Draft
Technical Memorandum
Groundwater Sampling Event for RHMW06 and RHMW07 – January 2015

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

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

April 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
Naval Facilities Engineering Command, Hawaii
400 Marshall Road
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Contract No. N62583-11-D-0515, Contract Task Order No. KB01

DRAFT

TECHNICAL MEMORANDUM
GROUNDWATER SAMPLING EVENT FOR RHMW06 AND RHMW07 – JANUARY 2015
RED HILL BULK FUEL STORAGE FACILITY
JOINT BASE PEARL HARBOR-HICKAM, HAWAII

Prepared For

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

Contract Number: N62583-11-D-0515
Contract Task Order Number: KB01

April 2015

Prepared By

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DRAFT TECHNICAL MEMORANDUM

To: Naval Facilities Engineering Command (NAVFAC) Hawaii

From: Battelle Memorial Institute
Parsons Government Services

Date: April 2015

Subject: Groundwater Sampling Event for RHMW06 and RHMW07 - January 2015
Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor-Hickam, Hawaii
Contract No. N62583-11-D-0515, Contract Task Order KB01

INTRODUCTION

This technical memorandum summarizes the activities and presents the analytical results of the January 2015 confirmation groundwater sampling event for monitoring wells RHMW06 and RHMW07 at Red Hill Bulk Fuel Storage Facility (Facility), Joint Base Pearl Harbor-Hickam (JBPHH), Hawaii. 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.

Monitoring wells RHMW06 and RHMW07 were installed in September and October 2014, and the initial groundwater samples were obtained immediately following monitoring well development in October 2014. The results of the initial samples are discussed in the *Monitoring Well Installation Report, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii* (Battelle and Parsons, 2015). The locations of new monitoring wells RHMW06 and RHMW07 and other site wells are shown on Figure 1.

Initial and confirmation groundwater samples were collected in accordance with procedures outlined in the *Final Work Plan/Sampling and Analysis Plan, Monitoring Well Installation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii* (Final Work Plan) (Battelle and Parsons, 2014). The DOH reviewed the draft work plan, commented, and accepted the Final Work Plan. A summary of the sampling activities, analytical methods and quality assurance/quality control, and results for the confirmation sampling event are provided in the following sections.

OBJECTIVES

The objectives of the confirmation groundwater sampling were to: 1) determine if the drilling-foam-related organic compounds persisted in the groundwater approximately three months after the initial sampling event, and 2) obtain water levels in RHMW06 and RHMW07 to evaluate whether the water levels in the wells remained similar to the levels observed during the initial sampling event. The groundwater sampling activities were conducted under Contract No. N62583-11-D-0515, Contract Task Order KB01.

SAMPLING SUMMARY

Groundwater Purging and Sampling Procedures

The confirmation groundwater samples from RHMW06 and RHMW07 were collected on January 22 and 23, 2015 by Environet, Inc. using the dedicated bladder pumps installed in the monitoring wells and sampling methodology as outlined in the Final Work Plan (Battelle and Parsons, 2014).

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 in the basal aquifer beneath the Facility. Drawdown during purging is minimal in RHMW06 and RHMW07, but is greater at RHMW07 because of apparent lower aquifer permeability at this particular location (Battelle and Parsons, 2015). Low flow purging requires water in the well to be in equilibrium with the aquifer formation, and the flow into the pump intake to be horizontal and laminar, so that mixing from turbulence does not occur. Therefore, this technique minimizes disturbance in the well screen and aquifer, which reduces turbidity, aeration, mixing, and loss of volatile organic compounds (VOCs).

Water quality parameters including dissolved oxygen (DO), oxidation-reduction potential (ORP), temperature, pH, specific conductance, and turbidity were measured using a multi-parameter meter equipped with a flow-through cell and recorded on a field form during purging. Samples were collected, regardless of the volume purged, after the parameters had stabilized to within the ranges specified in the Final Work Plan (Battelle and Parsons, 2014). Pertinent sampling information is shown on the groundwater sampling field forms provided in Attachment A. The final sampling parameters measured for both the initial sampling event and this confirmation sampling event are provided in Table 1. The parameters measured for the initial and confirmation sampling events are similar. The water quality parameters DO and ORP are discussed in the Results section.

Static groundwater elevations in RHMW06 and RHMW07 determined from groundwater level measurements taken at the time of initial and confirmation sampling, as well as additional measurements taken in December 2014, are provided in Table 2. The groundwater elevations are discussed in the Results section.

Investigation-Derived Waste

Approximately 25 gallons of purge water from the January 2015 sampling event were collected in a 55-gallon drum and temporarily staged at a monitoring well location. The drum and purge water were picked up on January 23, 2015 by Pacific Commercial Services LLC (PCS) and temporarily stored at the PCS warehouse until Unitek Solvent Services (Unitek) could pump the water from the drum and transport the water to the Unitek facility. The water was transported to the Unitek facility on February 18, 2015. Unitek signed for the purge water on February 20, 2015. The non-hazardous waste disposal manifest is provided in Attachment B.

ANALYTICAL METHODS AND QUALITY ASSURANCE/QUALITY CONTROL

Analytical Methods

Groundwater samples were analyzed by United States Environmental Protection Agency methods for the following parameters:

- VOCs by Method 8260C for the full suite of VOCs shown in Table 3;
- The VOC ethylene dibromide (EDB) or 1,2-dibromoethane by Method 8011 to achieve lower detection limits;
- Total petroleum hydrocarbons (TPHs) – Purgeable gasoline range organics (TPH-GRO), extractable diesel range organics (TPH-DRO), and extractable residual range organics (TPH-RRO) by Method 8015B;
- Polycyclic aromatic hydrocarbons (PAHs) by Method 8270C SIM to achieve lower detection limits; and
- Dissolved inorganic lead by Method 6020A.

Groundwater also was analyzed for parameters indicative of water quality and/or natural attenuation and biodegradation including:

- Total alkalinity by Method SM2320B;
- Nitrate-nitrite as Nitrogen by Method 353.2;
- Sulfate by Method 9056; and
- Methane by Robert S. Kerr (RSK) 175.

The method-specific analytes, DOH action levels (DOH, 2012), and laboratory quantification limits are provided in Table 3. The sample containers provided by the laboratory and used for sampling, as well as preservation and holding times for the analytical methods are provided in Table 4. Groundwater analyses were performed at APPL Laboratories, Inc. of Clovis, California and EMAX Laboratories of Torrance, California. Both laboratories are accredited by the Department of Defense Environmental Laboratory Accreditation Program.

Quality Assurance/Quality Control

Based on the data quality assessment report (DQAR) prepared by Parsons, the analytical data for groundwater samples are of acceptable quality and are considered usable to support project objectives; and samples are considered representative of the site when used in accordance with the validation qualifiers. No data were rejected during the validation process. The chain-of-custody forms, laboratory analytical data reports, and DQAR for the January 2015 sampling event are provided in Attachment C.

A field duplicate was collected and analyzed for each analytical method, and a trip blank set was included in each sample cooler containing samples for VOCs or TPH-GRO analysis. The results of the trip blank analyses are provided in Attachment C.

RESULTS

Groundwater Analytical Results

Analytical results for the two confirmation groundwater samples from RHMW06 and RHMW07 and the field duplicate from RHMW07 are shown in Table 5. No TPHs, VOCs, or PAHs were detected above the detection limits shown in the table. Dissolved lead also was not detected above its detection limit as shown in Table 5. This confirms that groundwater in the monitoring wells is not impacted by fuel or other petroleum-related constituents. The low concentrations of TPH-DRO and 2-methylnaphthalene detected in the previous (initial) groundwater samples appear to have been artifacts related to the drilling foam used in the drilling process. The previous acetone detections may have been artifacts associated with laboratory analysis. Concentrations of the standard water quality parameters alkalinity, nitrate-nitrite as nitrogen, sulfate, and methane detected in RHMW06 and RHMW07 also are provided in Table 5. The initial groundwater sampling results are presented in the Monitoring Well Installation Report (Battelle and Parsons, 2015).

Water Quality and Biodegradation

The basal aquifers beneath Oahu are low in total dissolved solids (TDS) and groundwater is aerobic (Hunt, 2004). The inorganic groundwater quality parameters shown in Table 5 indicate that groundwater at RHMW06 and RHMW07 is relatively low in TDS. However, sulfate and nitrate-nitrite as nitrogen concentrations at RHMW06 are a little higher than at RHMW07. The water quality parameter concentrations of DO and ORP for the initial and confirmation sampling events are similar although ORP appears to have decreased slightly in the confirmation sampling event as shown in Table 1. Biodegradation of residual drilling foam constituents in groundwater at RHMW06 and RHMW07 occurred, resulting in anaerobic groundwater conditions at RHMW07 that have persisted since the initial groundwater sampling event. Evidence of continued biodegradation at RHMW06 and RHM07 between sampling events is present (i.e., no organic compounds were detected in the confirmation sampling event); however, groundwater at RHMW07 remains less aerobic than at RHMW06 based on the low values of DO and ORP observed during sampling (Table 1). In time, groundwater at RHMW07 should return to aerobic conditions, similar to RHMW06.

Groundwater Elevations

Groundwater elevations in RHMW06 and RHMW07 are similar for the initial (October 2014) and confirmation (January 2015) sampling events although the confirmation event elevations are slightly lower than the initial event groundwater elevations as shown in Table 2. However, in December 2014, a slightly higher groundwater elevation was observed at RHMW06 than in January 2015; and a slightly lower elevation was observed at RHMW07 than in January 2015. The differences in water level elevations between the two monitoring wells in October 2014 and January 2015 are approximately the same.

REFERENCES

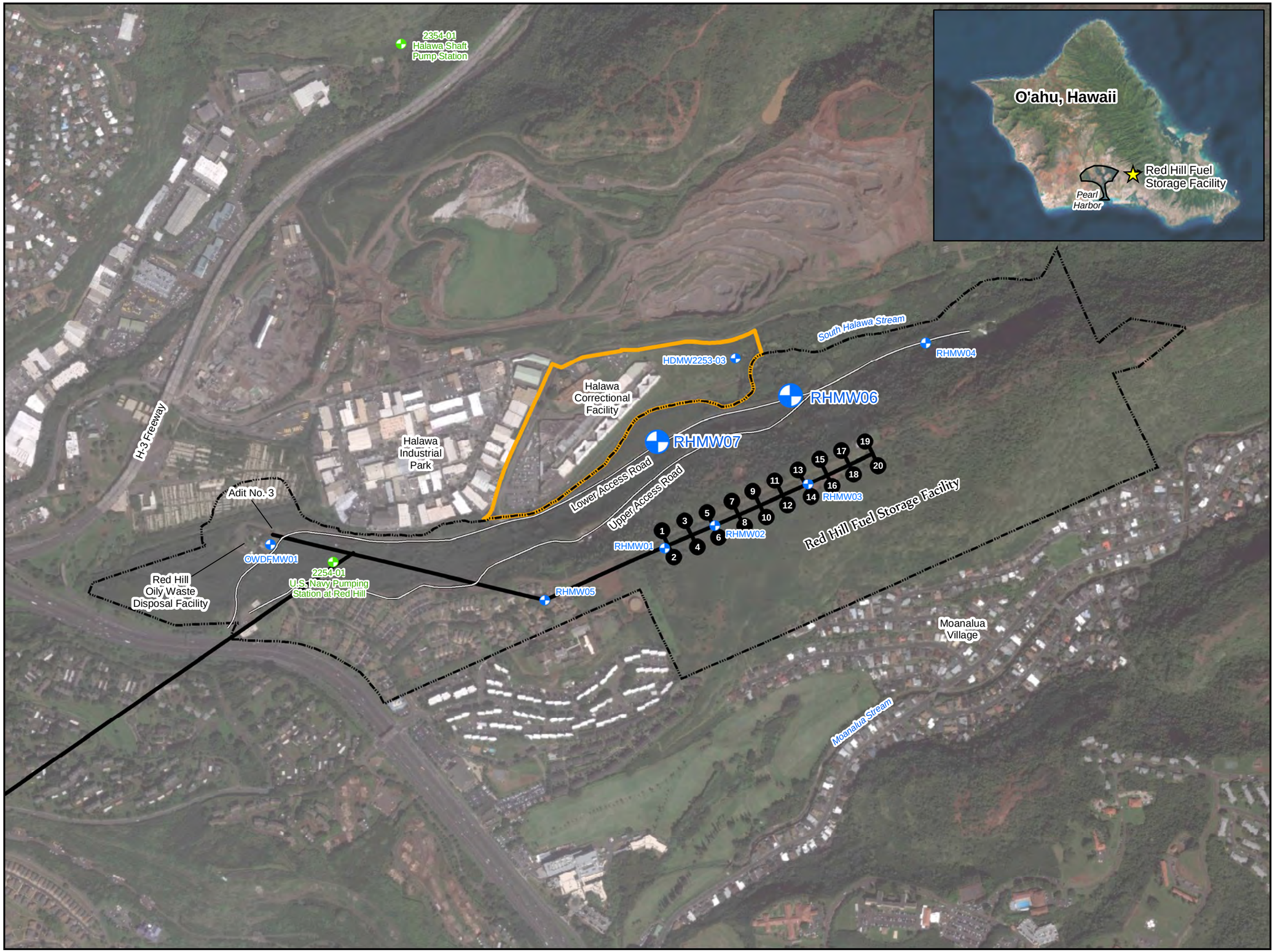
Battelle and Parsons. 2014. *Final Work Plan/Sampling and Analysis Plan, Monitoring Well Installation, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii*. August.

Battelle and Parsons. 2015. *Monitoring Well Installation Report, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii (Draft).* March.

DOH. 2012. *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater*. Hawaii Department of Health, Hazard Evaluation and Emergency Response Office. Updated January 2012.

Hunt, C.D., Jr. 2004. *Ground-Water Quality and its Relation to Land Use on Oahu, Hawaii, 2000-01*. U.S. Geological Survey, Water-Resources Investigations Report 03-4305, 67p.

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

Groundwater Sampling Event for RHMW06 and RHMW07 - January 2015
Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor - Hickam
Hawaii

PARSONS

South Jordan, Utah

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TABLES

TABLE 1
GROUNDWATER SAMPLING PARAMETERS
Groundwater Sampling Event for RHMW06 and RHMW07 - January 2015
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
	01/23/15		241.31	22.40	6.86	1.79	6.47	15.5	106
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
	01/22/14		198.13	22.00	6.61	1.77	0.18	18	10

Notes: Groundwater parameters were measured with a mult-parameter meter 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 2
GROUNDWATER ELEVATIONS, WELL CONSTRUCTION DETAILS, AND PUMP SETTINGS
Groundwater Sampling Event for RHMW06 and RHMW07 - January 2015
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
	01/23/15		241.31	17.70	-0.19				11.69
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
	01/22/15		198.13	22.16	0.10				9.87

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 3

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

Groundwater Sampling Event for RHMW06 and RHMW07 – January 2015
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

Groundwater Sampling Event for RHMW06 and RHMW07 – January 2015
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

Groundwater Sampling Event for RHMW06 and RHMW07 – January 2015
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 8015B)							
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

Groundwater Sampling Event for RHMW06 and RHMW07 – January 2015
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 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°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 (JANUARY 2015)
Groundwater Sampling Event for RHMW06 and RHMW07 - January 2015
Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor-Hickam, Hawaii

Method	Chemical	DOH EALs		RHMW06-GW-02 (15A141-03/AZ10128)					RHMW07-GW-02 (15A141-01/AZ10126)					RHMW07-GW-02FD* (15A141-02/AZ10127)				
		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	100	76	51	N.D.	U	100	75	50	N.D.	U	110	81	54
	TPH as Residual Range Organics C24-C36	4,400	100	N.D.	U	100	76	51	N.D.	U	100	75	50	N.D.	U	110	81	54
EPA 8270C_SIM	1-Methylnaphthalene	4.7	10	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	2-Methylnaphthalene	24	10	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Acenaphthene	370	20	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Acenaphthylene	240	2,000	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Anthracene	1,800	22	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Benzo[a]anthracene	0.092	4.7	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Benzo[a]pyrene	0.2	0.81	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Benzo[b]fluoranthene	0.092	0.75	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Benzo[g,h,i]perylene	1,500	0.13	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Benzo[k]fluoranthene	0.92	0.4	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Chrysene	9.2	1	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Dibenzo[a,h]anthracene[1]	0.0092	0.52	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Fluoranthene	1,500	130	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Fluorene	240	950	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Indeno[1,2,3-cd]pyrene	0.092	0.095	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Naphthalene	17	21	N.D.	U	0.10	0.052	0.026	N.D.	U	0.11	0.055	0.028	N.D.	U	0.10	0.050	0.025
	Phenanthrene	240	410	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	N.D.	U	0.020	0.010	0.0050
	Pyrene	180	68	N.D.	U	0.021	0.010	0.0052	N.D.	U	0.022	0.011	0.0055	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	N.D.	U	10.0	2.00	0.95	N.D.	U	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 (JANUARY 2015)
Groundwater Sampling Event for RHMW06 and RHMW07 - January 2015
Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor-Hickam, Hawaii

Method	Chemical	DOH EALs		RHMW06-GW-02 (15A141-03/AZ10128)					RHMW07-GW-02 (15A141-01/AZ10126)					RHMW07-GW-02FD* (15A141-02/AZ10127)				
		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	0.10	0.100	0.030	N.D.	U	0.10	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	0.10	0.10	0.03	N.D.	U	0.10	0.10	0.03	N.D.	U	0.10	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	N.D.	U	1.0	0.45	0.25	N.D.	U	1.0	0.45	0.25	N.D.	U	1.0	0.45	0.25
EPA 6020A	Dissolved Lead	15	50,000	N.D.	U	3.0	0.40	0.19	N.D.	U	3.0	0.40	0.19	N.D.	U	3.0	0.40	0.19
EPA 9056	Sulfate	NA	NA	**87,800**		5,000	990	450	**58,200**		2,000	396	180	**59,900**		2,000	396	180
EPA 353.2	Nitrate/Nitrite as N	NA	NA	**630**		100	100	28	**290**		100	100	28	**330**		100	100	28
EPA A2320B	Alkalinity	NA	NA	**139,000**		2,000	1,700	850	**132,000**		2,000	1,700	850	**126,000**		2,000	1,700	850

QA Notes:

	State of Hawaii Department of Health Hazard Evaluation and Emergency Response Office Environmental
DOH EALs	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.
NA	DOH 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.

Detections are bolded.

ATTACHMENT A

GROUNDWATER SAMPLING FORMS

GROUNDWATER SAMPLING LOG

WELL ID: RHMW07

LOCATION: Red Hill Fuel Storage Facility

PROJECT NO: 1195-001

INITIAL WATER LEVEL: 198.13 ft bTOC

DATE: 1/22/15

TIME: 0930

TOTAL DEPTH OF WELL: ~217.60

PERSONNEL INVOLVED: JT; CB

LENGTH OF SATURATED ZONE:

WEATHER CONDITIONS: partly cloudy

VOLUME OF WATER TO BE REMOVED:

METHOD OF REMOVAL: Bladder Pump

WATER LEVEL AFTER PURGING: 198.55 ft bTOC

PUMPING RATE:

WELL PURGE DATA:

TIME	VOLUME REMOVED (L)	Depth to Water	pH	COND (~~mS/m~~ Sp. µS/cm)	TURBIDITY (NTU)	DO (mg/l)	TEMP (°C)	SALINITY (~~%~~ ppt)	REDOX (ORP) (mV)
1130	0.5L		5.79	1869	9.3	8.59	22.9	0.95	-66.0
1140	2		6.62	1870	13.2	5.61	23.8	0.95	-46.2
1150	4		6.68	2012	15.8	0.40	22.0	1.03	12.2
1156	10		6.68	1997	27.2	0.26	22.0	1.02	22.5
1200	15		6.67	1991	31.7	0.24	21.9	1.01	22.7
1205	20		6.66	1980	209.8	0.24	21.9	1.01	19.9
1210	25		6.66	1974	93.3	0.25	22.1	1.00	19.9
1215	30		6.65	1949	142.1	0.24	22.1	0.99	18.0
1220	35		6.64	1911	122.2	0.25	22.0	0.97	15.6
1223	38		6.63	1881	126.2	0.24	22.0	0.95	13.6
1227	40		6.63	1838	6.7	.22	22.0	0.93	12.9
1230	42		6.62	1800	8.8	0.20	22.0	0.91	11.7
1232	44		6.62	1774	10.9	0.19	22.0	0.90	10.5
1235	47		6.61	1773	16.2	0.19	22.1	0.88	10.5
1237	49		6.61		18.0	0.18	22.0	0.86	10.0

SAMPLE RETRIEVAL METHOD: ~~NA~~ Bladder Pump

APPEARANCE OF SAMPLE:

COLOR: clear

TURBIDITY: low

SEDIMENT: none

OTHER:

SAMPLE ID: RHMW07-GW-02; RHMW07-GW-02FD

SAMPLE COLLECTION TIME:

SAMPLED BY:

COMMENTS AND OBSERVATIONS:

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES: ⊛ TPH-DRO/RRO, PAHs (4x1L Ambers); VOCs, EDB, TPH-GRO, Methane (12x40mL VOAs); Alkalinity + Salinity (1x500mL poly); Nitrate/Nitrite (1x250 poly w/ ~~HNO3~~ H2SO4 preserve); and (1x500mL poly w/ HNO3 preserve)

NUMBER AND TYPES OF SAMPLE CONTAINERS FILLED:

DECONTAMINATION PROCEDURES: Alconox, triple rinse with distilled water

SAMPLES DELIVERED TO:

TRANSPORTERS:

SAMPLE DELIVERY DATE:

SAMPLE DELIVERY TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16; 4"-0.65; 6"-1.47; 8"-2.61; 10"-4.08; 12"-5.87

- VOCs, EDB, methane, Alkalinity + Sulfate; Nitrate/Nitrite; and dissolved lead to APPL Labs.
- PAHs, TPH-GRO, and TPH-DRO/RRO to EMAX Labs.

⊛ bottles per sample!

