | | | | | 311.35 | | | 259.59 |
| | Top of Concrete | | | | | | | | | 308.47 | | | 256.71 |

Linear Unit: International Meter

| Well | Reference | Latitude | ° | ' | " | Longitude | ° | ' | " | Ellipsoid Height | Northing | Easting | Elevation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well 1 | Gauge Ref Mark | N | 21 | 22 | 22.82633 | W | 157 | 53 | 52.08911 | 82.901 | 22849.367 | 510598.787 | 67.144 |
| | Top of Casing | | | | | | | | | 83.028 | | | 67.271 |
| | Top of Concrete | | | | | | | | | 82.028 | | | 66.271 |
| Well 2 | Gauge Ref Mark | N | 21 | 22 | 26.41531 | W | 157 | 53 | 40.61056 | 94.723 | 22959.967 | 510929.388 | 78.946 |
| | Top of Casing | | | | | | | | | 94.900 | | | 79.123 |
| | Top of Concrete | | | | | | | | | 94.021 | | | 78.244 |

**Table 3. Final Coordinates and Elevations**

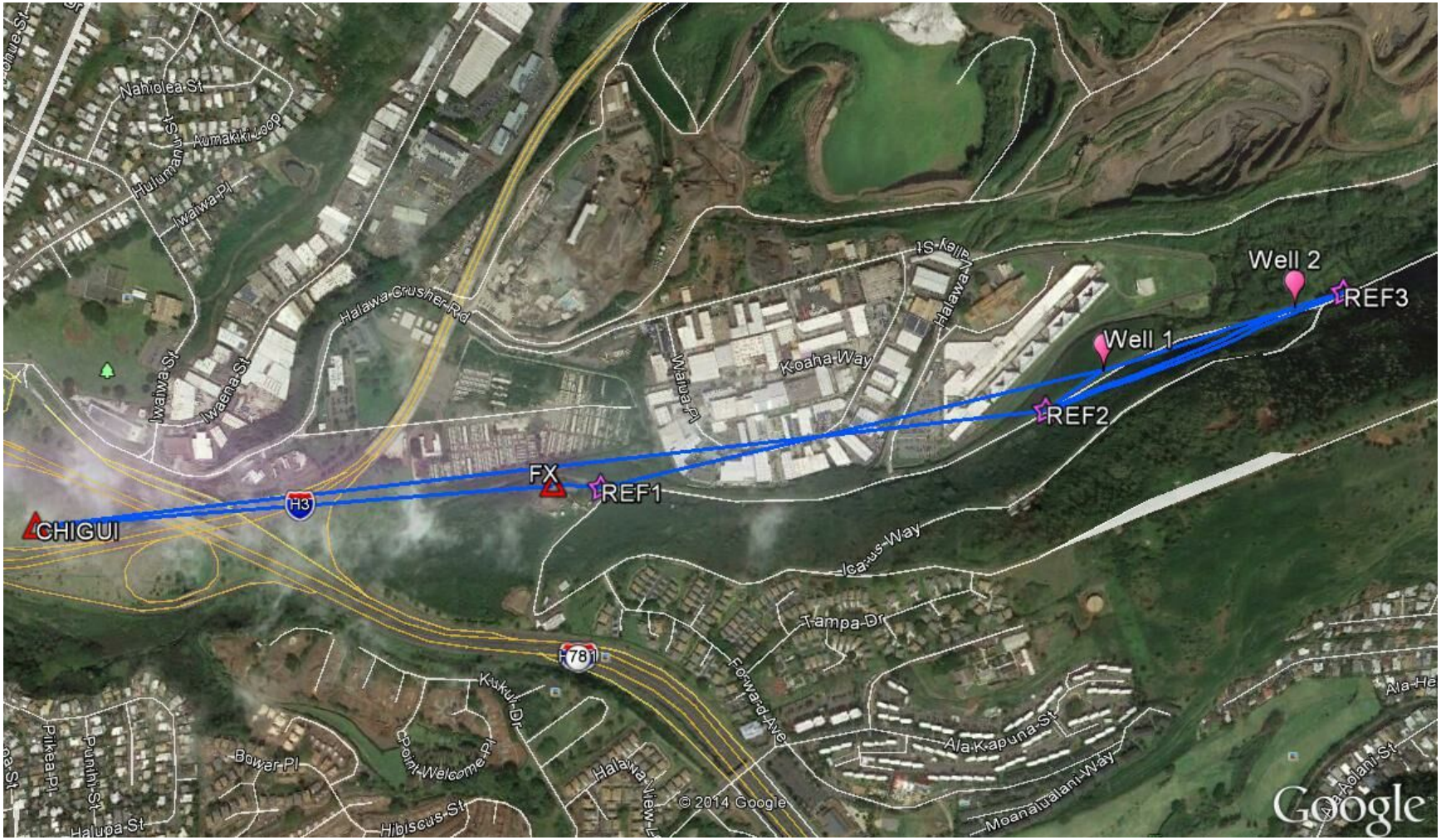


**Figure 4. Network Diagram**

# APPENDIX

## USGS Reference Mark Coordinate Values

USGS - RED HILL GPS PROJECT 2014
HORIZONTAL DATUM - NAD83(PA11)
VERTICAL DATUN - LOCAL MEAN SEA LEVEL

| Code | Station Name | Latitude | Longitude | Orthometric height (m) |
|---|---|---|---|---|
| Ref1 | OWNW RED HILL WELL | 21 22 15.72836N | 157 54 24.43047W | 40.55 |
| Ref2 | RED HILL MW SITE | 21 22 20.48342N | 157 53 55.80300W | 60.38 |
| Ref3 | RM AT ADIT 6 | 21 22 27.31518N | 157 53 37.88083W | 82.25 |

# APPENDIX E

# IDW CHARACTERIZATION AND DISPOSAL

## IDW CHARACTERIZATON AND DISPOSAL

This section describes the characterization and disposal of IDW generated during the RHMW06 and RHMW07 monitoring well installation program, and subsequent groundwater sampling. The IDW generated during field activities was managed and disposed in accordance with the Final Work Plan (Battelle and Parsons, 2014).