GROUNDWATER SAMPLING LOG

WELL ID: RHMW06

LOCATION: Red Hill Fuel Storage Facility

PROJECT NO: 1195-001

INITIAL WATER LEVEL: 241.31' btoc

DATE: 1/23/15

TIME: 0715

TOTAL DEPTH OF WELL: ~263.30

PERSONNEL INVOLVED: JT, DB

LENGTH OF SATURATED ZONE:

WEATHER CONDITIONS: overcast

VOLUME OF WATER TO BE REMOVED:

METHOD OF REMOVAL: Bladder Pump

WATER LEVEL AFTER PURGING: 241.30' btoc

PUMPING RATE:

WELL PURGE DATA:

TIME	VOLUME REMOVED	Depth to Water	pH	COND (mS/m)	TURBIDITY (NTU)	DO (mg/l)	TEMP (°C)	SALINITY (%) ppt	REDOX (ORP) (mV)
730	0		6.16	1339	~~15.75~~ 52.8	8.25	24	0.67	113.9
740	5L		6.84	1458	13.2	6.09	22.6	0.78	103.4
745	~~7.5~~ 7.5L		6.91	1772	18.6	6.35	22.3	0.90	110.7
750	9L		6.90	1777	98.6	6.45	22.2	0.90	110.8
755	11.5L		6.89	1779	32.3	6.39	22.2	0.90	110.2
800	~~14~~ 14L		6.89	1780	19.4	6.45	22.2	0.90	109.4
805	16.5L		6.88	1782	68.0	6.38	22.2	0.90	108.4
810	19L		6.87	1783	9.8	6.40	22.2	0.90	107.7
815	21.5L		6.87	1785	24.3	6.41	22.3	0.91	107.3
820	25L		6.86	1786	86.0	6.37	22.4	0.91	106.6
825	30L		6.86	1787	15.5	6.47	22.4	0.91	106.1

SAMPLE RETRIEVAL METHOD: Bladder Pump

APPEARANCE OF SAMPLE:

SAMPLE ID: RHMW06-GW-02 (0830), RHMW06-GW-02MS (0840), RHMW06-GW-02MSD (0850)

COLOR: Clear

TURBIDITY: none

SAMPLE COLLECTION TIME:

SEDIMENT: none

SAMPLED BY:

OTHER:

COMMENTS AND OBSERVATIONS: ⊛ TPH-DRO/RRO, PAHs (4x1L Ambers); VOCs, EDB, TPH-GRO, Methane (12x40mL VOAs); Alkalinity + Salinity (1x500mL poly); Nitrate/Nitrite (1x250 mL poly w/ H_2SO_4); dissolved Lead (1x500 mL poly w/ HNO_3)

LABORATORY ANALYSIS PARAMETERS AND PRESERVATIVES:

NUMBER AND TYPES OF SAMPLE CONTAINERS FILLED:

DECONTAMINATION PROCEDURES: Alconox, triple rinse with distilled water

SAMPLES DELIVERED TO:

TRANSPORTERS:

SAMPLE DELIVERY DATE:

SAMPLE DELIVERY TIME:

CAPACITY OF CASING (GALLONS/LINEAR FOOT)
2"-0.16; **4"-0.65**; 6"-1.47; 8"-2.61; 10"-4.08; 12"-5.87

- VOCs, EDB, Methane, Alkalinity + Sulfate, Nitrite/Nitrate, and dissolved Lead to APPL Labs
- PAHs, TPH-GRO, and TPH-DRO/RRO to EMAX Labs

⊛ bottles per sample!

ATTACHMENT B

INVESTIGATION-DERIVED WASTE MANIFEST

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	000025230

GENERATOR

5. Generator's Name and Mailing Address
COMNAVREG HAWAII, C/O NAVFAC HAWAII, CODE PRJ42
400 MARSHALL ROAD, ATTN: ALAN SUGIHARA
JBPHH, HI 96860-3139
Generator's Phone: 808-473-7802

Generator's Site Address (if different than mailing address) HIC300238-01-5
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: HID982443715

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: HID982443715

	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 WATER)	001	DM	DI 25 ~~00050~~	G	NON-RCRA
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
9b1: NR 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: James Terry — Signature: [signature] — Month 1 Day 23 Year 15

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: Duke Toa Tili — Signature: [signature] — Month 1 Day 23 Year 15

Transporter 2 Printed/Typed Name: Robert Lyp — Signature: [signature] — Month 2 Day 18 Year 15

DESIGNATED FACILITY

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 HW1492

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. ALHAMBRA — Signature: [signature] — Month 02 Day 20 Year 2015

169-BLC-O 6 10498 (Rev. 9/09) DESIGNATED FACILITY TO GENERATOR

ATTACHMENT C

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

CHAIN-OF-CUSTODY FORMS

75450

CHAIN OF CUSTODY RECORD

3°C

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

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

C.O.C. 47615

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
Sampler (Print): James Ferry
Purchase Order Number
Sampler (Signature): [signature]

Date Shipped: 1/23/15
Carrier: FedEx
Waybill No.: 8764 1243 2990

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	VOCs (SW 8260B)	EDB (SW 8011)	Methane (RSK 175)	Alkalinity and Sulfate	Nitrate/Nitrite as N (EPA 353.2)	Dissolved Lead (SW 6020)	Comments
RHMW07-GW-02	RHMW07	1/22/15	1300	~~HI~~		X			X	X	X	X	X	X	dissolved lead
RHMW07-GW-02FD	RHMW07	1/22/15	1330	↓	12	X			X	X	X	X	X	X	sample was field
RHMW06-GW-02	RHMW06	1/23/15	0830		12	X			X	X	X	X	X	X	filtered
RHMW06-GW-02MS	RHMW06	1/23/15	0840		12	X			X	X	X	X	X	X	
~~RHMW06-GW-02MS~~ D.B.		~~1/23/15~~ D.B.													
RHMW06-GW-02MSD	RHMW06	1/23/15	0850		12	X			X	X	X	X	X	X	
Trip Blank 1/23/15		1/23/15	945	↓	3	X			X						

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]	1/23/15	1130					
Relinquished by:	**Date**	**Time**	**Received by:**	**Relinquished by:**	**Date**	**Time**	**Received at lab by:**
					1-24-15	12:00	[signature]

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

See reverse side for Container Preservative and Sampling Information

CHAIN OF CUSTODY

①

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. * 15A141
PROJECT CODE:

CLIENT Battelle
PROJECT Red Hill Phase 1b
COORDINATOR Carolyn Scala
TEL 215-604-5003 FAX 614-458-6620 EMAIL scalac@battelle.com
SEND REPORT TO Battelle
COMPANY 301 South State St., Ste, N001, Newtown PA 18940
ADDRESS
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/RRO (EPA 8015A-F)

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

	SAMPLE ID LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE 1C	1C	1C					COMMENTS
1	1	RHMW07-GW-02	RHMW07	1/22/15	1300	7	40mL 1L	VOA + Amber	0		X	X	X					Date Shipped: 1/23/15
2	2	RHMW07-GW-02FD	RHMW07	1/22/15	1330	7			0		X	X	X					Carrier: FedEx
	3	RHMW06-GW-02	RHMW06	1/23/15	0830	7			0		X	X	X					Way Bill No: 8764 1243 3054
3	4	RHMW06-GW-02MS	RHMW06	1/23/15	0840	7			0		X	X	X					
	5	RHMW06-GW-02MSD	RHMW06	1/23/15	0850	7			0		X	X	X					
4	6	Trip Blank 1/23/15		1/23/15	0945	3	40mL	VOA	0	X		X						
	7																	
	8																	
	9																	
	0																	

Instructions

Cooler #	Temp. (°C)	Sample #s
1	3.4°C	
2	14.0	

SAMPLER James Terry

RELINQUISHED BY	Date	Time	RECEIVED BY
James Terry / James Terry	1/23/15	1130	
	01-24-15	1155	

COURIER/AIRBILL

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.

Custody Sealed cooler

LABORATORY ANALYTICAL DATA REPORTS

APPL

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

Data Validatable Report

February 13, 2015

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

Attn: Gene Wright

Title: Report of Data: Case 75450

Project: 749435 Red Hill Phase1b TO 0068, Hawaii

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

Dear Mr. Wright:

Four water samples were received January 24, 2015, in good condition. Written results for the requested analyses are provided on this February 13, 2015.

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: 369

Data Validation Package
for

749435 Red Hill Phase 1b TO 0068

ARF 75450

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SAMPLE RECEIPT INFORMATION

Sample Receipt Information

ARF: 75450

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 January 24, 2014 at 3.0°C. The samples were assigned Analytical Request Form (ARF) number 75450. 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-02	AZ10126	WATER	01/22/15	01/24/15
RHMW07-GW-02FD	AZ10127	WATER	01/22/15	01/24/15
RHMW06-GW-02	AZ10128	WATER	01/23/15	01/24/15
Trip Blank 1/23/15	AZ10129	WATER	01/23/15	01/24/15

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-02 was designated by the client for MS/MSD analysis. All MS/MSD 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; 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.

Sample RHMW06-GW-02 was designated by the client for MS/MSD analysis. Several analytes recovered slightly below the lower control limit. All other MS/MSD 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; 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.

Sample RHMW06-GW-02 was designated by the client for MS/MSD analysis. All MS/MSD recoveries were acceptable.

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 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 method 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), dilution test (DT), and post digestion spike (PDS) were used for quality assurance. All acceptance criteria were met in the LCS.

Sample RHMW06-GW-02 was designated by the client for MS/MSD analysis. 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.

Sample RHMW06-GW-02 was designated by the client for MS/MSD analysis. All acceptance criteria were met in the MS/MSD.

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%

12

CHAIN OF CUSTODY,
ARF, CRF, AND
CLIENT COMMUNICATION

APPL - Analysis Request Form

75450

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 Phase 1b
PO #: PO#434917
Chain of Custody (Y/N): Y # 47615
RAD Screen (Y/N): Y pH (Y/N): Y
Turn Around Type: 2 WEEKS

Received by: YL
Date Received: 01/24/15 Time: 12:00
Delivered by: FED EX
Shuttle Custody Seals (Y/N): Y Time Zone: -10
Chest Temp(s): 3.0°C
Color: VOA,A-Grn,O-OrgGrn
Samples Chilled until Placed in Refrig/Freezer: Y
Project Manager: Diane Anderson
QC Report Type: DVP4/NEDD/NIRIS/HI
Due Date: 02/09/15

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: 3-$8011
Extractions: 3-_MWE012
VOA: 4-$86CREDW, 3-$RSK50
Metals: 3-$62A14WD(Pb)
Wetlab: 3-$232W(ALK), 3-$35OF, 3-$9056DOD(SO4)
Other: 3-_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-02	AZ10126W	01/22/15 13:00	$232W(ALK), $35OF, $62A14WD(Pb), $8011, $86CREDW, $9056DOD(SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs
2.	RHMW07-GW-02FD	AZ10127W	01/22/15 13:30	$232W(ALK), $35OF, $62A14WD(Pb), $8011, $86CREDW, $9056DOD(SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs
3.	RHMW06-GW-02 ms/msd	AZ10128W	01/23/15 08:30	$232W(ALK), $35OF, $62A14WD(Pb), $8011, $86CREDW, $9056DOD(SO4), $RSK50 -- unpreserved VOA 7day HT; LL VOCs
4.	Trip Blank 1/23/15	AZ10129W	01/23/15 09:45	$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# **75450**

Sample	Container Type	Count	pH
AZ10126	2 PL 500mL	1	na
	6 PL 500mL - HNO3	1	1.7
	29 PL 125mL - H2SO4	1	1.7
	15 VOAs - NP	9	na
AZ10127	2 PL 500mL	1	na
	6 PL 500mL - HNO3	1	1.7
	29 PL 125mL - H2SO4	1	1.7
	15 VOAs - NP	9	na
AZ10128	2 PL 500mL	3	na
	6 PL 500mL - HNO3	3	1.7
	29 PL 125mL - H2SO4	3	1.7
	15 VOAs - NP	27	na
AZ10129	15 VOAs - NP	3	na

Sample	Container Type	Count	pH

75450

CHAIN OF CUSTODY RECORD

3°C

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

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

C.O.C. 47615

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): [signature]

Date Shipped: 1/23/15
Carrier: FedEx
Waybill No.: 8764 1243 2990
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil		VOCs (SW 8260B)	EDB (SW 8011)	Methane (RSK 175)	Alkalinity and Sulfate	Nitrate/Nitrite as N (EPA 353.2)	Dissolved Lead (SW 6020)							Comments
RHMW07-GW-02	RHMW07	1/22/15	1300	HI		X				X	X	X	X	X	X							dissolved lead
RHMW07-GW-02FD	RHMW07	1/22/15	1330	↓	12	X				X	X	X	X	X	X							sample was field
RHMW06-GW-02	RHMW06	1/23/15	0830		12	X				X	X	X	X	X	X							filtered
RHMW06-GW-02MS	RHMW06	1/23/15	0840		12	X				X	X	X	X	X	X							
~~RHM06-GW-02MS~~ D.B.		~~1/23/15~~ DB																				
RHMW06-GW-02MSD	RHMW06	1/23/15	0850		12	X				X	X	X	X	X	X							
Trip Blank 1/23/15		1/23/15	945	↓	3	X				X												

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]	1/23/15	1130					
Relinquished by:	**Date**	**Time**	**Received by:**	**Relinquished by:**	**Date**	**Time**	**Received at lab by:**
					1-24-15	12:00	[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: 75450**

1) Project: 749435 Red Hill TO 0068 Date Received: 01/24/15

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 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 J5297

8) Cooler temp(s): In °C
1: 3.0 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) No 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) No 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 1/26/15

23) Yes Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: 90B05
Lab notified if pH was not adequate: ____

Notes/Deficiencies:
SAMPLE RHMW06-GW-02 MS/MSD HAD MULTIPLE COLLECTION TIMES ON COC. ALL SAMPLES EXCEPT TRIPBLANKS HAVE NO COLLECTION TIME ON THE CONTAINERS.

Personnel receiving samples: BB Second reviewer: VL
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 Phase 1b
PO: PO#434917

ARF: 75450

Container	Moved To	Date - Time	User Name	Reason For Move
Sample Number: AZ10126	**Client ID: RHMW07-GW-02**			
W01	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	VOA-LOKI	01/27/2015 14:42:09	Saldana, Regina	VOA Key -> Regina Saldana
	pH_Test	01/30/2015 17:18:02	Ounkham, Lelee	pH Verification: pH = 7 (lot HC421273)
W02	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W03	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W04	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W05	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W06	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W07	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
	Extraction	01/29/2015 10:31:06	Lee, Daniel	Key #3 -> Daniel Lee Extraction/Spent
W08	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W09	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W10	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
	A - Green	02/03/2015 14:02:11	Parmeter, Aileen	Aileen Parmeter -> Key #7
W11	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
	Wetlab	01/27/2015 09:30:51	Mehlman, Moriah	Key #7 -> Moriah Mehlman
	A - Green	01/27/2015 14:53:21	Mehlman, Moriah	Moriah Mehlman -> Key #7
	Wetlab	02/04/2015 10:01:24	Bulnes, Briana	Key #7 -> Briana Bulnes
	A - Green	02/04/2015 15:33:57	Bulnes, Briana	Briana Bulnes -> Key #7
W12	O-OrangeGreen	01/24/2015 12:00:00	Lor, Yang	Container Received
	Metals	01/27/2015 07:58:48	Moreyda, Nick	Key #2 -> Nick Moreyda
	O - OrangeGree	01/27/2015 08:23:50	Moreyda, Nick	Nick Moreyda -> Key #2

Chain of Custody

Client: Parsons
ATTN: Gene Wright
Project: 749435 Red Hill TO 0068 Phase 1b
PO: PO#434917

ARF: 75450

Container	Moved To	Date - Time	User Name	Reason For Move
Sample Number: AZ10127	**Client ID: RHMW07-GW-02FD**			
W01	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	VOA-LOKI	01/27/2015 14:42:12	Saldana, Regina	VOA Key -> Regina Saldana
	pH_Test	01/30/2015 17:18:10	Ounkham, Lelee	pH Verification: pH = 7 (lot HC421273)
W02	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W03	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W04	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W05	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W06	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W07	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
	Extraction	01/29/2015 10:31:09	Lee, Daniel	Key #3 -> Daniel Lee Extraction/Spent
W08	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W09	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W10	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
	A - Green	02/03/2015 14:02:05	Parmeter, Aileen	Aileen Parmeter -> Key #7
W11	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
	Wetlab	01/27/2015 09:30:50	Mehlman, Moriah	Key #7 -> Moriah Mehlman
	A - Green	01/27/2015 14:53:19	Mehlman, Moriah	Moriah Mehlman -> Key #7
	Wetlab	02/04/2015 10:01:21	Bulnes, Briana	Key #7 -> Briana Bulnes
	A - Green	02/04/2015 15:34:00	Bulnes, Briana	Briana Bulnes -> Key #7
W12	O-OrangeGreen	01/24/2015 12:00:00	Lor, Yang	Container Received
	Metals	01/27/2015 07:58:47	Moreyda, Nick	Key #2 -> Nick Moreyda
	O - OrangeGree	01/27/2015 08:23:53	Moreyda, Nick	Nick Moreyda -> Key #2

Chain of Custody

Client: Parsons
ATTN: Gene Wright
ARF: 75450
Project: 749435 Red Hill TO 0068 Phase 1b
PO: PO#434917

Container	Moved To	Date - Time	User Name	Reason For Move
Sample Number: AZ10128	**Client ID: RHMW06-GW-02**			
W01	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	VOA-LOKI	01/27/2015 14:42:13	Saldana, Regina	VOA Key -> Regina Saldana
	pH_Test	01/30/2015 17:18:14	Ounkham, Lelee	pH Verification: pH = 7 (lot HC421273)
W02	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W03	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W04	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	VOA-LOKI	01/27/2015 14:42:17	Saldana, Regina	VOA Key -> Regina Saldana
	pH_Test	01/30/2015 17:18:21	Ounkham, Lelee	pH Verification: pH = 7 (lot HC421273)
W05	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	VOA-LOKI	01/27/2015 14:42:19	Saldana, Regina	VOA Key -> Regina Saldana
	pH_Test	01/30/2015 17:18:08	Ounkham, Lelee	pH Verification: pH = 7 (lot HC421273)
W06	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	VOA-LOKI	01/27/2015 14:42:20	Saldana, Regina	VOA Key -> Regina Saldana
	pH_Test	01/30/2015 17:52:08	Ounkham, Lelee	pH Verification: pH = 7 (lot HC421273)
W07	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W08	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W09	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W10	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W11	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W12	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W13	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W14	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W15	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W16	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W17	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W18	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W19	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
	Extraction	01/29/2015 10:31:10	Lee, Daniel	Key #3 -> Daniel Lee Extraction/Spent
W20	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
	Extraction	01/29/2015 10:31:12	Lee, Daniel	Key #3 -> Daniel Lee Extraction/Spent
W21	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
	Extraction	01/29/2015 10:31:12	Lee, Daniel	Key #3 -> Daniel Lee Extraction/Spent

Chain of Custody

Client: Parsons
ATTN: Gene Wright
Project: 749435 Red Hill TO 0068 Phase 1b
PO: PO#434917

ARF: 75450

Container	Moved To	Date - Time	User Name	Reason For Move
W22	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W23	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W24	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W25	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
	Extraction	01/29/2015 10:31:11	Lee, Daniel	Key #3 -> Daniel Lee Extraction/Spent
W26	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
	Extraction	01/29/2015 10:31:10	Lee, Daniel	Key #3 -> Daniel Lee Extraction/Spent
W27	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	A-Green	01/26/2015 10:35:00	Lor, Yang	
W28	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
	A - Green	02/03/2015 14:02:13	Parmeter, Aileen	Aileen Parmeter -> Key #7
W29	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
W30	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
W31	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
	Wetlab	01/27/2015 09:30:49	Mehlman, Moriah	Key #7 -> Moriah Mehlman
	A - Green	01/27/2015 14:53:18	Mehlman, Moriah	Moriah Mehlman -> Key #7
	Wetlab	02/04/2015 10:01:16	Bulnes, Briana	Key #7 -> Briana Bulnes
	A - Green	02/04/2015 15:34:02	Bulnes, Briana	Briana Bulnes -> Key #7
W32	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
W33	A-Green	01/24/2015 12:00:00	Lor, Yang	Container Received
W34	O-OrangeGreen	01/24/2015 12:00:00	Lor, Yang	Container Received
W35	O-OrangeGreen	01/24/2015 12:00:00	Lor, Yang	Container Received
W36	O-OrangeGreen	01/24/2015 12:00:00	Lor, Yang	Container Received
	Metals	01/27/2015 07:58:40	Moreyda, Nick	Key #2 -> Nick Moreyda
	O - OrangeGree	01/27/2015 08:23:55	Moreyda, Nick	Nick Moreyda -> Key #2

Sample Number: AZ10129 Client ID: Trip Blank 1/23/15

W01	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
	VOA-LOKI	01/27/2015 14:42:01	Saldana, Regina	VOA Key -> Regina Saldana
	pH_Test	01/30/2015 17:18:36	Ounkham, Lelee	pH Verification: pH = 5 (lot HC421273)
W02	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received
W03	VOA_Frig	01/24/2015 12:00:00	Lor, Yang	Container Received

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: **150129W-10128 - 194134**
Batch ID: #8011-150129A

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	01/29/15	01/30/15
BLANK	EDB	0.020 U	0.02	0.020	0.010	ug/L	01/29/15	01/30/15
BLANK	SURROGATE: 1,3-DIBROMOPRO	94.8	70-132			%	01/29/15	01/30/15

Quant Method:80110129.M
Run #:107155
Instrument:Herbie
Sequence:150107
Initials:LHI

GC SC-Blank-REG MDLs
Printed: 02/13/15 12:27:01 PM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75450
Matrix: WATER

SDG No: 75450
Date Analyzed: 01/30/15
Instrument: Herbie

APPL ID.	Client Sample No.	SURROGATE: 1,3-DIBROMOPROPANE (S)					
		Limits	Result	Qualifier	Limits	Result	Qualifier
150129A-BLK	Blank	70-132	94.8				
150129A-LCS	Lab Control Spike	70-132	101				
AZ10126	RHMW07-GW-02	70-132	103				
AZ10127	RHMW07-GW-02FD	70-132	98.5				
AZ10128-MS	Matrix Spike	70-132	99.1				
AZ10128-MSD	Matrix SpikeD	70-132	103				
AZ10128	RHMW06-GW-02	70-132	99.7				

Comments: Batch: #8011-150129A

Printed: 02/13/15 12:27:02 PM
Form 2 & 8, Surrogate Recovery Summary

Laboratory Control Spike Recovery

EPA 8011

APPL ID: **150129W-10128 LCS - 194134**
Batch ID: #8011-150129A

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	0.453	94.0	60-140
EDB	0.482	0.464	96.3	60-140
SURROGATE: 1,3-DIBROMOPROPANE (	0.350	0.352	101	70-132

Comments: _____

Primary	SPK
Quant Method :	80110129.M
Extraction Date :	01/29/15
Analysis Date :	01/30/15
Instrument :	Herbie
Run :	107157
Initials :	LHI

Printed: 02/13/15 12:27:04 PM
APPL Standard LCS

Matrix Spike Recoveries

EPA 8011

APPL ID: **150129W-10128 MS - 194134**
Batch ID: #8011-150129A
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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	0.499	0.506	104	105	60-140	1.4	25
EDB	0.482	ND	0.501	0.496	104	103	60-140	1.0	25
SURROGATE: 1,3-DIBROMOPROPANE (	0.350	NA	0.347	0.362	99.1	103	70-132		

Comments: _____

Primary	SPK	DUP
Quant Method :	80110129.M	80110129.M
Extraction Date :	01/29/15	01/29/15
Analysis Date :	01/30/15	01/30/15
Instrument :	Herbie	Herbie
Run :	107165	107166
Initials :	LHI	

Printed: 02/13/15 12:27:20 PM
APPL MSD SCII

8011

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75450
Matrix: WATER
Blank ID: 150129A-BLK