IDW included soil and rock cuttings generated during borehole drilling operations, well development and purge water, and decontamination water. Rock cores were retained by NAVFAC Hawaii for future reference. Pacific Commercial Services LLC (PCS) in Kapolei, Hawaii was subcontracted for IDW services, which included providing waste containers for solids; IDW sampling, characterizing, and profiling, obtaining disposal manifest approvals and signatures from the Navy, and final off-site disposal. Valley Well Drilling provided 55-gallon steel drums for water containment.

Soil and rock cuttings and water IDW generated from RHMW06 and RHMW07 were temporarily staged at the drill locations within the fenced area of the Facility. The drill cuttings were contained in 10-yard, lined, roll-off bins (one per location) and development/purge/decontamination water was contained in eight 55-gallon steel drums Non-hazardous waste labels with the required labeling information were placed on the IDW containers. These labels included contract information, site activity, date, contents, project type, comments, and NAVFAC Hawaii contact information.

PCS characterized the IDW staged at the monitoring well locations. One composite sample was collected from each of the RHMW06 and RHMW07 roll-off bins containing drill cuttings on October 13, 2014. Composite water samples (one sample per well) were collected from the drums at each well location on October 13, 2014. The soil and water samples were submitted to Environmental Services Network Pacific Inc. in Honolulu, Hawaii on October 13, 2014 for the following analyses:

Solids and water - volatile organic compounds by EPA Method 8260; the analyte list included:

- Benzene;
- Toluene;
- Ethylbenzene; and

- Xylenes.

Solids - Polynuclear aromatic hydrocarbons by USEPA Method SW8270 (DOH-4); the analyte list included:

- Acenaphthylene;
- Benzo(a)pyrene;
- Fluoranthene; and
- Naphthalene.

Solids - TPH by USEPA Method SW8015M; the analyte list included:

- TPH-DRO.

Solids and Water - Metals by USEPA Method SW6010; the analyte list included:

- Total lead (solids); and
- Dissolved lead (water).

Water – potential of Hydrogen (pH) by USEPA Method 9040/9045.

Based on IDW characterization results, lead in the IDW solids sample from RHMW06 was the only constituent detected in any waste stream, and was detected at a concentration well below the Resource Conservation and Recovery Act land disposal concentration for lead. The pH values of the water samples were between 7.02 and 7.95. The solids and water analytical results are provided in Attachment E.1.

PCS prepared non-hazardous waste manifests for the solids and water, and submitted the manifests to the NAVFAC Hawaii environmental directorate for approval and signature. The solids qualified for disposal in a Class 2 landfill and were disposed of at the PVT Land Company landfill. The water qualified for treatment and disposal at Unitek Solvent Services and was disposed of at this facility.

The solids and water containers were transported from the monitoring well locations on November 17, 2014 and the solids were received by the PVT landfill on November 18, 2014. The drums of water were transported by PCS to the PCS warehouse for temporary storage until Unitek Solvent Services scheduled a pump truck to remove the water from the drums and transport the water to the Unitek Solvent Services facility. Unitek Solvent Services does not accept drums or other containers of water directly at its facility. The water was pumped from the drums into a

pump truck and transported to the Unitek Solvent Services facility on November 24, 2014. Unitek Solvent Services signed for the water on November 26, 2014. The signed, non-hazardous waste disposal manifests for solids and water are provided in Attachment E.2.

# ATTACHMENT E.1

# IDW ANALYTICAL RESULTS

**Environmental Services Network**

October 17, 2014

Jingbo Chang
Pacific Commercial Services, LLC
PO Box 235117
Honolulu, HI 96823

**SUBJECT:** DATA REPORT – 300238-01, Red Hill Fuel Storage Facility, Aiea, HI

**ESN Project # D1410130420**

Mr. Chang:

Please find enclosed a data report for the samples analyzed from the above referenced project for Pacific Commercial Services, LLC. The samples were received intact. Applicable detection limits, QA/QC data, and any issues encountered during analysis are included in the report.

The following tests were conducted:

- Analyses for aromatic volatile organics by EPA 8260.
- Analyses for TPH as diesel by EPA 8015 mod.
- Analyses for polynuclear aromatic hydrocarbons by EPA 8270.
- Analyses for total and dissolved lead by EPA 6020.
- Analyses for pH by EPA 9040/9045.

ESN appreciates the opportunity to have provided analytical services to Pacific Commercial Services, LLC on this project. If you have any further questions relating to the data or report, please do not hesitate to contact us.

Sincerely,

Karen Carvallo

Karen Carvallo
Operations Manager

ESN Pacific
2020-B Kahai Street
Honolulu, HI 96819

Ph: (808) 847-0067
esn@esnpacific.com

# ESN PACIFIC'S CHAIN-OF-CUSTODY RECORD

CLIENT: PACIFIC COMMERCIAL SERVICES LLC

ADDRESS: PO BOX 235117, HONOLULU, HI 96823

PHONE: 808-545-4599 FAX: 808-845-9773

EMAIL:Jingbo.chang@pcshi.com PO # 300238-01

CLIENT PROJECT #: 300238-01 Project Manager : Jingbo Chang

TAT (circle one): 24-hr. 48-hr. ~~5-day~~ or Other: 3-day

DATE: 10/13/2014 PAGE 1 OF 1

ESN PROJECT #: D1410130420

LOCATION/PROJECT NAME: Red Hill Fuel Storage Facility, Aiea, HI

COLLECTOR Wendi Zheng DATE COLLECTED: 10/13/2014

| | Sample ID# | Depth | Time | Sample Type | Container Type | 8260 HVOC ext 5035? Y N | 8260 VOC ext 5035? Y N | 8260 BTEX ext 5035? Y N | 8260 MtBE ext 5035? Y N | 8015 Fuel Scan only | 8015 TPH-Gas ext 5035? | 8015 TPH-Diesel | 8015 TPH-Oil | 8081 Chlor. Pesticides | 8082 PCB | 8270 PAH DOH-4 | 8270 PAH EPA-16 | VOCs | PCBs | Total lead | Dissolved lead | TCLP Hg | pH | TSS (SM18 2540D) | Turbidity MCAWW180.1rev2 | O&G(EPA1664A) | Comments | # of Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RHMW06-Soil | | 9:50 | S | | | | X | | | | X | | | | X | | | | X | | | | | | | | 2 |
| 2 | RHMW07-Soil | | 9:40 | S | | | | X | | | | X | | | | X | | | | X | | | | | | | | 2 |
| 3 | RHMW06-Water | | 10:00 | W | | | | X | | | | | | | | | | | | | X | | X | | | | | 6 |
| 4 | RHMW07-Water | | 9:30 | W | | | | X | | | | | | | | | | | | | X | | X | | | | | 6 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