SDG No: 75450
Date Analyzed: 01/30/15
Instrument: Herbie
Time Analyzed: 1653

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150129A-BLK	Blank	107155	01/30/15 1653
150129A-LCS	Lab Control Spike	107157	01/30/15 1733
AZ10126	RHMW07-GW-02	107161	01/30/15 1853
AZ10127	RHMW07-GW-02FD	107162	01/30/15 1913
150129A-MS	Matrix Spike	107165	01/30/15 2013
150129A-MSD	Matrix SpikeD	107166	01/30/15 2033
AZ10128	RHMW06-GW-02	107167	01/30/15 2052

Comments: Batch: #8011-150129A

Printed: 02/13/15 12:27:27 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 Phase 1b
Sample ID: RHMW07-GW-02
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10126
QCG: #8011-150129A-194134

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
8011	DBCP	0.019 U	0.02	0.019	0.007	ug/L	01/29/15	01/30/15
8011	EDB	0.020 U	0.02	0.020	0.010	ug/L	01/29/15	01/30/15
8011	SURROGATE: 1,3-DIBROMOPROPANE	103	70-132			%	01/29/15	01/30/15

Quant Method: 80110129.M
Run #: 107161
Instrument: Herbie
Sequence: 150107
Dilution Factor: 1
Initials: LHI

Printed: 02/13/15 12:27:28 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\150107\107161.D\ECD1A.CH Vial: 61
Acq On : 01-30-15 18:53:44 Operator:
Sample : AZ10126W07 2/34.18G Inst : Herbie
Misc : soil Multiplr: 1.02
IntFile : rteint.p

Data File : G:\HERBIE\DATA\150107\107161.D\ECD2B.CH Vial: 61
Acq On : 01-30-15 18:53:43 Operator:
Sample : AZ10126W07 2/34.18G Inst : Herbie
Misc : soil Multiplr: 1.02
IntFile : rteint2.p
Quant Time: Feb 10 11:15 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:54:08 2015
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

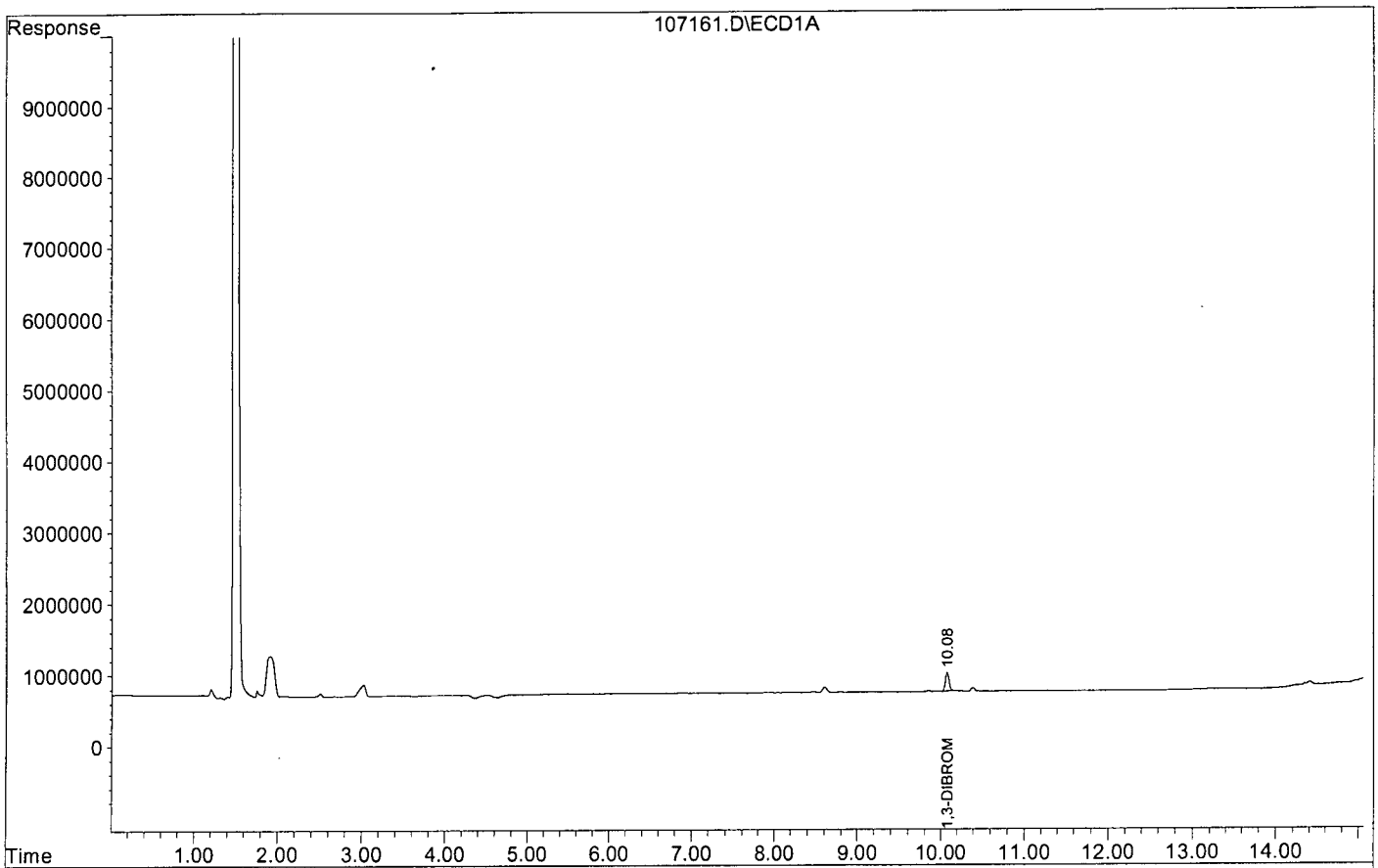
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.11	266106	348882	0.370	0.361
Spiked Amount 0.358			Recovery	=	103.24%	100.73%
Target Compounds						
Target Compounds						
1) TM EDB	0.00	0.00	0	0	N.D. d	N.D. d
2) TM 1,2,3-TCP	0.00	0.00	0	0	N.D. d	N.D. d
4) TM DBCP	0.00	0.00	0	0	N.D. d	N.D. d

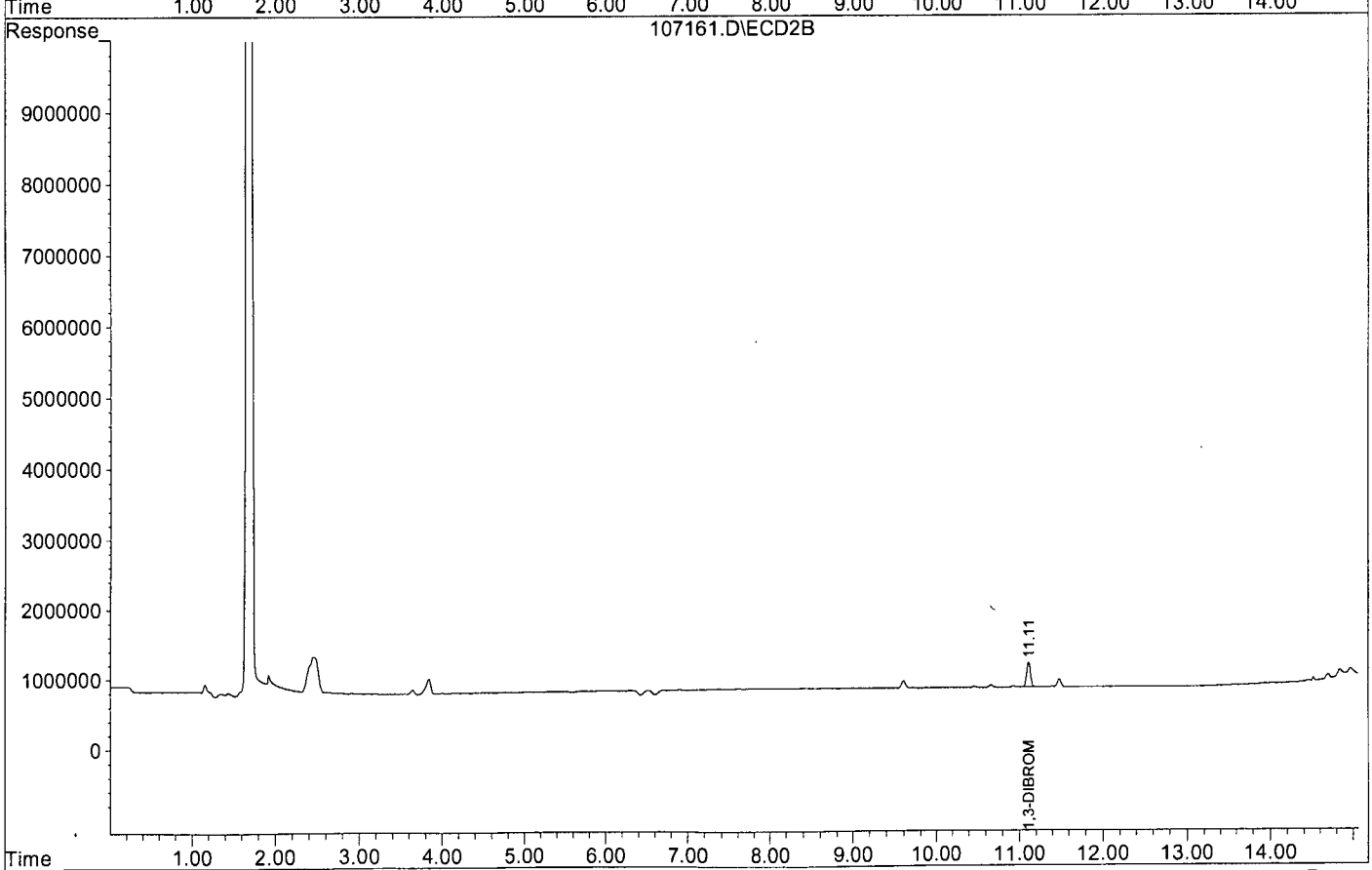
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\150107\107161.D
Acq On : 01-30-15 18:53:44
Sample : AZ10126W07 2/34.18G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 61
Operator:
Inst : Herbie
Multiplr: 1.02





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 Phase 1b
Sample ID: RHMW07-GW-02FD
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10127
QCG: #8011-150129A-194134

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
8011	DBCP	0.019 U	0.02	0.019	0.007	ug/L	01/29/15	01/30/15
8011	EDB	0.020 U	0.02	0.020	0.010	ug/L	01/29/15	01/30/15
8011	SURROGATE: 1,3-DIBROMOPROPANE	98.5	70-132			%	01/29/15	01/30/15

Quant Method: 80110129.M
Run #: 107162
Instrument: Herbie
Sequence: 150107
Dilution Factor: 1
Initials: LHI

Printed: 02/13/15 12:27:28 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107162.D\ECD1A.CH Vial: 62
Signal #2 : G:\HERBIE\DATA\150107\107162.D\ECD2B.CH
Acq On : 01-30-15 19:13:39 Operator:
Sample : AZ10127W07 2/33.58G Inst : Herbie
Misc : soil Multiplr: 1.01
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 11:16 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:54:08 2015
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

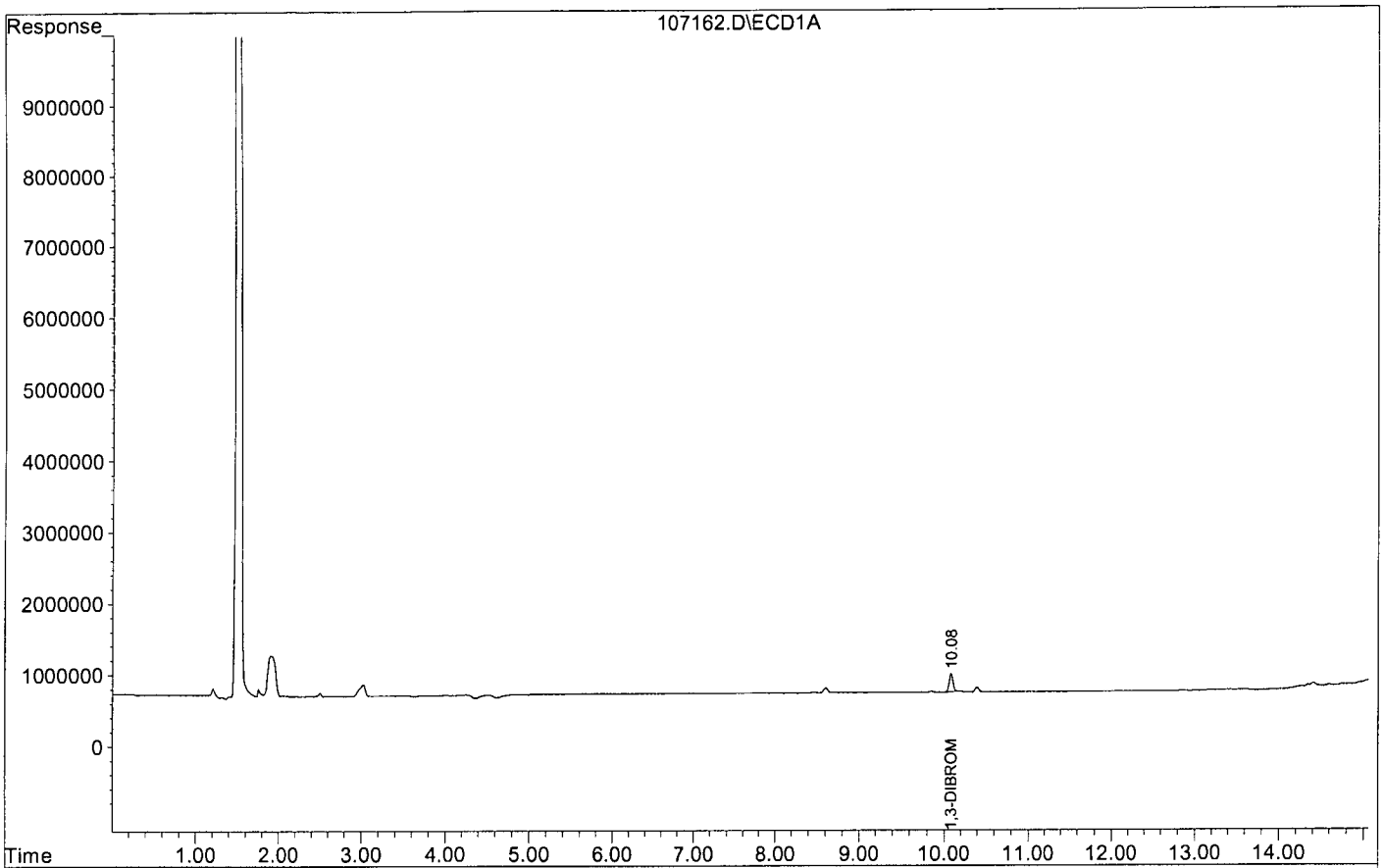
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.11	253870	335121	0.349	0.342
Spiked Amount 0.354			Recovery	=	98.52%	96.54%
Target Compounds						
Target Compounds						
1) TM EDB	0.00	0.00	0	0	N.D. d	N.D. d
2) TM 1,2,3-TCP	0.00	0.00	0	0	N.D. d	N.D. d
4) TM DBCP	0.00	0.00	0	0	N.D.	N.D.

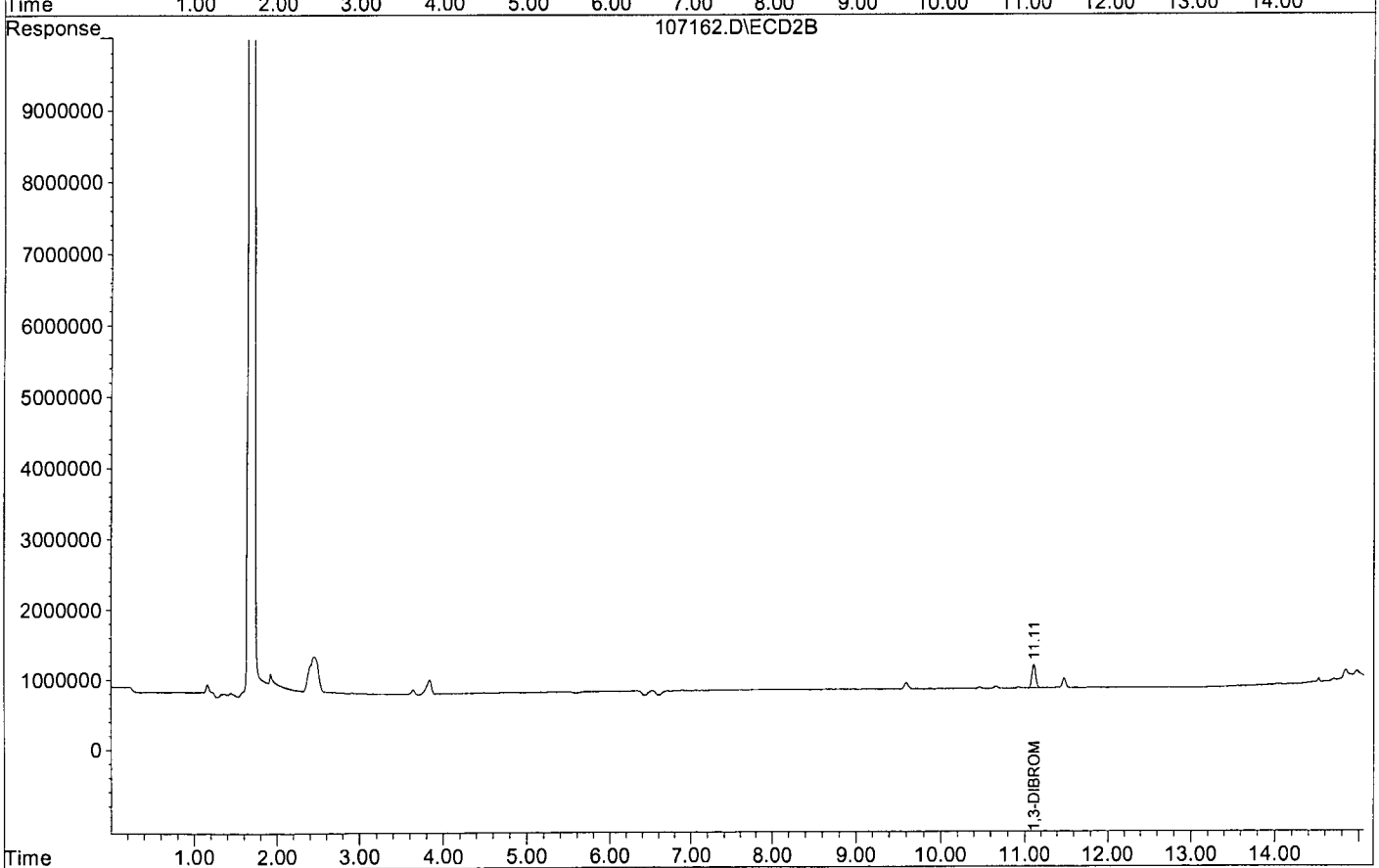
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\150107\107162.D
Acq On : 01-30-15 19:13:39
Sample : AZ10127W07 2/33.58G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 62
Operator:
Inst : Herbie
Multiplr: 1.01





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 Phase 1b
Sample ID: RHMW06-GW-02
Sample Collection Date: 01/23/15

ARF: 75450
APPL ID: AZ10128
QCG: #8011-150129A-194134

Method	Analyte	Result	LOQ	LOD	DL	Units	Extraction Date	Analysis Date
8011	DBCP	0.019 U	0.02	0.019	0.007	ug/L	01/29/15	01/30/15
8011	EDB	0.020 U	0.02	0.020	0.010	ug/L	01/29/15	01/30/15
8011	SURROGATE: 1,3-DIBROMOPROPANE	99.7	70-132			%	01/29/15	01/30/15

Quant Method: 80110129.M
Run #: 107167
Instrument: Herbie
Sequence: 150107
Dilution Factor: 1
Initials: LHI

Printed: 02/13/15 12:27:28 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107167.D\ECD1A.CH Vial: 67
Signal #2 : G:\HERBIE\DATA\150107\107167.D\ECD2B.CH
Acq On : 01-30-15 20:52:58 Operator:
Sample : AZ10128W26 2/33.21G Inst : Herbie
Misc : soil Multiplr: 1.02
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 11:18 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:54:08 2015
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

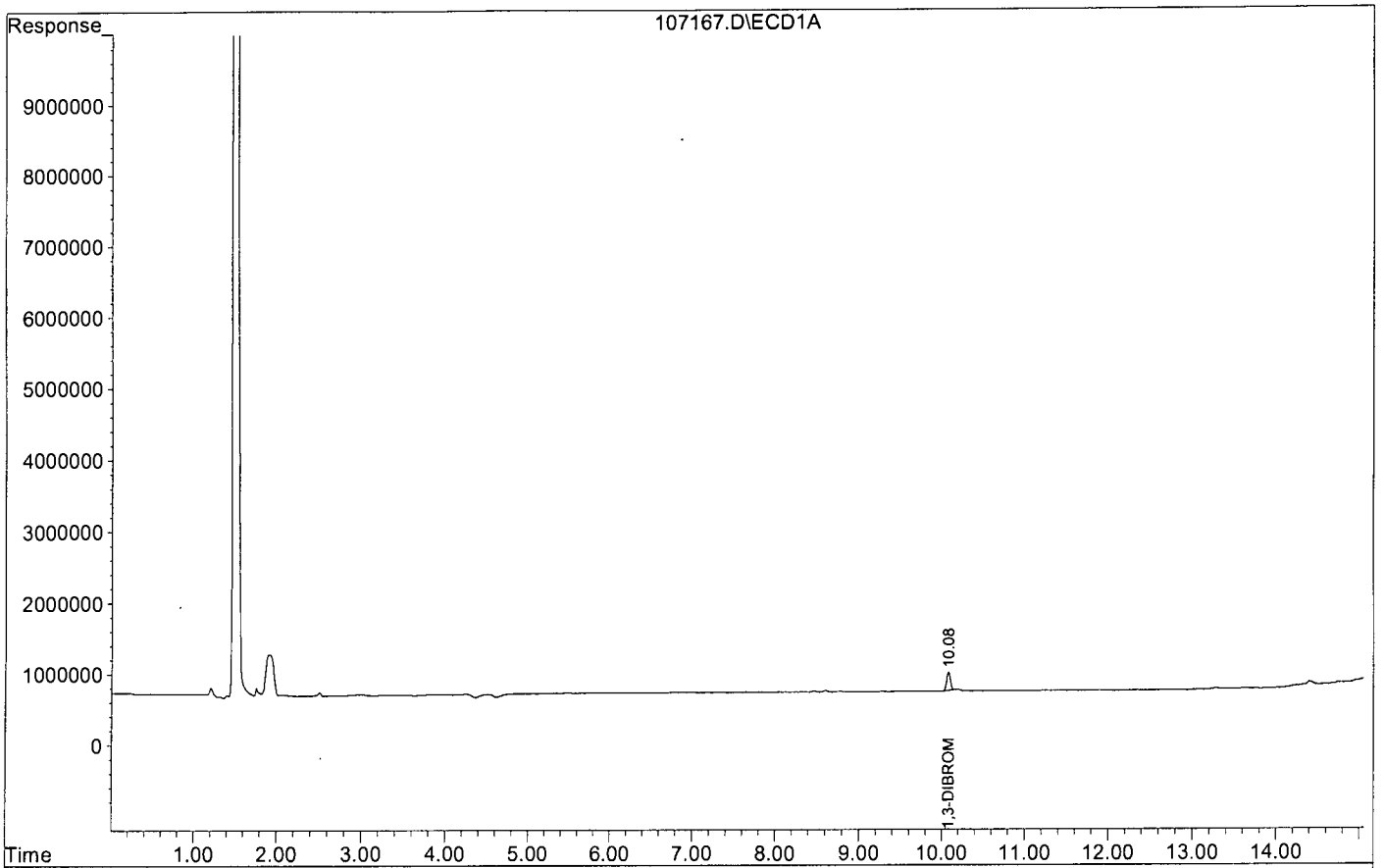
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.11	257225	343830	0.357	0.355
Spiked Amount 0.358			Recovery	=	99.70%	99.14%
Target Compounds						
Target Compounds						
1) TM EDB	0.00	0.00	0	0	N.D. d	N.D. d
2) TM 1,2,3-TCP	0.00	0.00	0	0	N.D.	N.D.
4) TM DBCP	0.00	0.00	0	0	N.D. d	N.D. d