RELINQUISHED BY:(Signature) DATE/TIME 10.13.14 11:00

RECIEVED BY (Signature) DATE/TIME 10/13/14 11:00

RELINQUISHED BY:(Signature) DATE/TIME

RECIEVED BY (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS: ____ ESN @ $5.00/sample or ____ Return to Client

SAMPLE RECEIPT:

TOTAL # OF CONTAINERS 16

COC SEALS Y / N / NA

SEALS INTACT Y / N / NA

RECEIVED TEMP: 0°C

LABORATORY NOTES:

Environmental Services Network

PCS - Pacific Commercial Services PROJECT #300238-01

Red Hill Fuel Storage Facility, Aiea, HI

ESN Project #D1410130420

pH ANALYSIS BY EPA METHOD 9040/9045

| SAMPLE NUMBER | DATE SAMPLED | DATE ANALYZED | pH | Flags |
|---|---|---|---|---|
| Method Blank | - | 10/13/2014 | 7.02 | |
| RHMW06-Water | 10/13/2014 | 10/13/2014 | 7.61 | |
| RHMW07-Water | 10/13/2014 | 10/13/2014 | 7.94 | |
| RHMW07-Water Dup | 10/13/2014 | 10/13/2014 | 7.95 | |

ANALYSES PERFORMED BY : Z. Tullis
DATA REVIEWED BY: K. Carvallo

## ESN NORTHWEST CHEMISTRY LABORATORY

Pacific Commercial Services, LLC
PROJECT RED HILL FUEL STORAGE
PROJECT #300238-01
ESN PROJECT #D1410130420
Aiea, Hawaii

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

**Analysis of Diesel Range Organics in Soil**
**by Method 8015 Modified**

| Sample Number | Date Prepared | Date Analyzed | Surrogate Recovery (%) | Diesel Range Organics (mg/kg) |
|---|---|---|---|---|
| Method Blank | 10/14/2014 | 10/14/2014 | 120 | nd |
| LCS | 10/14/2014 | 10/14/2014 | 147 | 80% |
| RHMW06-Soil | 10/14/2014 | 10/14/2014 | 104 | nd |
| RHMW07-Soil | 10/14/2014 | 10/14/2014 | 113 | nd |
| Reporting Limits | | | | 50 |

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**ESN NORTHWEST CHEMISTRY LABORATORY**

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(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

**Analyses of BTEX in Soil by Method 8260**

| Sample Number | Date Prepared | Date Analyzed | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | Surrogate Recovery (%) |
|---|---|---|---|---|---|---|---|
| Method Blank | 10/15/2014 | 10/15/2014 | nd | nd | nd | nd | 116 |
| LCS | 10/15/2014 | 10/15/2014 | 96% | 102% | 97% | 88% | 109 |
| LCSD | 10/15/2014 | 10/15/2014 | 87% | 96% | 82% | 85% | 103 |
| RHMW06-Soil | 10/14/2014 | 10/15/2014 | nd | nd | nd | nd | 112 |
| RHMW07-Soil | 10/14/2014 | 10/15/2014 | nd | nd | nd | nd | 102 |
| Method Detection Limits | | | 0.02 | 0.05 | 0.05 | 0.15 | |

"nd" Indicates not detected at the listed detection limits

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (4-Bromofluorobenzene) & LCS : 65% TO 135%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Pacific Commercial Services, LLC
PROJECT RED HILL FUEL STORAGE
PROJECT #300238-01
ESN PROJECT #D1410130420
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Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

**Analyses of BTEX in Water by Method 8260**

| Sample Number | Date Analyzed | Benzene (ug/L) | Toluene (ug/L) | Ethylbenzene (ug/L) | Xylenes (ug/L) | Surrogate Recovery (%) |
|---|---|---|---|---|---|---|
| Method Blank | 10/14/2014 | nd | nd | nd | nd | 111 |
| LCS | 10/14/2014 | 108% | 116% | 116% | 117% | 115 |
| LCSD | 10/14/2014 | 85% | 93% | 86% | 84% | 107 |
| RHWM06-Water | 10/14/2014 | nd | nd | nd | nd | 107 |
| RHWM07-Water | 10/14/2014 | nd | nd | nd | nd | 107 |
| | | 1.0 | 1.0 | 1.0 | 3.0 | |

"nd" Indicates not detected at the listed detection limits

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (4-Bromofluorobenzene) & LCS : 65% TO 135%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Pacific Commercial Services
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ESN PROJECT #D1410130420
Aiea, Hawaii

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1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

**Analysis of Polynuclear Aromatic Hydrocarbons (DOH4) in Soil by Method 8270**

| | | MTH BLK | LCS | RHMW06-Soil | RHWM07-Soil | MS | MSD | RPD |
|---|---|---|---|---|---|---|---|---|
| Date extracted | Reporting | 10/14/14 | 10/14/14 | 10/14/14 | 10/14/14 | 10/14/14 | 10/14/14 | |
| Date analyzed | Limits | 10/14/14 | 10/14/14 | 10/14/14 | 10/14/14 | 10/14/14 | 10/14/14 | |
| Moisture, % | (mg/kg) | | | 21% | 7% | | | |
| Acenaphthene | 0.02 | nd | 107% | nd | nd | 115% | 99% | 15% |
| Benzo(a)pyrene* | 0.02 | nd | 148% | nd | nd | | | |
| Fluoranthene | 0.02 | nd | 136% | nd | nd | | | |
| Naphthalene | 0.02 | nd | 115% | nd | nd | | | |
| Total Carcinogens | | | | nd | nd | | | |
| Surrogate recoveries: | | | | | | | | |
| 2-Fluorobiphenyl | | 113% | 98% | 112% | 117% | 106% | 100% | |
| p-Terphenyl-d14 | | 132% | 116% | 121% | 132% | 124% | 108% | |

Data Qualifiers and Analytical Comments

* - Carcinogenic Analyte
nd - not detected at listed reporting limits
Results reported on dry-weight basis
Acceptable Recovery limits: 50% TO 150%
Acceptable RPD limit: 35%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Pacific Commercial Services, LLC
PROJECT RED HILL FUEL STORAGE
PROJECT #300238-01
ESN PROJECT #D1410130420
Aiea, Hawaii

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

**Analysis of Total Lead in Soil by Method 6020A/3050B**

| Sample Number | Date Prepared | Date Analyzed | Lead (Pb) (mg/kg) |
|---|---|---|---|
| Method Blank | 10/15/2014 | 10/16/2014 | nd |
| RHMW06-Soil | 10/15/2014 | 10/16/2014 | **9.7** |
| RHMW07-Soil | 10/15/2014 | 10/16/2014 | nd |
| Reporting Limit | | | 5.0 |

"nd" Indicates not detected at listed detection limits.

**QA/QC Data - Analysis of Total Metals in Soil by Method 6020A/3050B**

| Sample Number: QC Batch | Matrix Spike | | | Matrix Spike Duplicate | | | RPD |
|---|---|---|---|---|---|---|---|
| | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) | (%) |
| Lead (Pb) | 98.5 | 86.2 | 87.5 | 87.7 | 81.0 | 92.4 | 5.39 |

| | Laboratory Control Sample | | |
|---|---|---|---|
| | Spiked Conc. (mg/kg) | Measured Conc. (mg/kg) | Spike Recovery (%) |
| Lead (Pb) | 100 | 86.1 | 86.1 |

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%
ACCEPTABLE RPD IS 35%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Pacific Commercial Services, LLC
PROJECT RED HILL FUEL STORAGE
PROJECT #300238-01
ESN PROJECT #D1410130420
Aiea, Hawaii

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

**Dissolved Lead in Water by EPA-6020 Method**

| Sample Number | Date Analyzed | Lead (Pb) (ug/L) |
|---|---|---|
| Method Blank | 10/16/2014 | nd |
| RHMW06-Water | 10/16/2014 | nd |
| RHMW07-Water | 10/16/2014 | nd |
| RHMW07-Water Duplicate | 10/16/2014 | nd |
| Reporting Limit | | 2.0 |

"nd" Indicates not detected at listed detection limits.