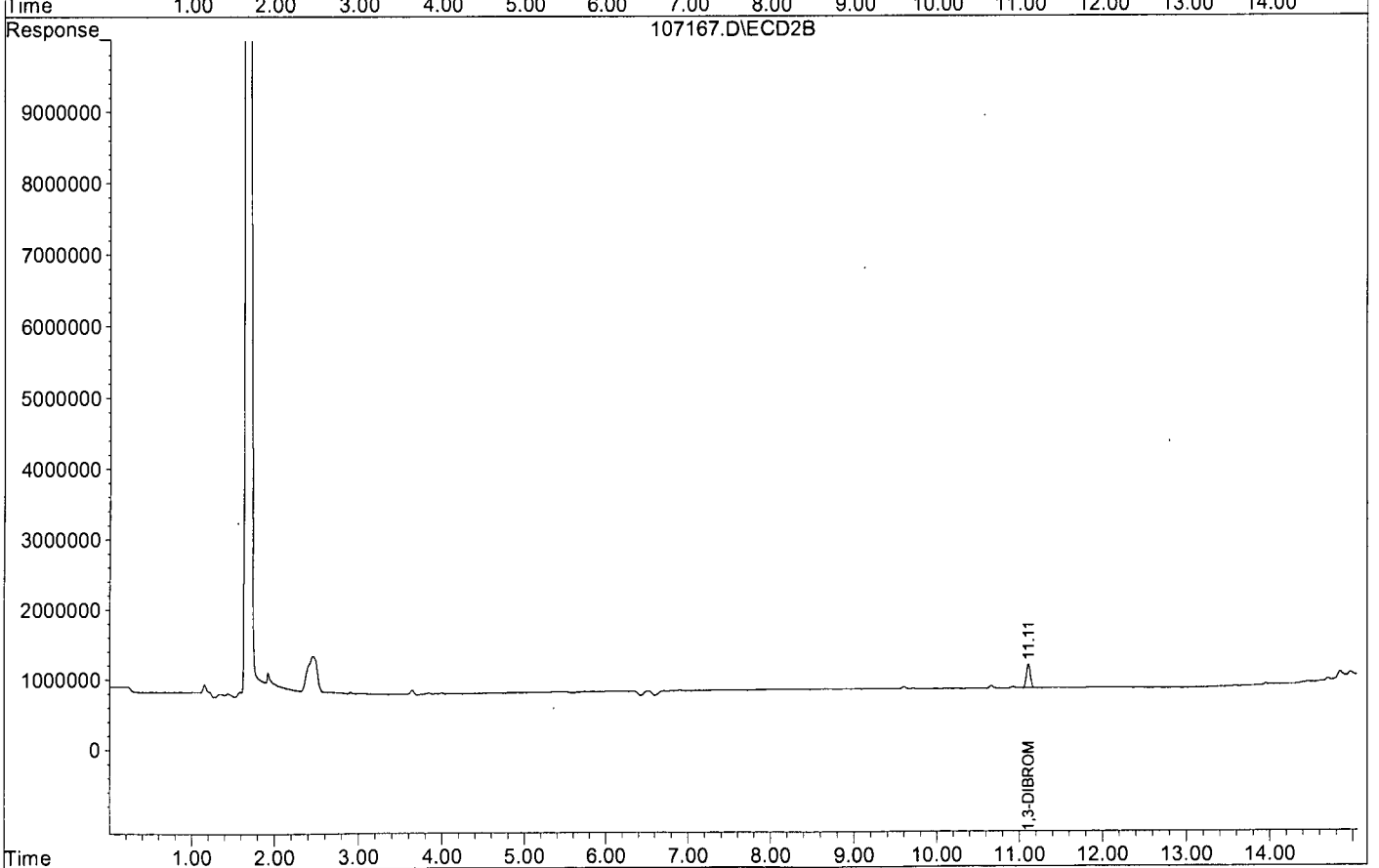
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\150107\107167.D
Acq On : 01-30-15 20:52:58
Sample : AZ10128W26 2/33.21G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 67
Operator:
Inst : Herbie
Multiplr: 1.02





8011
for
DBCP & EDB Fumigants
Calibration Data

APPL, INC.

DBCP/EDB/1,2,3-TCP Analysis by
504 8011 0129

Form 6
Initial Calibration

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

SDG No: 75450
Initial Cal. Date: 01/29/15
Instrument: Herbie

Initials: LH

		Compound	1	2	3	4	5	6					Avg	%RSD		r^2
			107149.D	107150.D	107151.D	107152.D	107153.D	107154.D								
1	TML	EDB	630118	551086	506618	511491	468643	457581					520923	12	TML	0.995
2	TML	1,2,3-TCP	58706	108500	105968	108666	98595	97859					96382	20	TML	0.995
3	S	1,3-DIBROMOPROPANE(S)	423676	393004	370211	359264	336581	329082					368636	9.6	S	
4	TM	DBCP	1431500	1233603	1235456	1276322	1156005	1196546					1254905	7.6	TM	
5																
6	TM	EDB #2	892176	794237	749893	791212	726200	705682					776567	8.6	TM	
7	TM	1,2,3-TCP #2	134500	144408	140764	147712	130822	127761					137661	5.7	TM	
8	S	1,3-DIBROMOPROPANE(S) #2	563941	509581	488887	498821	457578	452828					495273	8.2	S	
9	TM	DBCP #2	2459853	2271143	2269407	2436881	2276984	2310652					2337487	3.7	TM	
10																
11																
12																
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35																

2.1527185

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107149.D\ECD1A.CH Vial: 49
Signal #2 : G:\HERBIE\DATA\150107\107149.D\ECD2B.CH
Acq On : 01-30-15 14:52:12 Operator:
Sample : 8011-1 1/29/15 Inst : Herbie
Misc : Multiplr: 1.02
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 10:51 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:50:53 2015
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

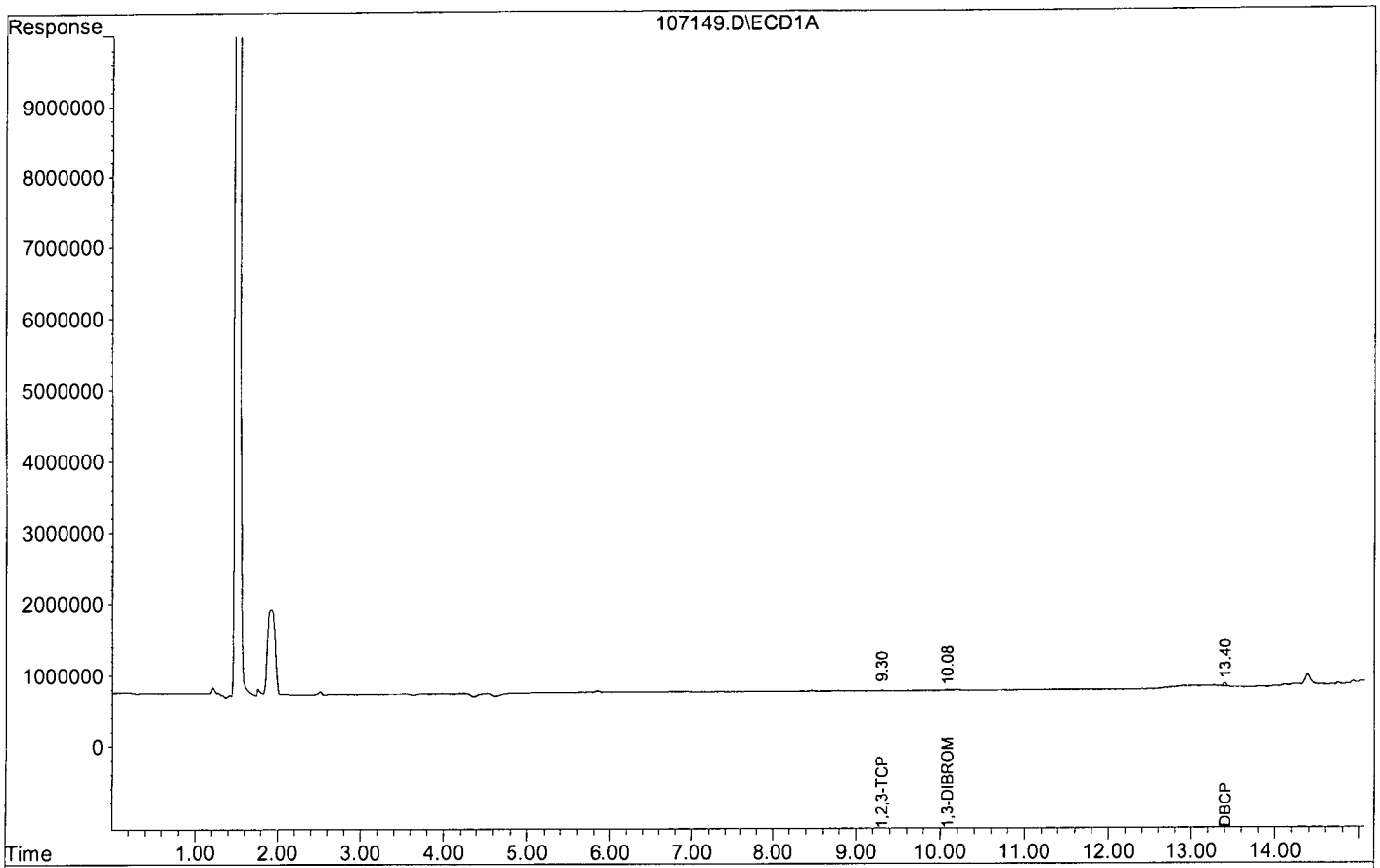
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.11	14405	19174	0.020	0.020
Spiked Amount 0.356			Recovery	=	5.61%	5.61%
Target Compounds						
2) TM 1,2,3-TCP	9.30	10.51	1996	4573	0.011	0.017 #
4) TM DBCP	13.40	14.13	48671	83635	0.006	0.018 #
Target Compounds						
1) TM EDB	5.85	7.29	21424	30334	N.D.	N.D.

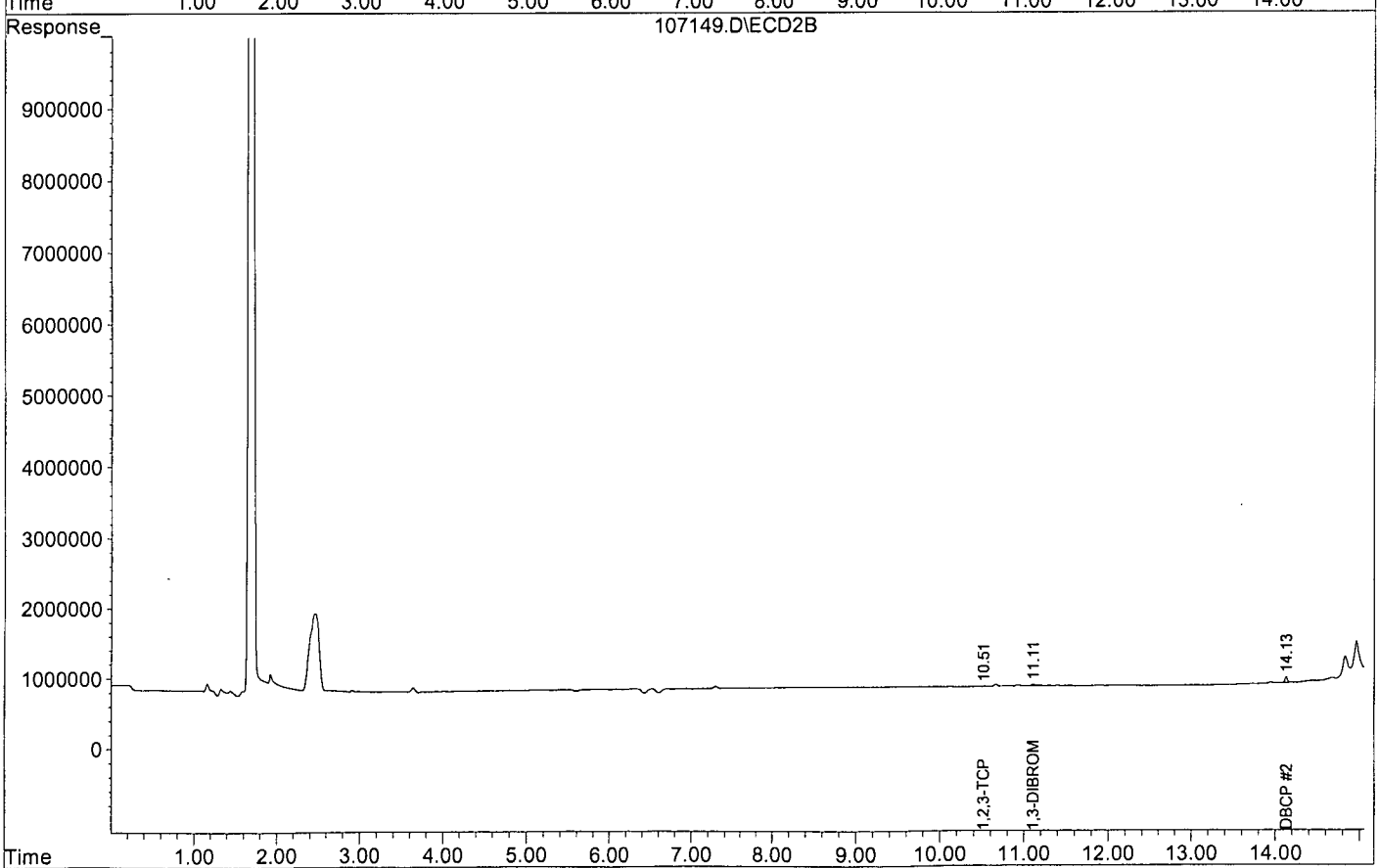
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107149.D
Acq On : 01-30-15 14:52:12
Sample : 8011-1 1/29/15
Misc :
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 49
Operator:
Inst : Herbie
Multiplr: 1.02





Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107150.D\ECD1A.CH Vial: 50
Signal #2 : G:\HERBIE\DATA\150107\107150.D\ECD2B.CH
Acq On : 01-30-15 15:12:24 Operator:
Sample : 8011-2 1/29/15 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 10:51 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:50:53 2015
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	179210	232369	0.243	0.235
Spiked Amount 0.350			Recovery	=	69.35%	67.07%
Target Compounds						
1) TM EDB	5.84	7.29	251295	362172	0.237	0.229
2) TM 1,2,3-TCP	9.31	10.51	49476	65850	0.257	0.239
4) TM DBCP	13.40	14.13	562523	1035641	0.224	0.222

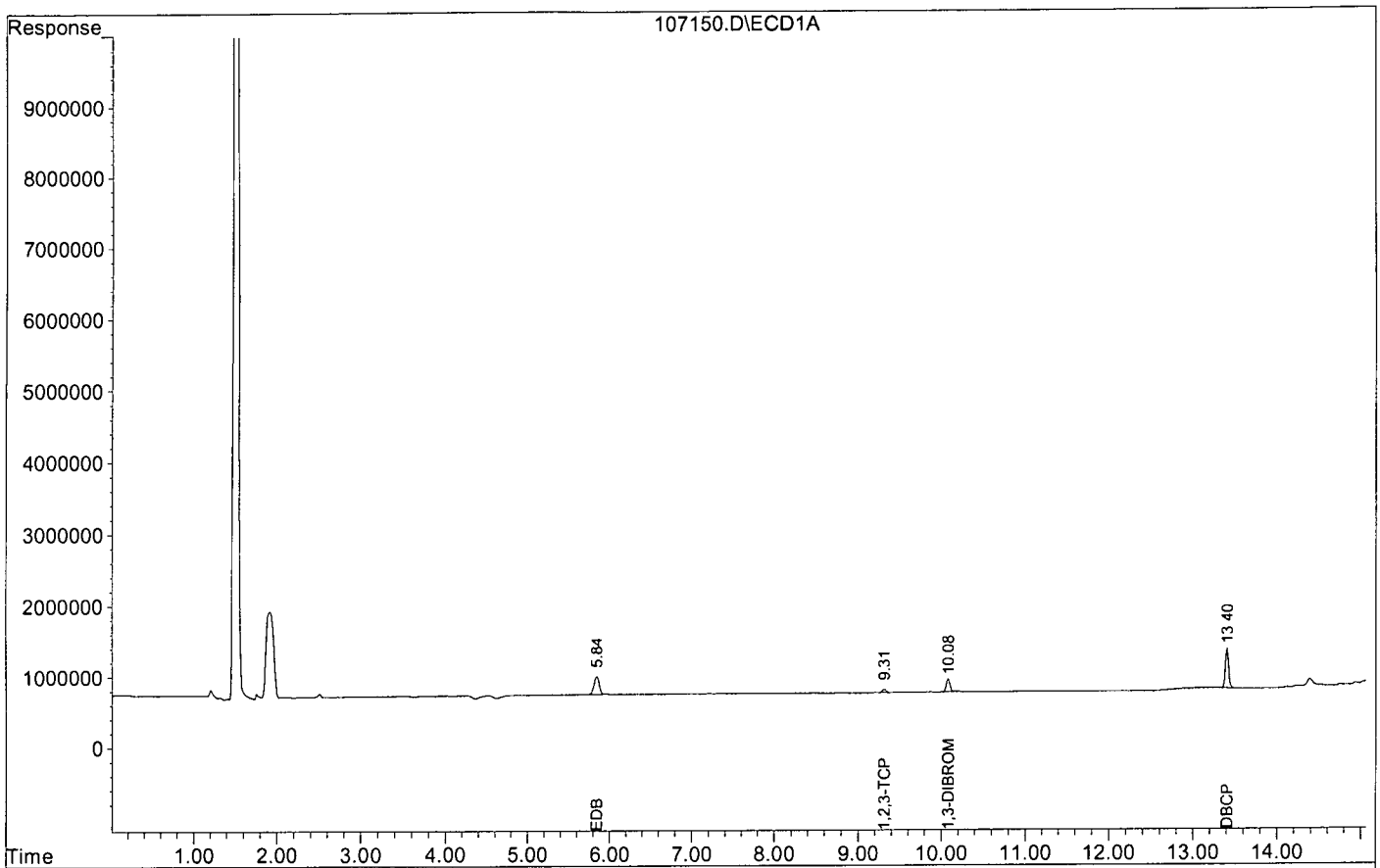
Target Compounds

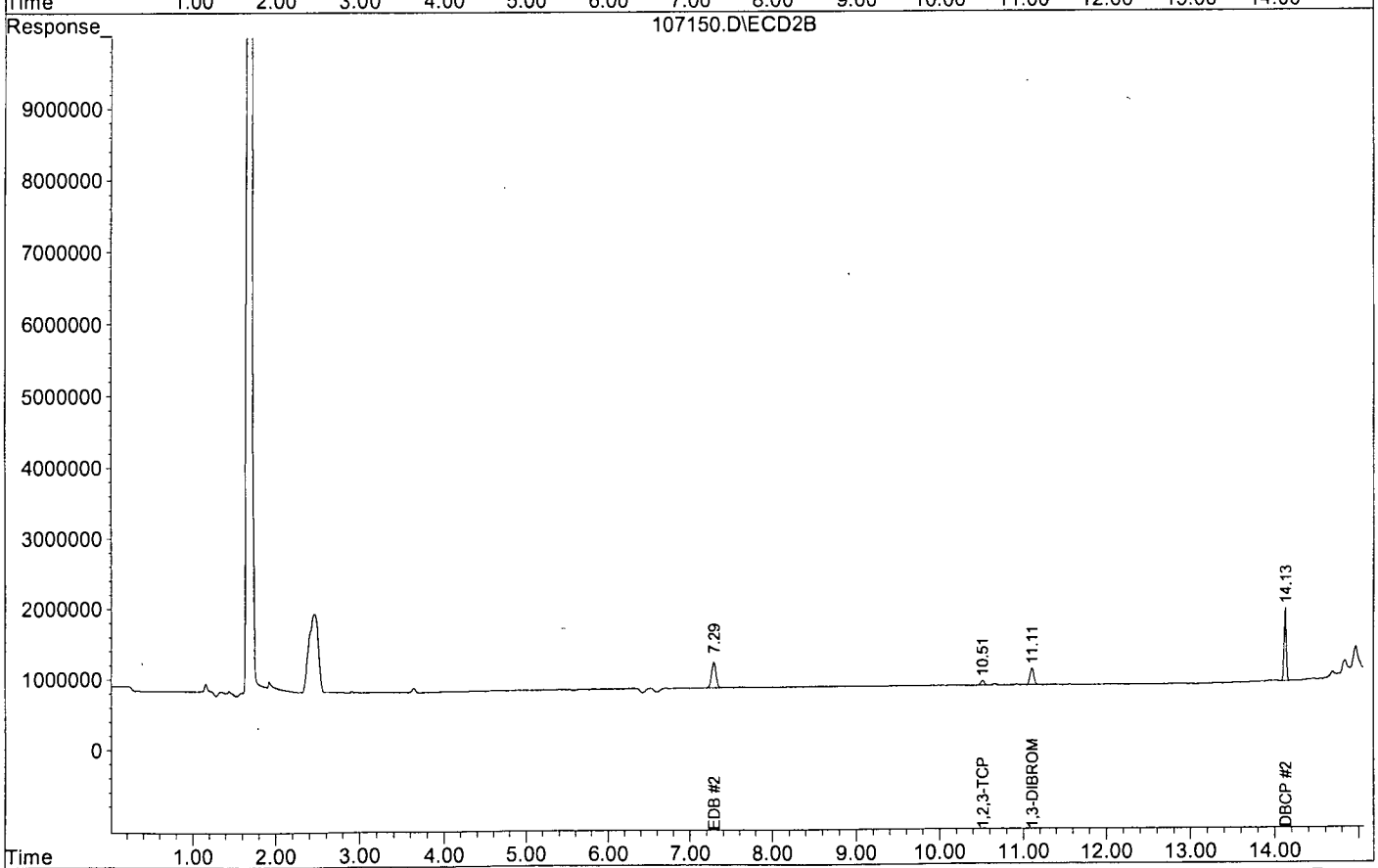
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107150.D
Acq On : 01-30-15 15:12:24
Sample : 8011-2 1/29/15
Misc :
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 50
Operator:
Inst : Herbie
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107151.D\ECD1A.CH Vial: 51
Signal #2 : G:\HERBIE\DATA\150107\107151.D\ECD2B.CH
Acq On : 01-30-15 15:32:35 Operator:
Sample : 8011-3 1/29/15 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 10:51 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:50:53 2015
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	338373	446843	0.460	0.453
Spiked Amount 0.351			Recovery	=	131.02%	129.02%
Target Compounds						
1) TM EDB	5.84	7.28	463049	685402	0.472	0.459
2) TM 1,2,3-TCP	9.31	10.51	96855	128658	0.504	0.469
4) TM DBCP	13.40	14.13	1129207	2074238	0.465	0.445

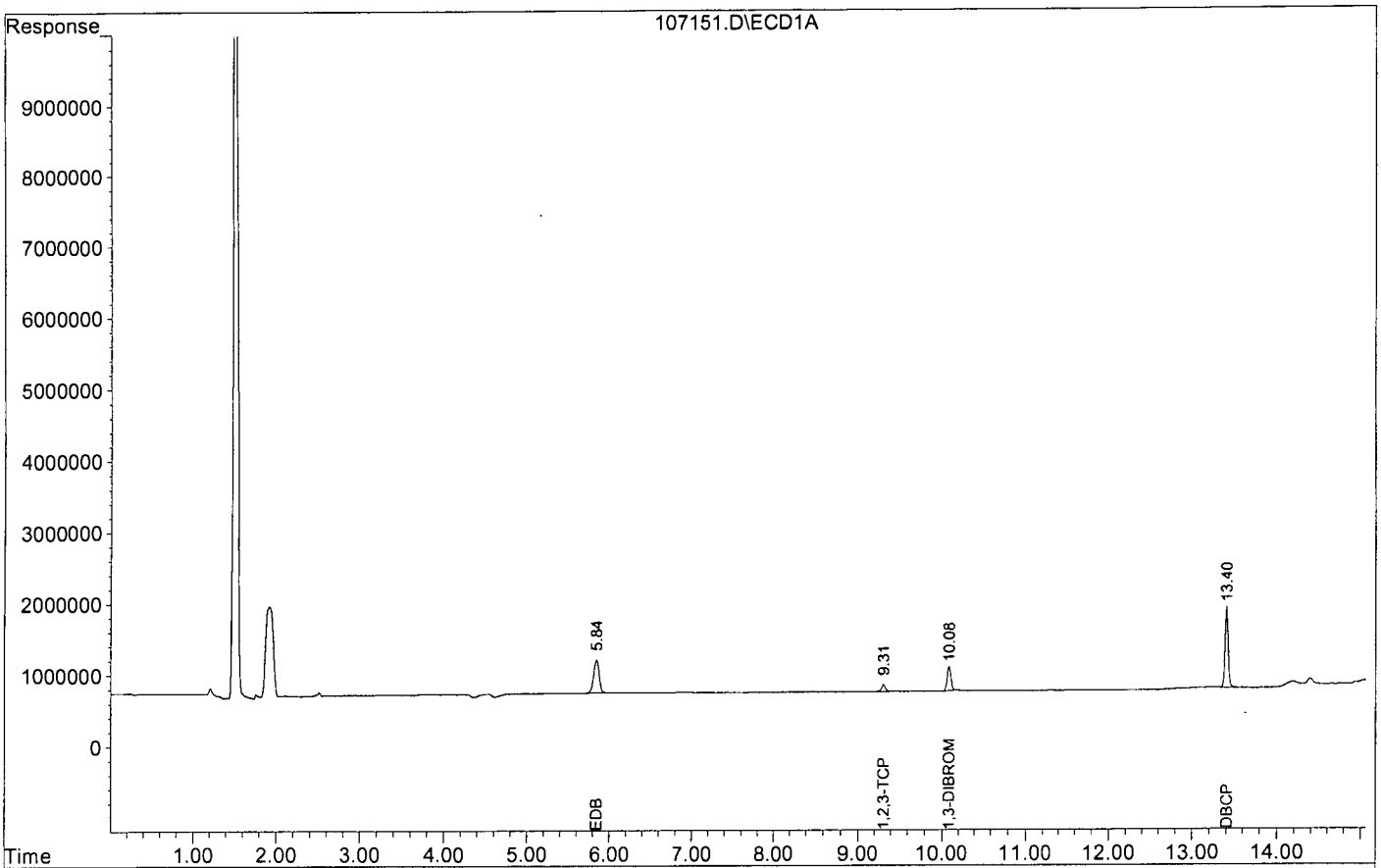
Target Compounds

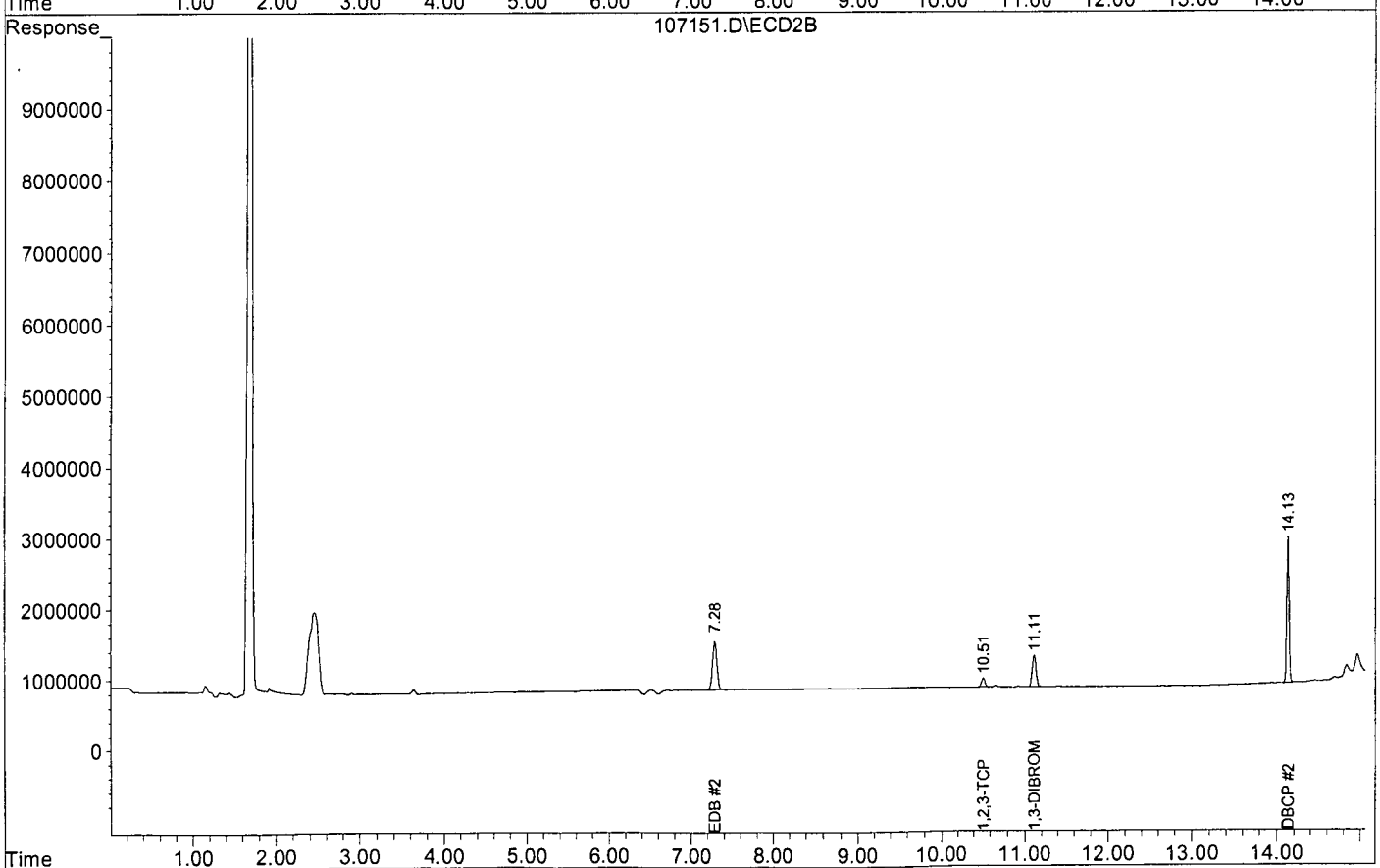
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107151.D
Acq On : 01-30-15 15:32:35
Sample : 8011-3 1/29/15
Misc :
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 51
Operator:
Inst : Herbie
Multiplr: 1.00





Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107152.D\ECD1A.CH Vial: 52
Signal #2 : G:\HERBIE\DATA\150107\107152.D\ECD2B.CH
Acq On : 01-30-15 15:52:52 Operator:
Sample : 8011-4 1/29/15 Inst : Herbie
Misc : Multiplr: 1.01
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 10:51 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:50:53 2015
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

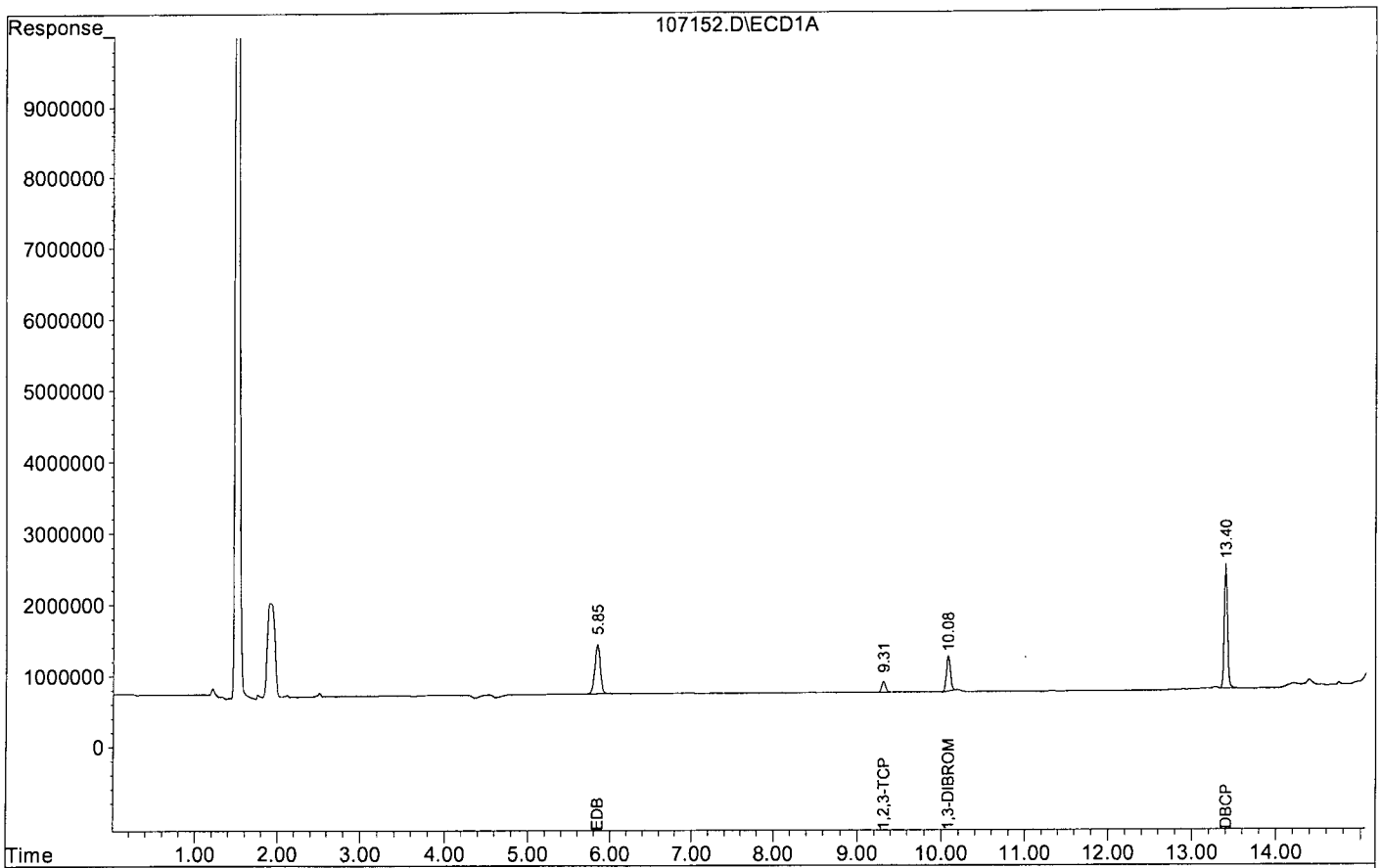
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.11	492191	683385	0.671	0.693
Spiked Amount 0.352			Recovery	=	190.73%	196.98%
Target Compounds						
1) TM EDB	5.85	7.29	700743	1083960	0.737	0.743
2) TM 1,2,3-TCP	9.31	10.52	148873	202366	0.776	0.739
4) TM DBCP	13.40	14.13	1748561	3338527	0.730	0.718
Target Compounds						

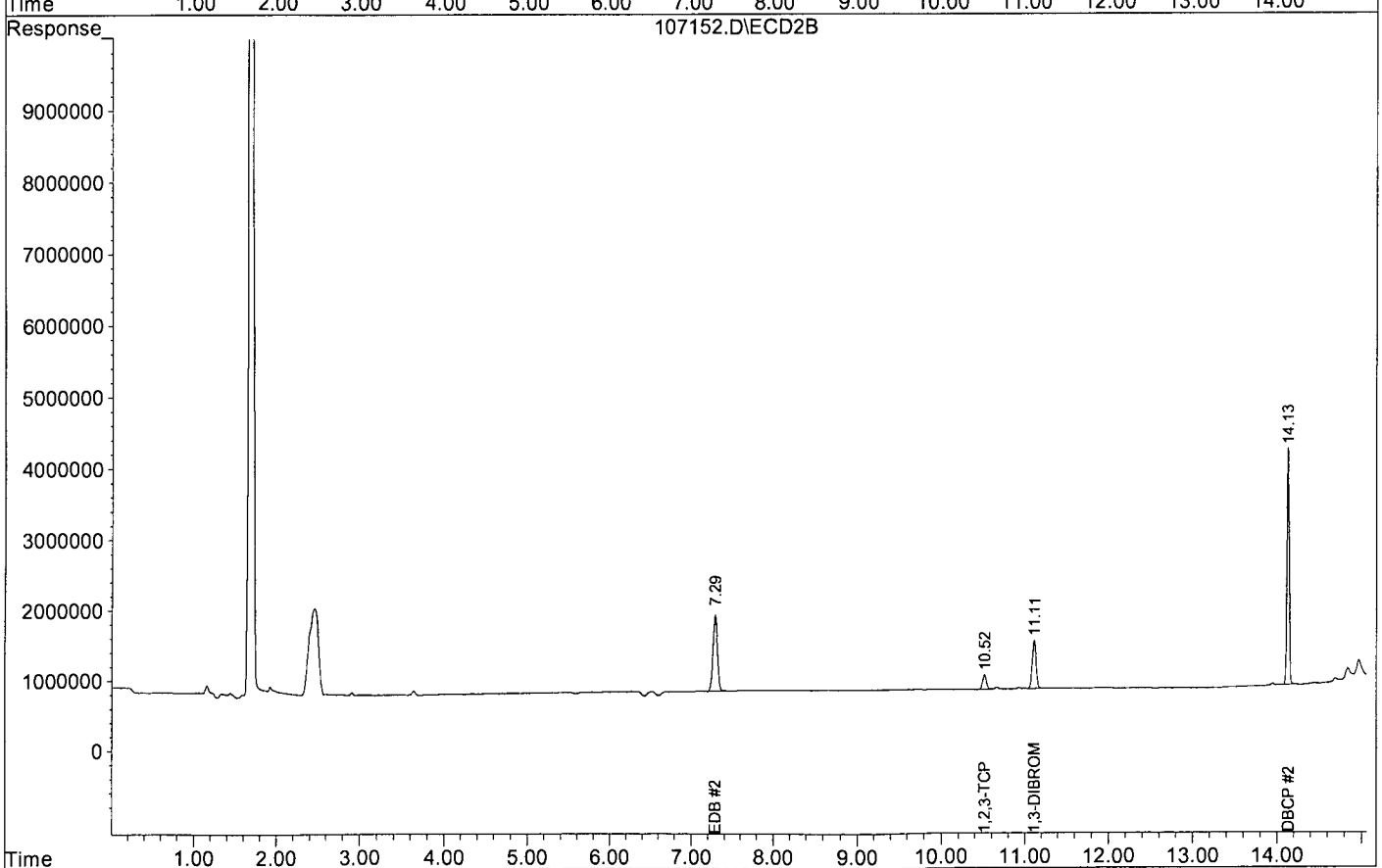
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107152.D
Acq On : 01-30-15 15:52:52
Sample : 8011-4 1/29/15
Misc :
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 52
Operator:
Inst : Herbie
Multiplr: 1.01





Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107153.D\ECD1A.CH Vial: 53
Signal #2 : G:\HERBIE\DATA\150107\107153.D\ECD2B.CH
Acq On : 01-30-15 16:13:01 Operator:
Sample : 8011-5 1/29/15 Inst : Herbie
Misc : Multiplr: 1.02
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 10:51 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:50:53 2015
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	615270	836452	0.853	0.863
Spiked Amount 0.358			Recovery	=	238.42%	241.22%
Target Compounds						
1) TM EDB	5.84	7.29	856679	1327493	0.925	0.931
2) TM 1,2,3-TCP	9.31	10.52	180231	239143	0.956	0.888
4) TM DBCP	13.40	14.13	2113177	4162326	0.900	0.910

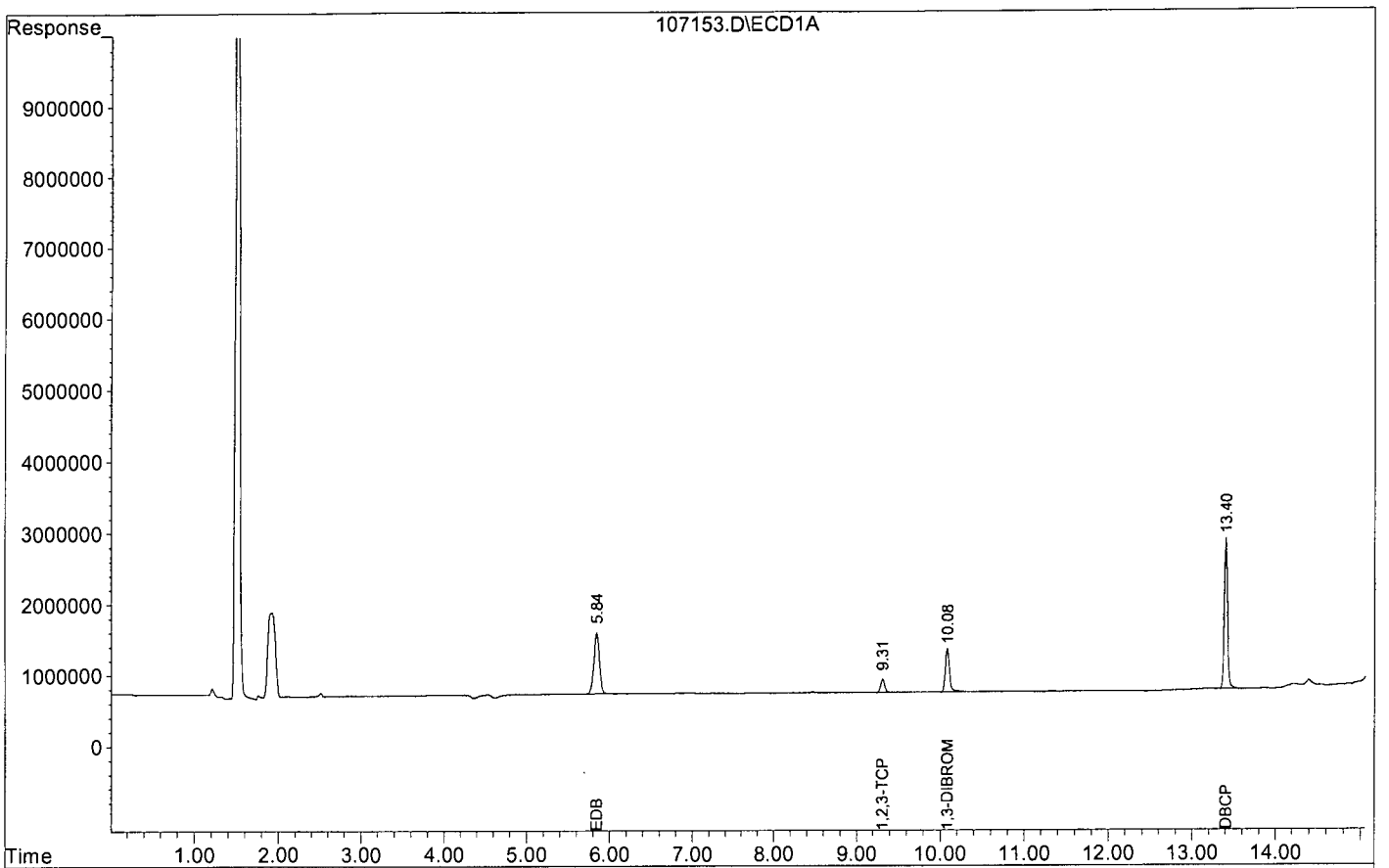
Target Compounds

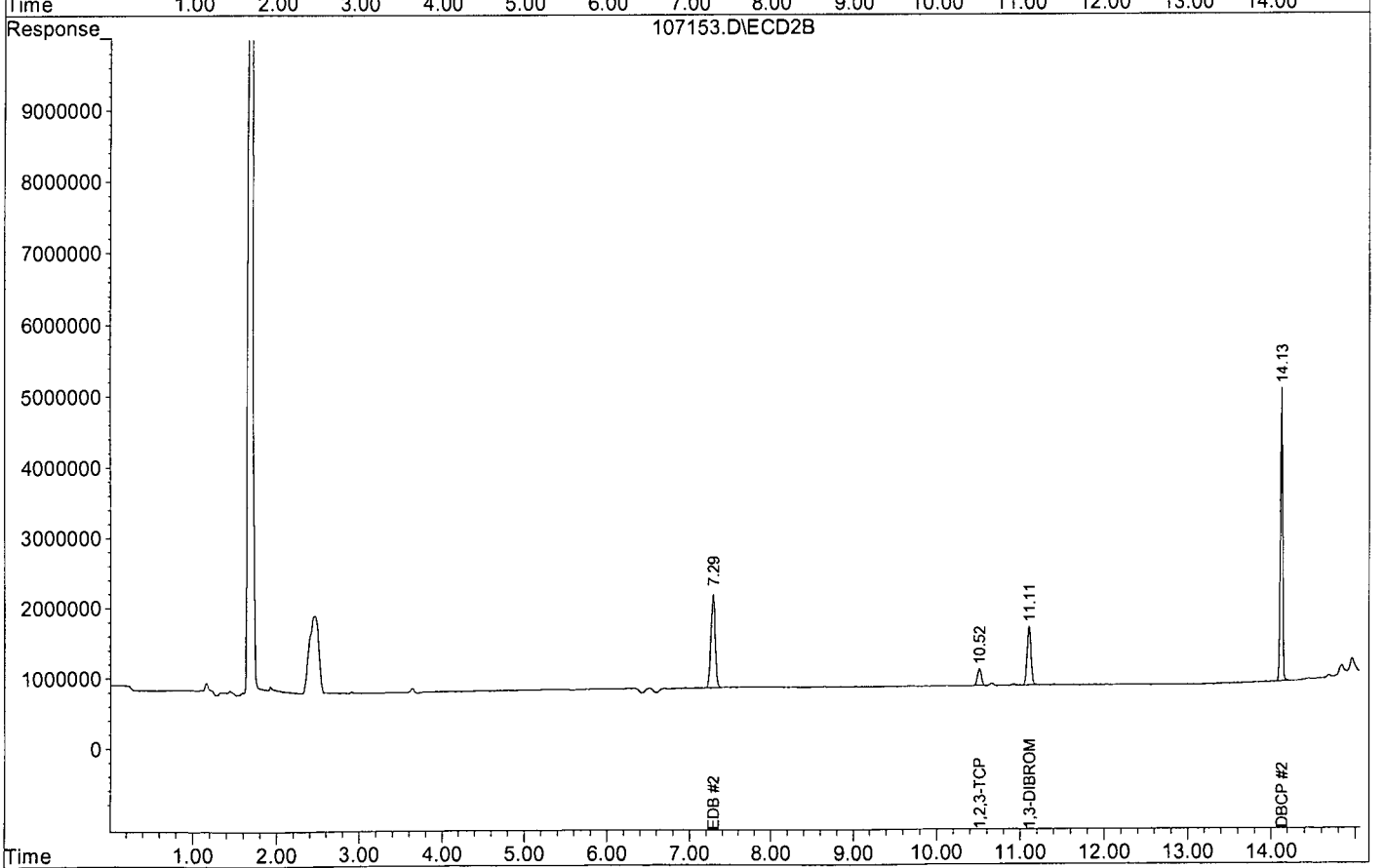
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107153.D
Acq On : 01-30-15 16:13:01
Sample : 8011-5 1/29/15
Misc :
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 53
Operator:
Inst : Herbie
Multiplr: 1.02





Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107154.D\ECD1A.CH Vial: 54
Signal #2 : G:\HERBIE\DATA\150107\107154.D\ECD2B.CH
Acq On : 01-30-15 16:33:12 Operator:
Sample : 8011-6 1/29/15 Inst : Herbie
Misc : Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 10:51 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:50:53 2015
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	751623	1034260	1.019	1.044
Spiked Amount 0.350			Recovery	=	291.14%	298.29%
Target Compounds						
1) TM EDB	5.84	7.29	1045114	1611777	1.113	1.112
2) TM 1,2,3-TCP	9.31	10.52	223511	291806	1.160	1.060
4) TM DBCP	13.40	14.13	2732911	5277530	1.143	1.129

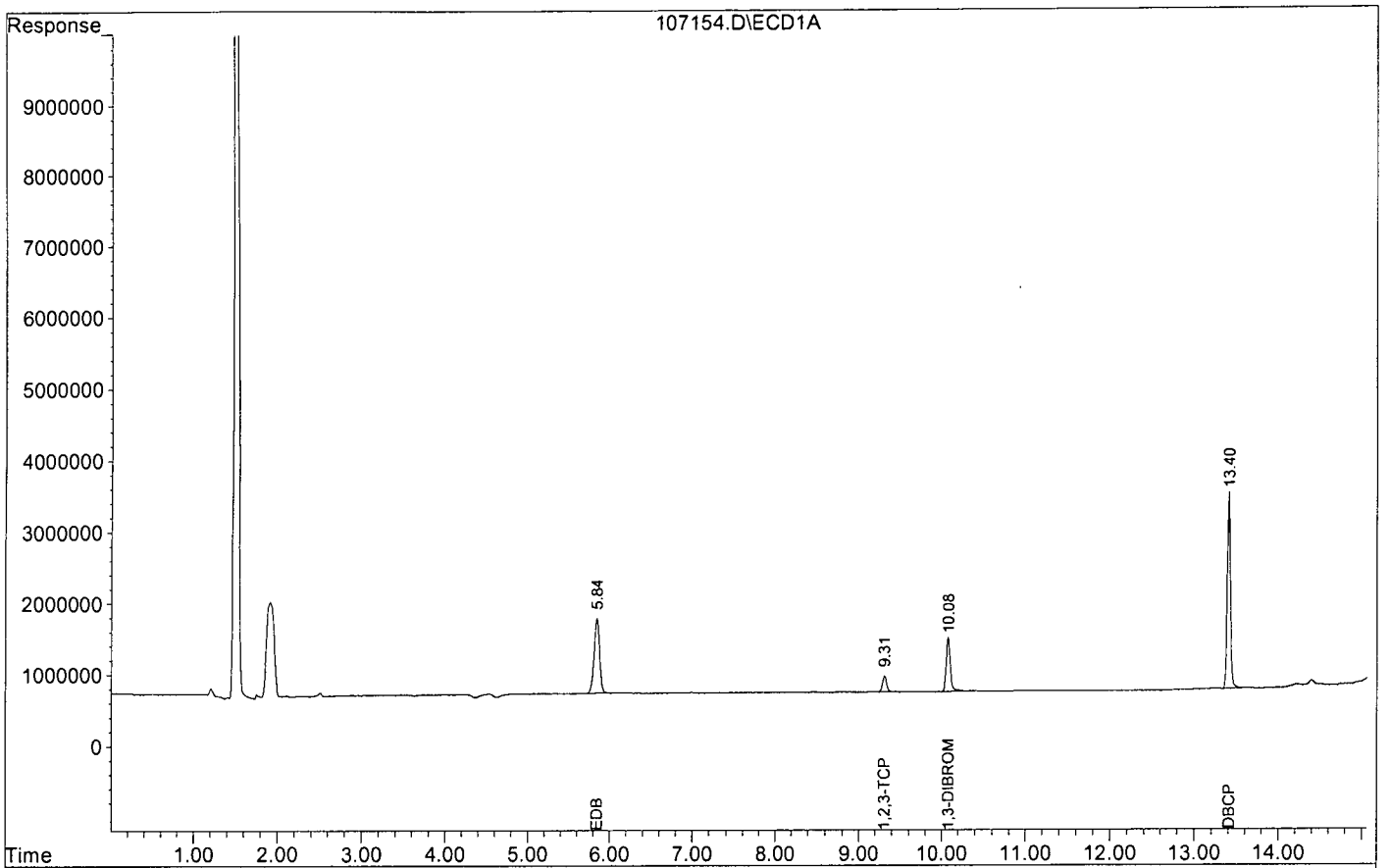
Target Compounds

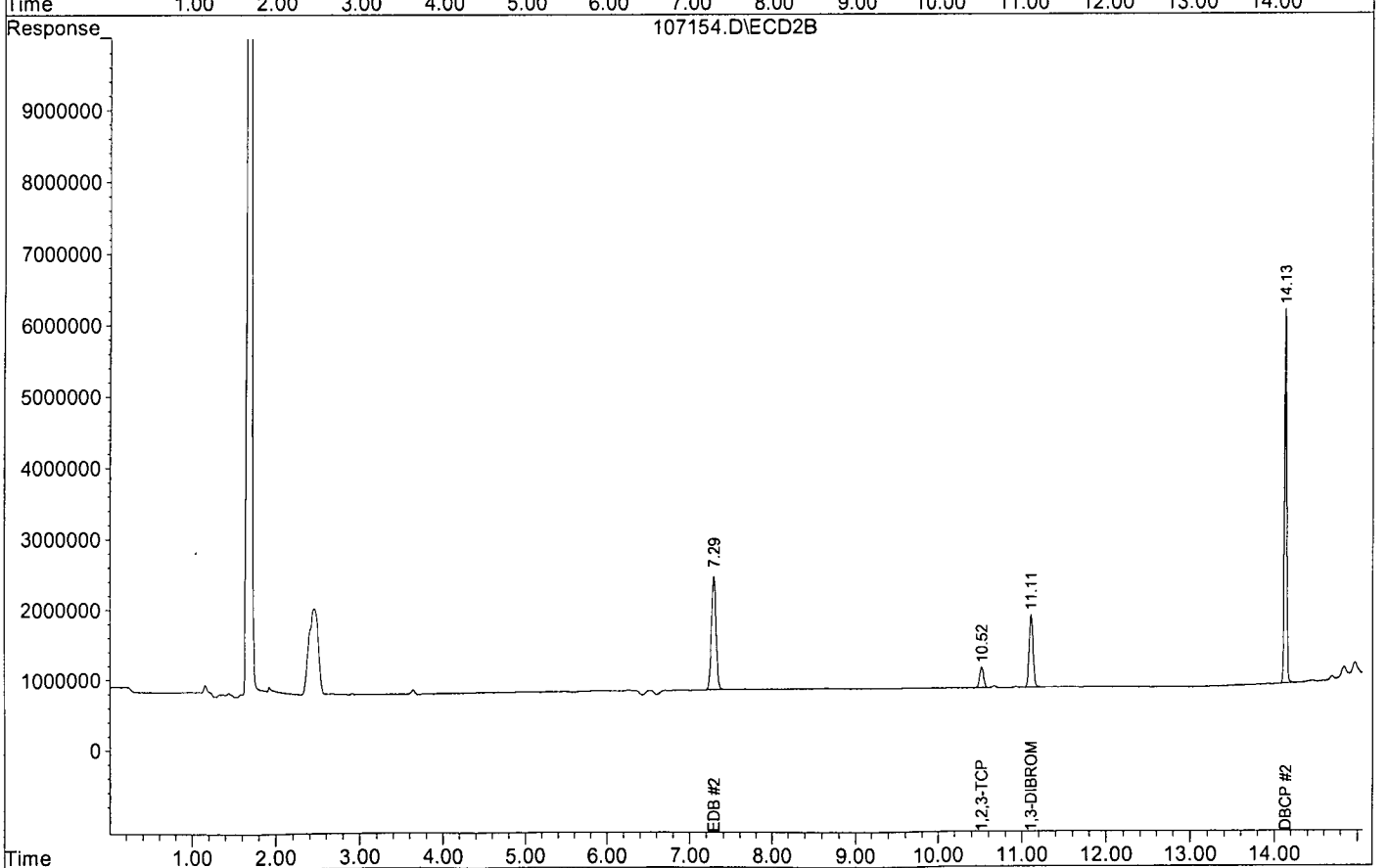
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107154.D
Acq On : 01-30-15 16:33:12
Sample : 8011-6 1/29/15
Misc :
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 54
Operator:
Inst : Herbie
Multiplr: 1.00





DBCP/EDB/1,2,3-TCP Analysis by
504 8011 0129

Form 7

Second Source Calibration

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

SDG No: 75450
Date Analyzed: 01/30/15
Instrument: Herbie
Initial Cal. Date: 01/29/15
Data File: 107157.D

		Compound	MEAN	CCRF	%D		%Drift
1	TML	EDB	520923	498600	4.3	TML	4.3
2	TML	1,2,3-TCP	96382	107300	11	TML	11
3	TM	DBCP	1254910	1241470	1.1	TM	
4	signal #2						
5	TM	EDB	776567	745615	4.0	TM	
6	TM	1,2,3-TCP	137661	141712	2.9	TM	
7	TM	DBCP	2337490	2339560	0.09	TM	
8							
9							
10							
11							
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29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
		Average			#REF!		

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

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107157.D\ECD1A.CH Vial: 57
Signal #2 : G:\HERBIE\DATA\150107\107157.D\ECD2B.CH
Acq On : 01-30-15 17:33:41 Operator:
Sample : 150129A LCS-2 2/34.92G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 12:26 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 12:25:24 2015
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	258587	334090	0.352	0.338
Spiked Amount 0.351			Recovery	=	100.34%	96.35%
Target Compounds						
1) TM EDB	5.84	7.29	455720	681492	0.438	0.440
2) TM 1,2,3-TCP	9.31	10.51	98072	129525	0.510	0.472
4) TM DBCP	13.40	14.13	1134708	2138358	0.453	0.458

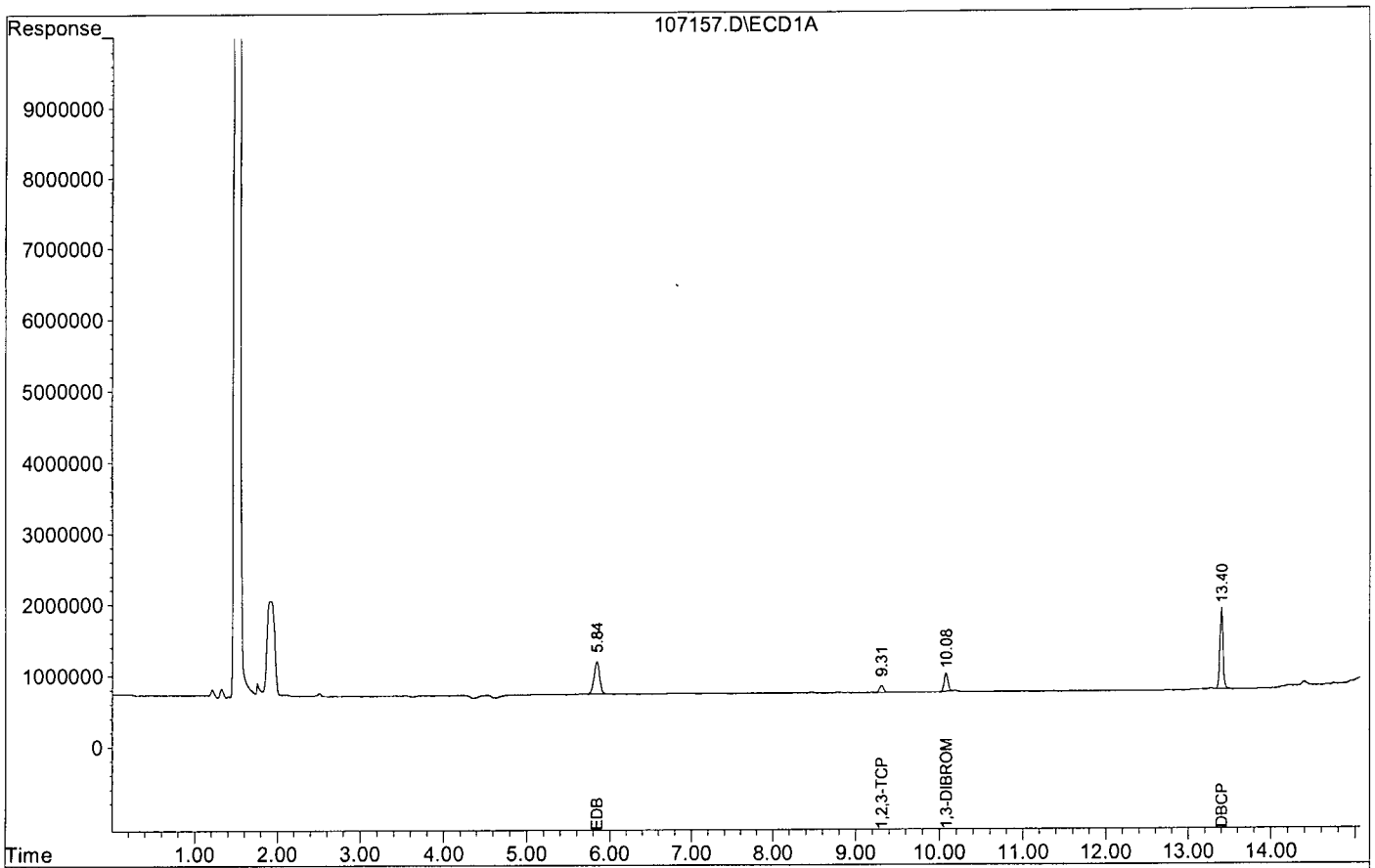
Target Compounds

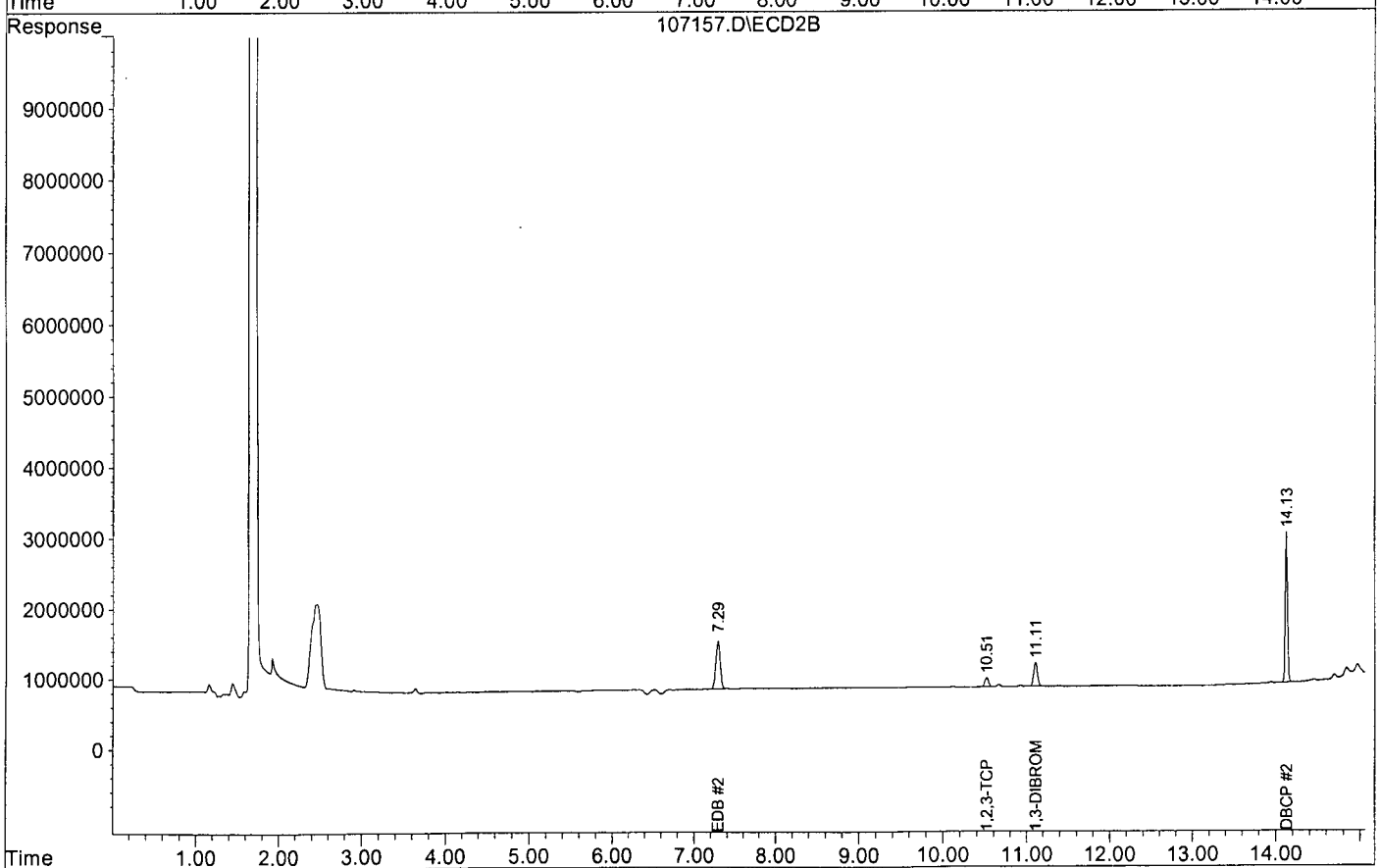
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107157.D
Acq On : 01-30-15 17:33:41
Sample : 150129A LCS-2 2/34.92G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 57
Operator:
Inst : Herbie
Multiplr: 1.00





DBCP/EDB/1,2,3-TCP Analysis by
504 8011 0129

Form 7

Continuing Calibration

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

SDG No: 75450
Date Analyzed: 01/30/15
Instrument: Herbie
Initial Cal. Date: 01/29/15
Data File: 107169.D

		Compound	MEAN	CCRF	%D	%Drift	
1	TML	EDB	520923	501350	3.8	TML	1.9
2	TML	1,2,3-TCP	96382	107672	12	TML	5.0
3	S	1,3-DIBROMOPROPANE(S)	368636	370914	0.62	S	
4	TM	DBCP	1254910	1254290	0.05	TM	
5							
6							
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34							
35							
36							
37							
38							
39							
40							
		Average			4.1		

DBCP/EDB/1,2,3-TCP Analysis by
504 8011 0129

Form 7

Continuing Calibration

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

SDG No: 75450
Date Analyzed: 01/30/15
Instrument: Herbie
Cal. Date: 01/29/15
Data File: 107169.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	EDB	776567	745154	4.0	TM	
42	TM	1,2,3-TCP	137661	144081	4.7	TM	
43	S	1,3-DIBROMOPROPANE(S)	495273	492739	0.51	S	
44	TM	DBCP	2337490	2146950	8.2	TM	
45							
46							
47							
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75							
76							
77							
78							
79							
80							
		Average			4.4		

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107169.D\ECD1A.CH Vial: 69
Signal #2 : G:\HERBIE\DATA\150107\107169.D\ECD2B.CH
Acq On : 01-30-15 21:32:43 Operator:
Sample : 8011-3 1/29/15 Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 10:59 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:54:08 2015
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	339015	450363	0.460	0.455
Spiked Amount 0.350			Recovery	=	131.43%	130.00%
Target Compounds						
1) TM EDB	5.84	7.29	458234	681071	0.466	0.439
2) TM 1,2,3-TCP	9.31	10.52	98412	131690	0.480	0.478
4) TM DBCP	13.40	14.13	1146423	1962313	0.457	0.420