**QA/QC Data - Dissolved Metals EPA-6020**

| | Laboratory Control Sample | | | Laboratory Control Sample Duplicate | | | RPD |
|---|---|---|---|---|---|---|---|
| | Spiked Conc. (ug/L) | Measured Conc. (ug/L) | Spike Recovery (%) | Spiked Conc. (ug/L) | Measured Conc. (ug/L) | Spike Recovery (%) | (%) |
| Lead (Pb) | 20.0 | 19.7 | 98.5 | 20.0 | 19.5 | 97.5 | 1.0 |

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%
ACCEPTABLE RPD IS 35%

# ATTACHMENT E.2

# WASTE MANIFESTS

Wesag 143

| NON-HAZARDOUS WASTE MANIFEST | 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Waste Tracking Number |
|---|---|---|---|---|
| | HIR 000 050 401 | 1 | 808-206-9989 | 000024721 |

**GENERATOR**

5. Generator's Name and Mailing Address
COMNAVREG HAWAII, C/O NAVFAC HAWAII, CODE PRJ42
400 MARSHALL ROAD, ATTN: ESTRELITA HIGA
JBPHH, HI 96860-3139
Generator's Phone: 808-471-4216

Generator's Site Address (if different than mailing address)
HIC300228-01-1
RED HILL BULK FUEL STORAGE FACILITY
AIEA, HI 96701

6. Transporter 1 Company Name
WEST OAHU AGGREGATE 808-668-1969
U.S. EPA ID Number: NOT APPLICABLE

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
PVT LAND COMPANY, LTD.
87-2020 FARRINGTON HIGHWAY
WAIANAE, HI 96792
Facility's Phone: 808-668-4561
U.S. EPA ID Number: NOT APPLICABLE

| | 9. Waste Shipping Name and Description | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | |
|---|---|---|---|---|---|---|
| | 1. MATERIAL NOT REGULATED BY DOT (IDW SOIL CUTTINGS) | 001 | CM | 14000 | P | NON-RCRA |
| | 2. | | | | | |
| | 3. | | | | | |
| | 4. | | | | | |

13. Special Handling Instructions and Additional Information
9b1: NR
9b2: *
9b3: *
9b4: *
Clearance #92266

2012 9b1:
ERG# 9b2:
DO/JOE 9b3:
300228 9b4:

SEND COPY TO:
PCS LLC
P.O. BOX 235117
HONOLULU, HI 96823

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: JINGBO CHANG for the Navy
Signature:
Month 11 Day 17 Year 14

**INT'L**

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JESSE SOGI
Signature:
Month 11 Day 18 Year 14
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

**DESIGNATED FACILITY**

17. Discrepancy
17a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
6.81 tons
Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Margot DeSolo
Signature:
Month 11 Day 18 Year 14

Wesag 120

| NON-HAZARDOUS WASTE MANIFEST | 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Waste Tracking Number |
|---|---|---|---|---|
| | HIR 000 050 401 | 1 | 808-206-9989 | 000024722 |

5. Generator's Name and Mailing Address
COMNAVREG HAWAII, C/O NAVFAC HAWAII, CODE PRJ42
400 MARSHALL ROAD, ATTN: ESTRELITA HIGA
JBPHH, HI 96860-3139
Generator's Phone: 808-471-4216

Generator's Site Address (if different than mailing address)
HIC300228-01-2
RED HILL BULK FUEL STORAGE FACILITY
AIEA, HI 96701

6. Transporter 1 Company Name
WEST OAHU AGGREGATE 808-668-1969
U.S. EPA ID Number: NOT APPLICABLE

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
PVT LAND COMPANY, LTD.
87-2020 FARRINGTON HIGHWAY
WAIANAE, HI 96792
Facility's Phone: 808-668-4561
U.S. EPA ID Number: NOT APPLICABLE

| | 9. Waste Shipping Name and Description | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | |
|---|---|---|---|---|---|---|
| | 1. MATERIAL NOT REGULATED BY DOT (IDW SOIL CUTTINGS) | 001 | CM | 14000 | P | NON-RCRA |
| | 2. | | | | | |
| | 3. | | | | | |
| | 4. | | | | | |