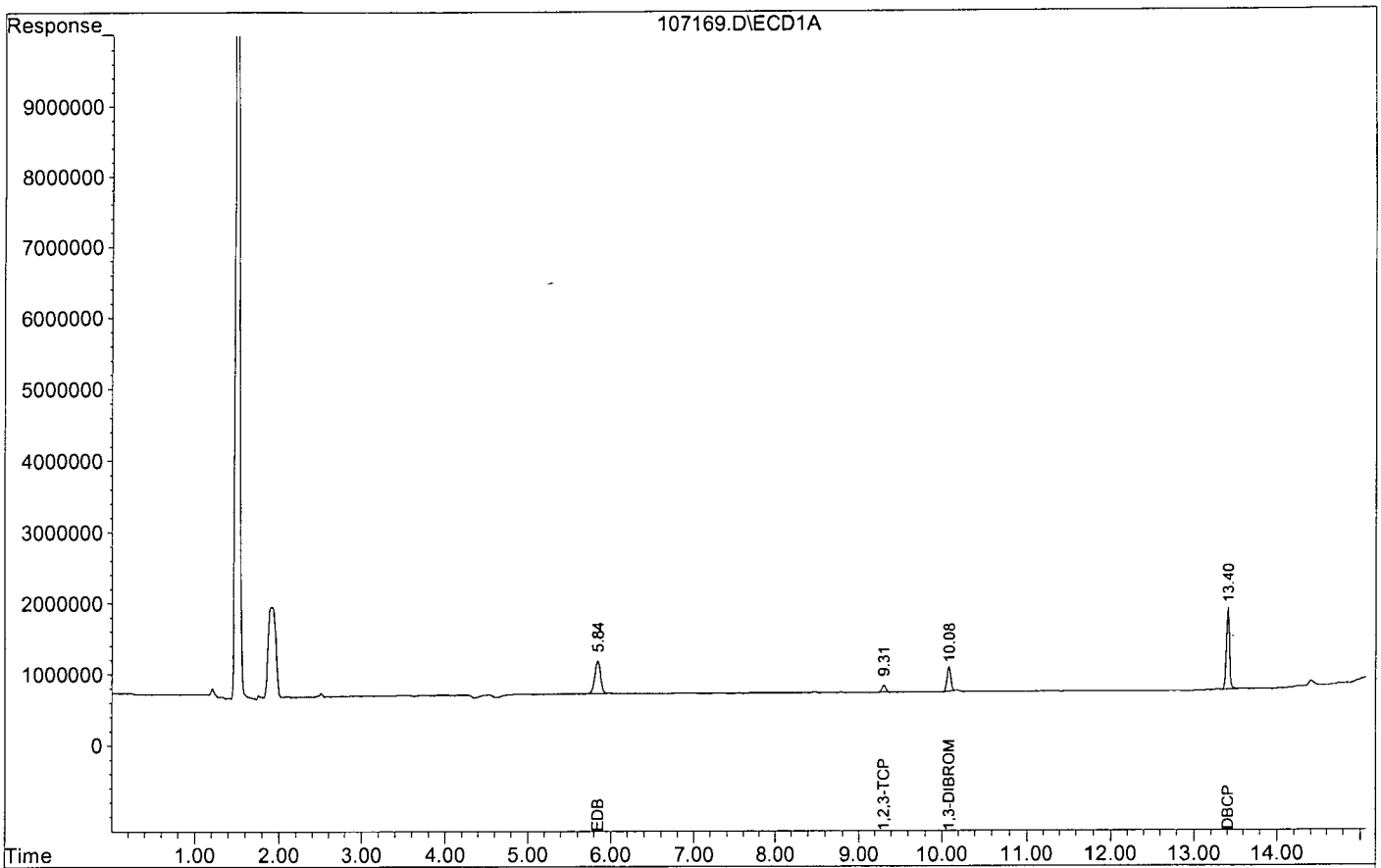
Target Compounds

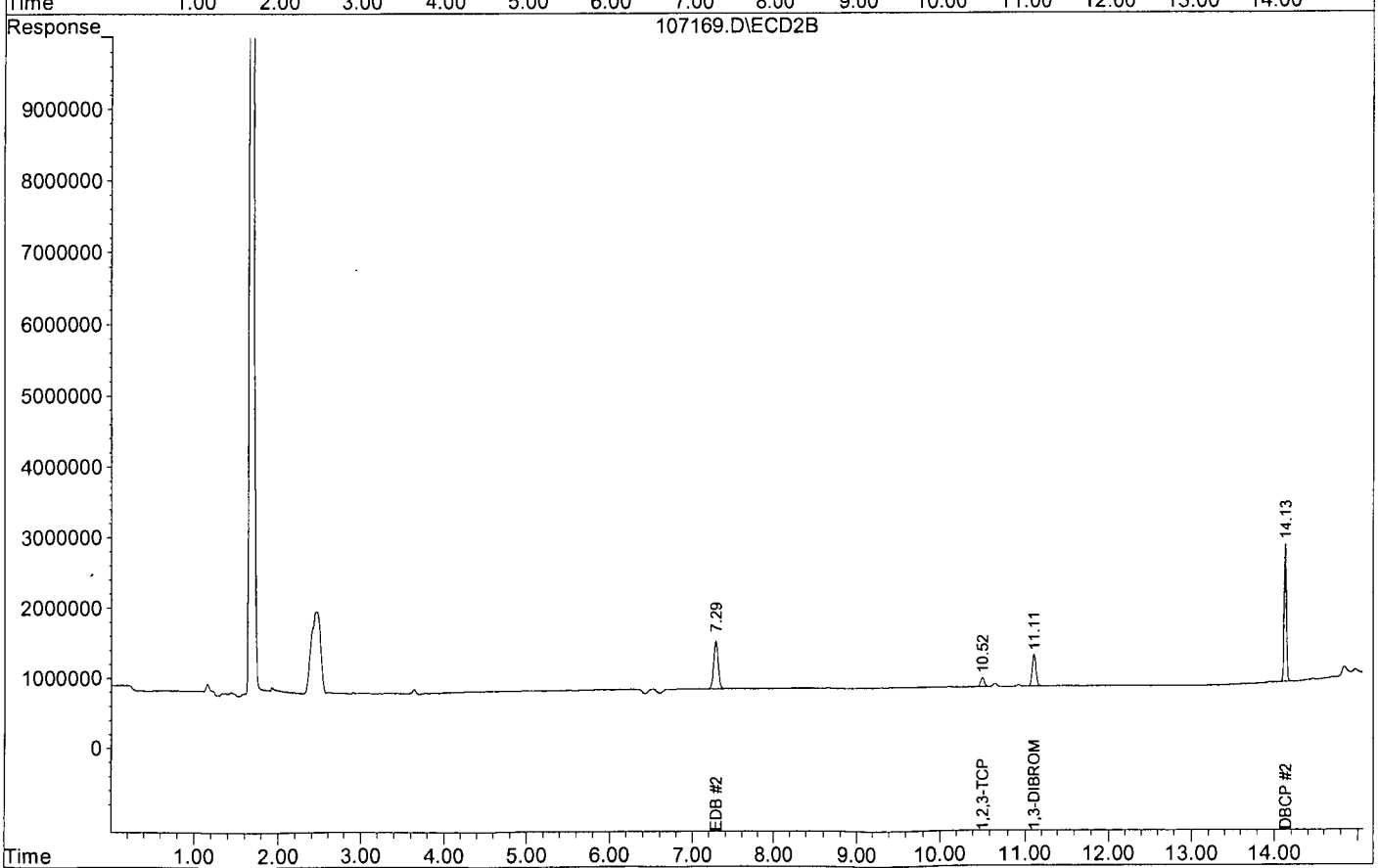
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107169.D
Acq On : 01-30-15 21:32:43
Sample : 8011-3 1/29/15
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 69
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: **150129W-10128 - 194134**
Batch ID: #8011-150129A

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	01/29/15	01/30/15
BLANK	EDB	0.020 U	0.02	0.020	0.010	ug/L	01/29/15	01/30/15
BLANK	SURROGATE: 1,3-DIBROMOPRO	94.8	70-132			%	01/29/15	01/30/15

Quant Method:80110129.M
Run #:107155
Instrument:Herbie
Sequence:150107
Initials:LHI

GC SC-Blank-REG MDLs
Printed: 02/13/15 12:27:34 PM

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107155.D\ECD1A.CH Vial: 55
Signal #2 : G:\HERBIE\DATA\150107\107155.D\ECD2B.CH
Acq On : 01-30-15 16:53:29 Operator:
Sample : 150129A Blk 2/34.26G Inst : Herbie
Misc : soil Multiplr: 1.02
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 11:13 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:54:08 2015
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

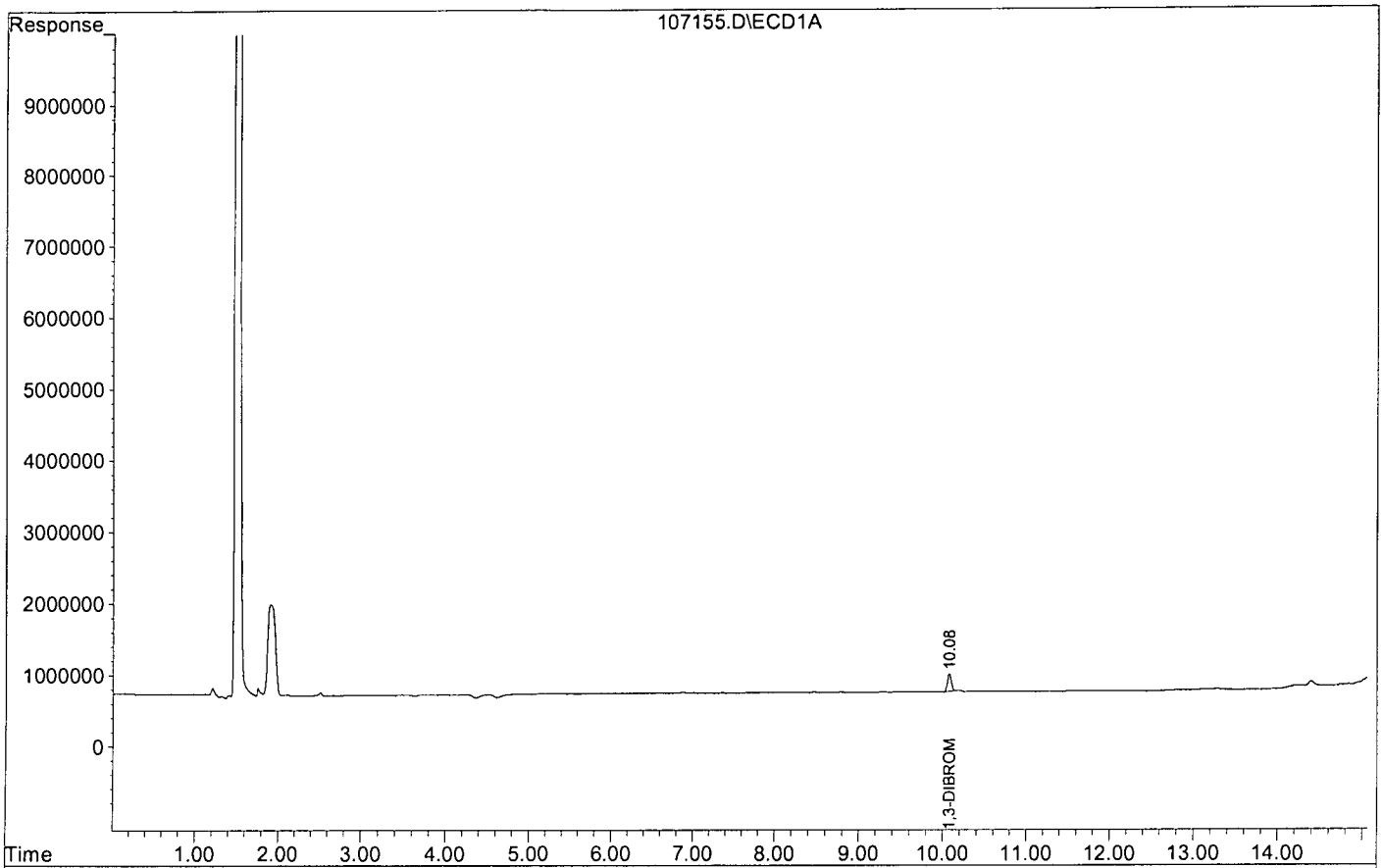
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.11	244474	325385	0.339	0.336
Spiked Amount 0.358			Recovery	=	94.81%	93.97%
Target Compounds						
Target Compounds						
1) TM EDB	0.00	0.00	0	0	N.D.	N.D.
2) TM 1,2,3-TCP	0.00	0.00	0	0	N.D. d	N.D. d
4) TM DBCP	0.00	0.00	0	0	N.D.	N.D.

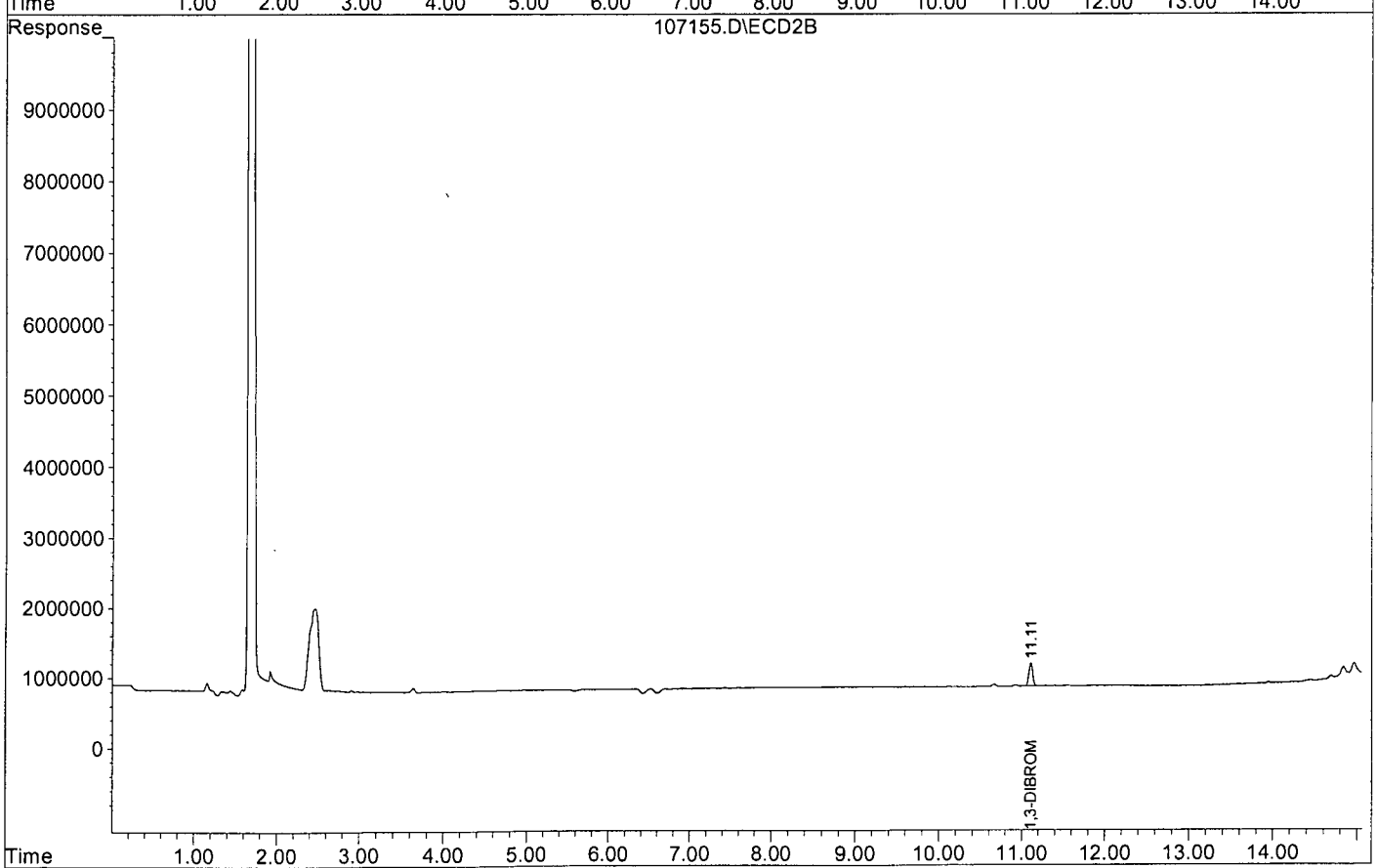
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\150107\107155.D
Acq On : 01-30-15 16:53:29
Sample : 150129A Blk 2/34.26G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 55
Operator:
Inst : Herbie
Multiplr: 1.02





Laboratory Control Spike Recovery
EPA 8011

APPL ID: **150129W-10128 LCS - 194134**
Batch ID: #8011-150129A

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	0.453	94.0	60-140
EDB	0.482	0.464	96.3	60-140
SURROGATE: 1,3-DIBROMOPROPANE (	0.350	0.352	101	70-132

Comments: _____

Primary	SPK
Quant Method :	80110129.M
Extraction Date :	01/29/15
Analysis Date :	01/30/15
Instrument :	Herbie
Run :	107157
Initials :	LHI

Printed: 02/13/15 12:27:35 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107157.D\ECD1A.CH Vial: 57
Signal #2 : G:\HERBIE\DATA\150107\107157.D\ECD2B.CH
Acq On : 01-30-15 17:33:41 Operator:
Sample : 150129A LCS-2 2/34.92G Inst : Herbie
Misc : soil Multiplr: 1.00
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 12:26 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 12:25:24 2015
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

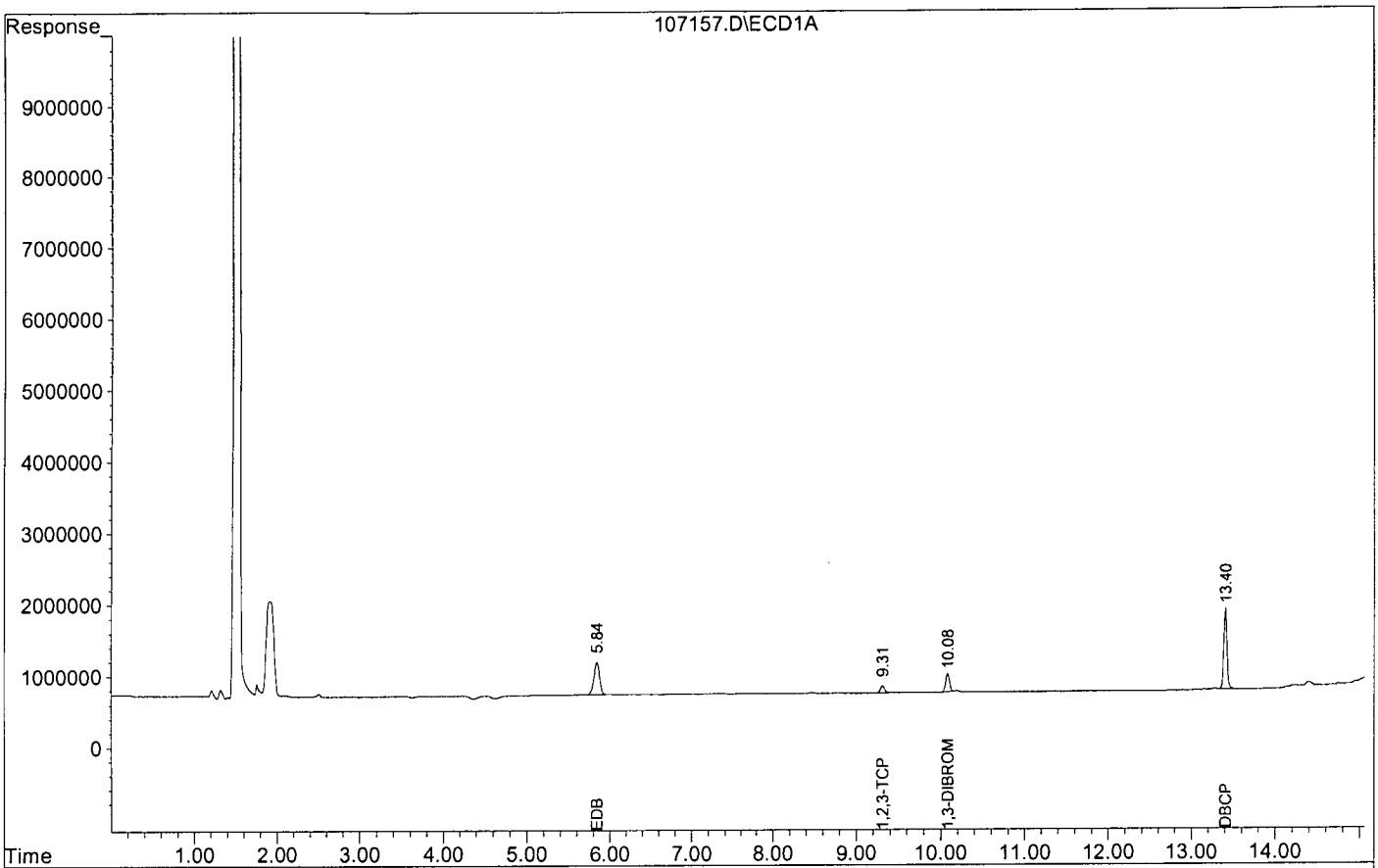
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.11	258587	334090	0.352	0.338
Spiked Amount 0.351			Recovery	=	100.34%	96.35%
Target Compounds						
1) TM EDB	5.84	7.29	455720	681492	0.438	0.440
2) TM 1,2,3-TCP	9.31	10.51	98072	129525	0.510	0.472
4) TM DBCP	13.40	14.13	1134708	2138358	0.453	0.458
Target Compounds						

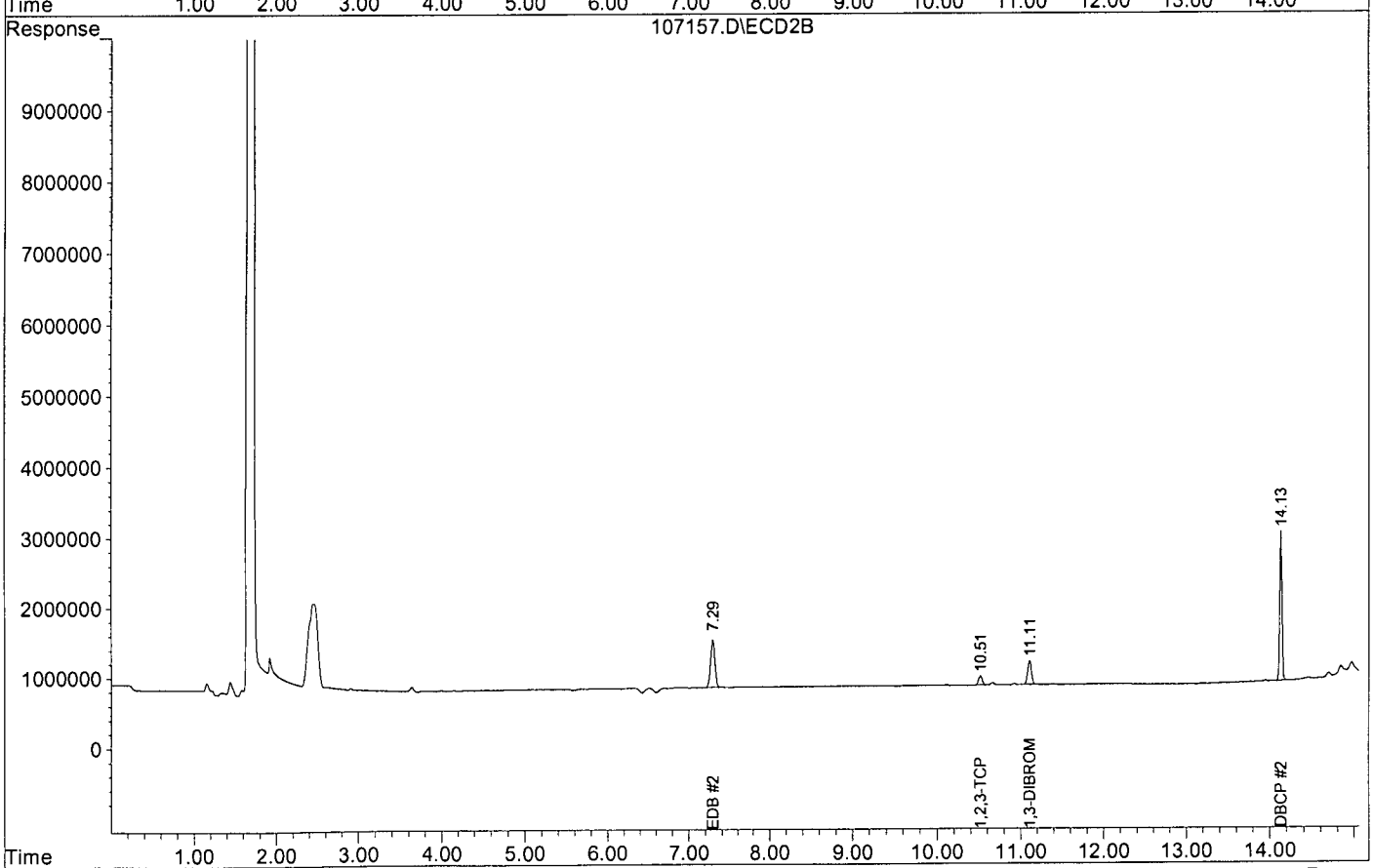
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : G:\HERBIE\DATA\150107\107157.D
Acq On : 01-30-15 17:33:41
Sample : 150129A LCS-2 2/34.92G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 57
Operator:
Inst : Herbie
Multiplr: 1.00