13. Special Handling Instructions and Additional Information
9b1: NR
9b2: *
9b3: *
9b4: *
Clearance # 92266

2012 9b1:
ERG# 9b2:
DO/JOE 9b3:
300228 9b4:

SEND COPY TO:
PCS LLC
P.O. BOX 235117
HONOLULU, HI 96823

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: JINGBO CHANG on behalf of the Navy
Signature:
Month Day Year: 11 17 14

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dennis M Rivera
Signature:
Month Day Year: 11 18 14

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year:

17. Discrepancy
17a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
10.10 tons
Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Laheia Romena
Signature:
Month Day Year: 11 18 14

9-BLC-O 6 10498 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

| NON-HAZARDOUS WASTE MANIFEST | 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Waste Tracking Number |
|---|---|---|---|---|
| | HIR 000 050 401 | 1 | 808-206-9989 | 000024723 |

5. Generator's Name and Mailing Address
COMNAVREG HAWAII, C/O NAVFAC HAWAII, CODE PRJ42
400 MARSHALL ROAD, ATTN: ESTRELITA HIGA
JBPHH, HI 96860-3139
Generator's Phone: 808-471-4216

Generator's Site Address (if different than mailing address)
HIC300228-01-3
RED HILL BULK FUEL STORAGE FACILITY
AIEA, HI 96701

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. 808-545-4599
U.S. EPA ID Number: HID 982 040 578

7. Transporter 2 Company Name: UNITEK SOLVENT SERVICES, INC.-OAHU 808-682-8284
U.S. EPA ID Number: H I D 9 8 2 4 4 3 7 1 5

8. Designated Facility Name and Site Address
UNITEK SOLVENT SERVICES, INC.
91-125 KAOMI LOOP
KAPOLEI, HI 96707
Facility's Phone: 808-682-8284
U.S. EPA ID Number: H I D 9 8 2 4 4 3 7 1 5

| | 9. Waste Shipping Name and Description | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | |
|---|---|---|---|---|---|---|
| | 1. MATERIAL NOT REGULATED BY DOT (IDW WELL PURGE WATER) | 008 | DM | 00400 | G | NON-RCRA |
| | 2. | | | | | |
| | 3. | | | | | |
| | 4. C | | | | | |

13. Special Handling Instructions and Additional Information
9b1: NR Pn9 <200gpm Hydroclor 2012 9b1: TOTAL HALOGEN:

GENERATOR'S CERTIFICATION: I HEREBY DECLARE THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER SHIPPING NAME (WHERE APPLICABLE) AND ARE CLASSIFIED, PACKED, MARKED , AND LABELED AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT BY HIGHWAY ACCORDING TO APPLICABLE GOVERNMNET REGULATIONS. I FURTHER CERTIFY THAT IF THIS IS USED OIL IT IS SUBJECT TO REGULATION UNDER 40 CFR PART 279; THAT IT DOES NOT CONTAIN PCBS GREATER THAN OR EQUAL TO 2 PPM; AND THAT IT HAS NOT BEEN CONTAMINATED WITH CARBURATOR CLEANERS, BRAKE SPRAY, FREON, HALOGENATED SOLVENTS, OR OTHER HAZARDOUS MATERIALS AND/OR HAZARDOUS WASTES.

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: JINGBO CHANG On behalf of the Navy
Signature:
Month 11 Day 17 Year 14

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Agaluma Filoialii
Signature:
Month 11 Day 17 Year 14
Transporter 2 Printed/Typed Name: Ann Marie Patino
Signature:
Month 11 Day 24 Year 14

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

PCS provides kit SEE CONSOLIDATED MANIFEST XM1960

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: R. LEHMDRA
Signature:
Month 11 Day 26 Year 2014

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

169-BLC-O 6 10498 (Rev. 9/09) DESIGNATED FACILITY TO GENERATOR