Matrix Spike Recoveries

EPA 8011

APPL ID: **150129W-10128 MS - 194134**
Batch ID: #8011-150129A
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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	0.499	0.506	104	105	60-140	1.4	25
EDB	0.482	ND	0.501	0.496	104	103	60-140	1.0	25
SURROGATE: 1,3-DIBROMOPROPANE (	0.350	NA	0.347	0.362	99.1	103	70-132		

Comments: _____

Primary	SPK	DUP
Quant Method :	80110129.M	80110129.M
Extraction Date :	01/29/15	01/29/15
Analysis Date :	01/30/15	01/30/15
Instrument :	Herbie	Herbie
Run :	107165	107166
Initials :	LHI	

Printed: 02/13/15 12:27:44 PM
APPL MSD SCII

Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107165.D\ECD1A.CH Vial: 65
Signal #2 : G:\HERBIE\DATA\150107\107165.D\ECD2B.CH
Acq On : 01-30-15 20:13:17 Operator:
Sample : AZ10128W20 MS-2 2/34.40G Inst : Herbie
Misc : soil Multiplr: 1.02
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 11:17 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:54:08 2015
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	251408	333994	0.347	0.343
Spiked Amount 0.356			Recovery	=	97.44%	96.32%
Target Compounds						
1) TM EDB	5.84	7.29	482653	710651	0.501	0.466
2) TM 1,2,3-TCP	9.31	10.52	103181	136373	0.513	0.504
4) TM DBCP	13.40	14.13	1192783	2192653	0.484	0.477

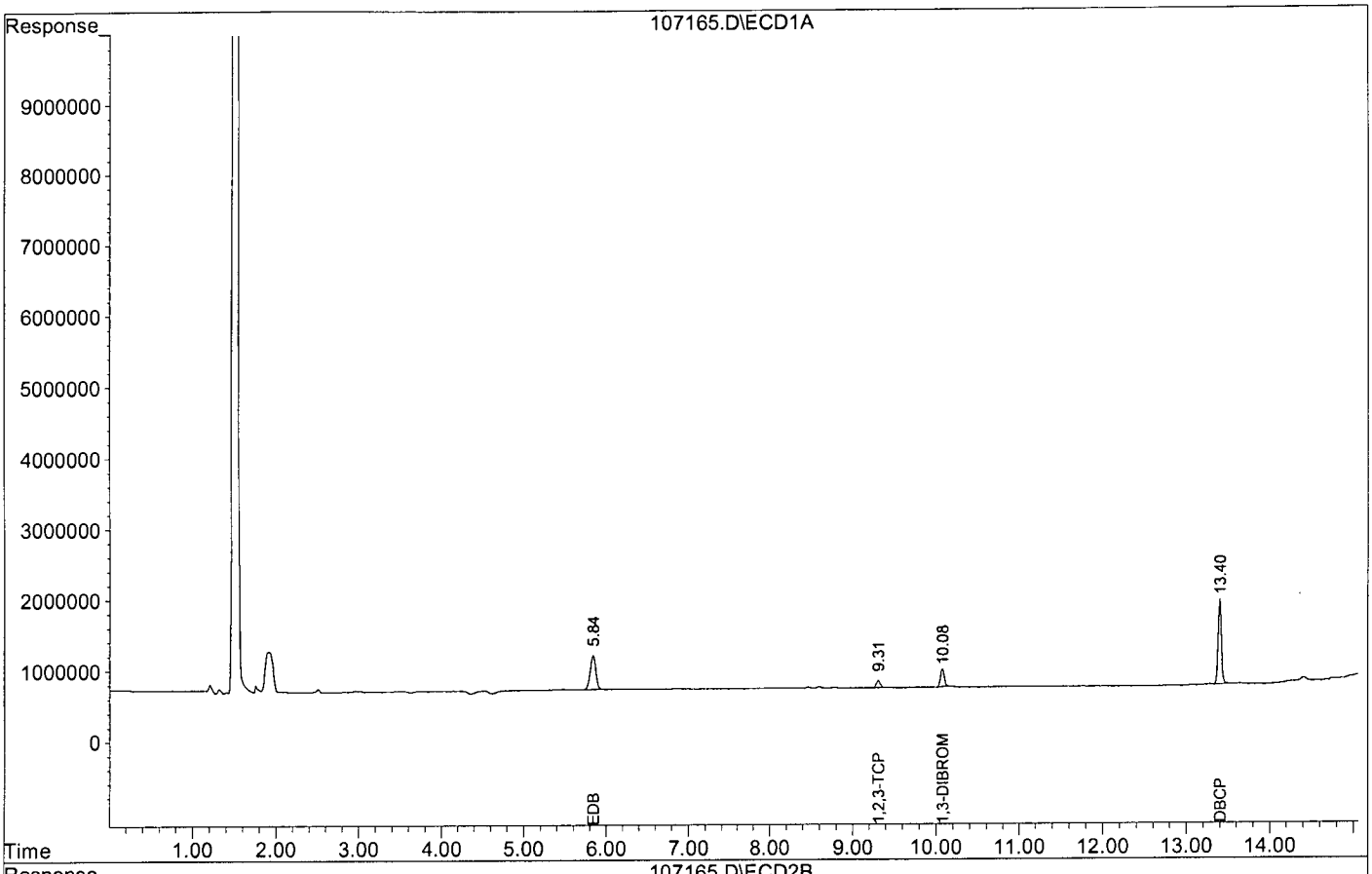
Target Compounds

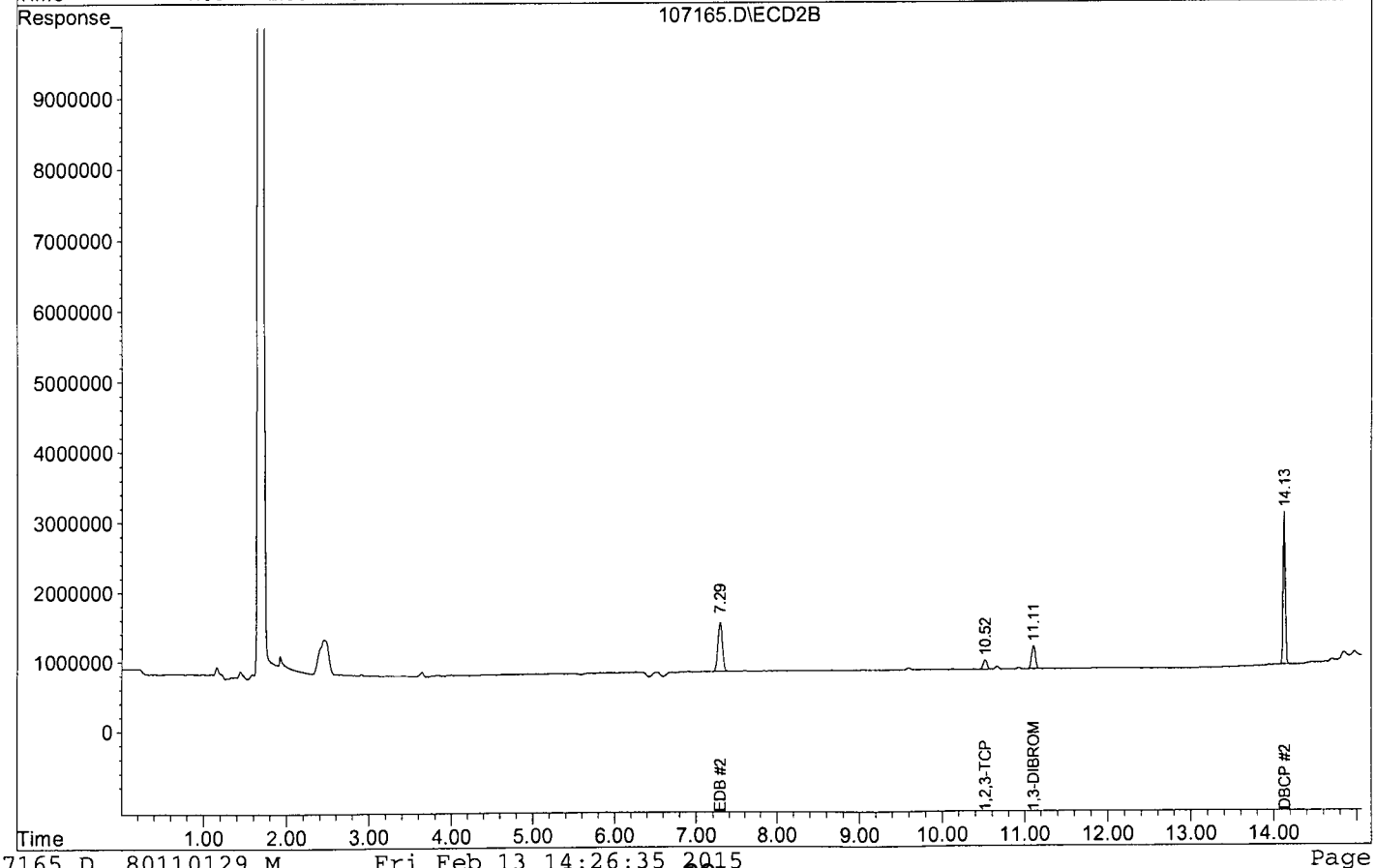
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\150107\107165.D
Acq On : 01-30-15 20:13:17
Sample : AZ10128W20 MS-2 2/34.40G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 65
Operator:
Inst : Herbie
Multiplr: 1.02





Quantitation Report (QT Reviewed)

Signal #1 : G:\HERBIE\DATA\150107\107166.D\ECD1A.CH Vial: 66
Signal #2 : G:\HERBIE\DATA\150107\107166.D\ECD2B.CH
Acq On : 01-30-15 20:33:08 Operator:
Sample : AZ10128W21 MSD-2 2/34.10G Inst : Herbie
Misc : soil Multiplr: 1.03
IntFile Signal #1: rteint.p IntFile Signal #2: rteint2.p
Quant Time: Feb 10 11:17 2015 Quant Results File: 80110129.RES

Quant Method : G:\HERBIE\DATA\150107\80110129.M (RTE Integrator)
Title : 504.1 OR 8011
Last Update : Tue Feb 10 10:54:08 2015
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

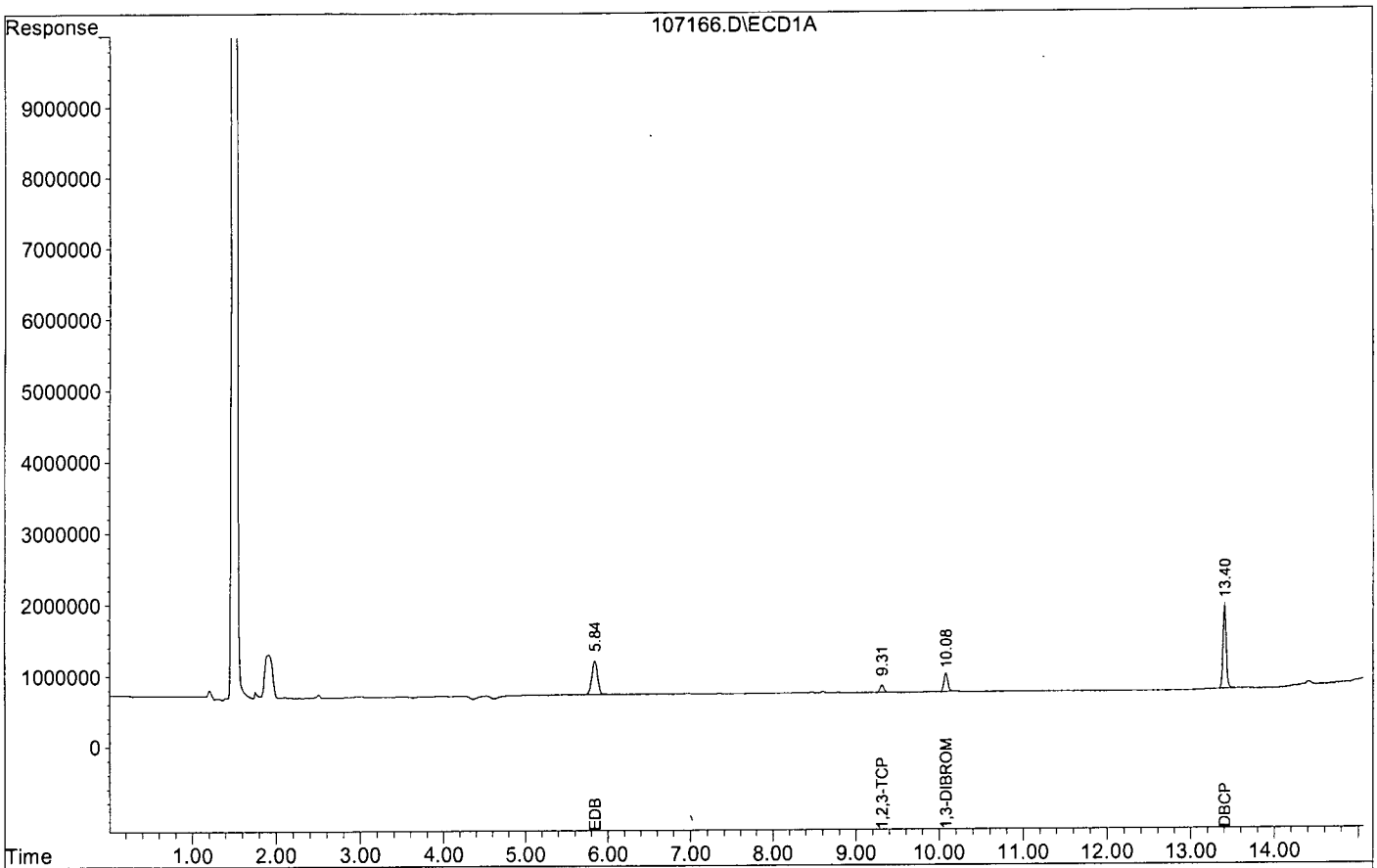
Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
3) S 1,3-DIBROMOPROPA	10.08	11.10	259966	337984	0.362	0.350
Spiked Amount 0.359			Recovery	=	100.77%	97.43%
Target Compounds						
1) TM EDB	5.84	7.29	474405	709472	0.496	0.469
2) TM 1,2,3-TCP	9.31	10.51	102397	139082	0.513	0.518
4) TM DBCP	13.40	14.13	1198357	2139093	0.490	0.470
Target Compounds						

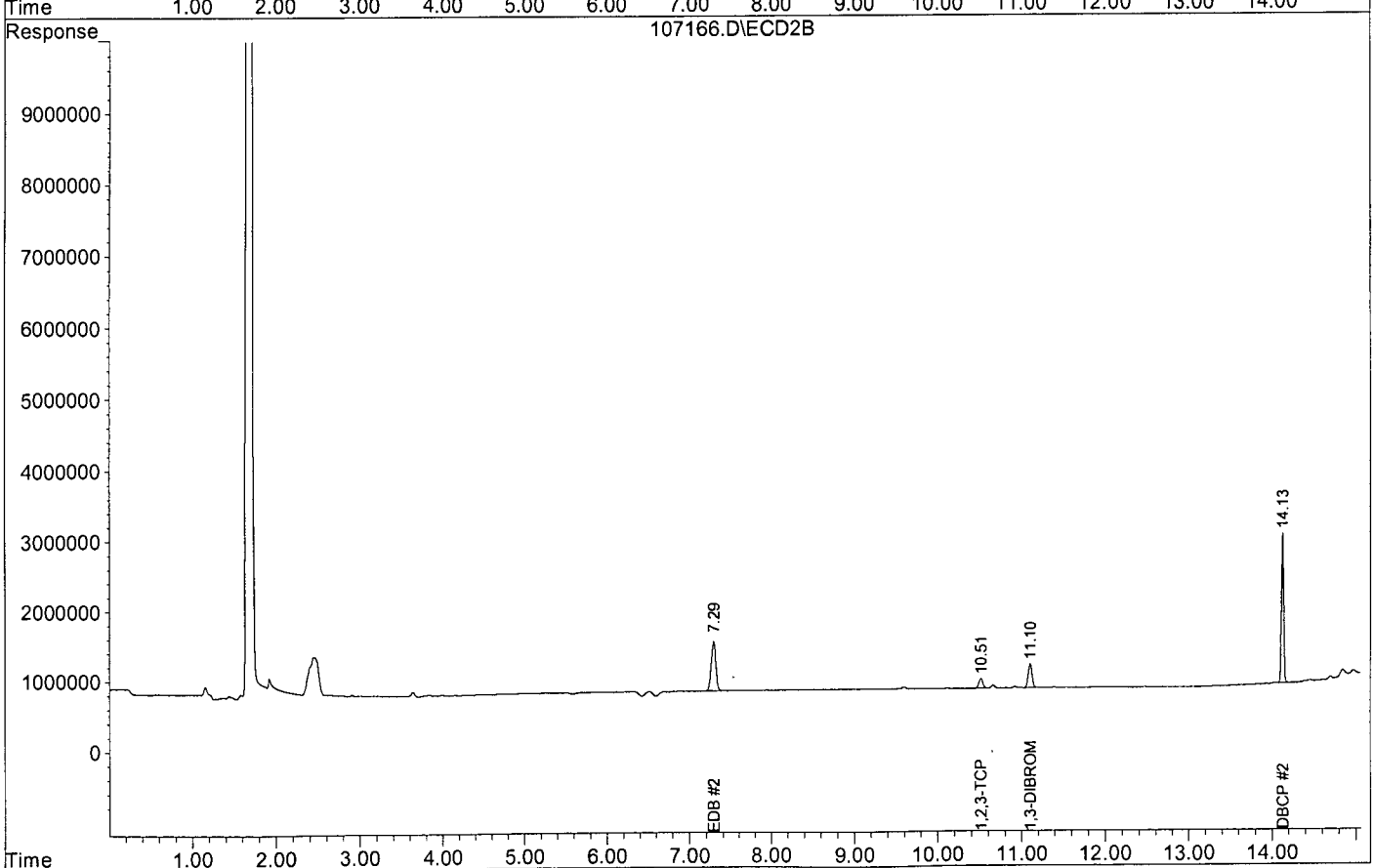
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : G:\HERBIE\DATA\150107\107166.D
Acq On : 01-30-15 20:33:08
Sample : AZ10128W21 MSD-2 2/34.10G
Misc : soil
Quant Method : G:\HERBIE\DATA\150107\80110129.M

Vial: 66
Operator:
Inst : Herbie
Multiplr: 1.03





STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	SOLVENT LOT #	DATE INITIALS
028							

GC/MS INSTRUMENT MAINTENANCE LOG # 42 PAGE #

MOTOR OIL CCV 1000ppm							
STANDARD	CONC.	DATE	ALIQUOT	VOL	CONC.	/LOT#	
MO STD.	2000 µg/mL	MO Std.	2500µL	5mL	1000 µg/ml	MC	LH
	PREP:	10/24/14				54200	12/30/14
	Exp:	10/24/15					ex. 3/30/15

LH 1/5/15 TOX 1B & 1A

Toxaphene	1A-~~0.05ug/mL~~ 100ug/mL	5uL	10mL	0.05ug/mL	Hexane	LH	
	~~1B-0.025ug/mL 100ug/mL~~	~~250uL~~	~~10mL~~	~~0.025ug/mL~~	#051914A	1/5/15	
	TOX Stock		LH 1/6/15			ex. 7/5/15	
	Prep. 9/19/14						
	ex. 8/20/15						

1B - bad prep LH 1/6/15

504/8011 SURROGATE							
Compound	Initial Conc.	Source	Aliquot	Final Vol.	Final Conc.	Solvent	
1,3 DBP	100	1,3 DBP STOCK prep.12/23/14 exp. 12/23/15	35ul	10mL	0.35ug/mL	Methanol 070913A	LH 1/5/15 ex. 2/5/15

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. 12/16/14 exp 12/16/15	500uL	25mL	0.4ug/mL	Methanol 070913A	LH 1/5/15 ex. 2/5/15
	100ug/mL	1,3 DBP STOCK prep.12/23/14 exp. 12/23/15	100uL				

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.01/05/15 exp: 02/05/15	750uL	10mL	0.03ug/mL	Methanol 070913A	LH 1/5/15 ex. 2/5/15

TOX 1B

Toxaphene	1ug/mL	250uL	10mL	0.025ug/mL	Hexane	LH	
	Level 5 TOX				#051914A	1/6/15	
	Prep. 9/19/14					ex. 3/19/	
	ex. 3/19/15						

PCB 2nd Src Stock							
STANDARD	INIT CONC.	SOURCE DATE	ALIQUOT	FINAL VOL.	FINAL CONC.	SOLVENT	
AR1260	200 µg/mL	O2SI	500 µL	10 mL	10 µg/mL	Hexane	LH
AR1016	CAT:	130011-01-SS				Lot#	1/6/15
	LOT:	231044-33776				051914A	ex. 1/6/
	OP:	01/06/15					
	EXP:	01/06/16					

PCB 2nd Src							
STANDARD	INIT CONC.	SOURCE DATE	ALIQUOT	FINAL VOL.	FINAL CONC.	SOLVENT	
AR1260	10 µg/mL	PCB 2nd SRC STK	500 µL	10 mL	0.5 µg/mL	Hexane	LH
AR1016	Prep:	01/06/15				Lot#	1/6/15
	Exp:	01/06/16				051914A	ex: 7/6/

STANDARD	INITIAL CONC	SOURCE DATE	ALIQUOT	FINAL VOLUME	FINAL CONC	VOL EN. LOT #	DATE INITIALS

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		PAC ECO STD			
DIAZINON	5ug/ml	200ug/ml	250ul		
DISULFOTON	5	200		O2SI	10ml
MALATHION	5	200		CAT:130169-01	HEXANE
MOLINATE	5	200		LOT: 219462-33206	LOT#
PHORATE	5	200		Op: 12/11/14	051914A
THIOBENCARB	5	200		Exp: 12/11/15	
TBP	5	200			
DEMETON	5	200			
DICHLORVOS	5	200			
EPTC	5	200			
PARATHION	5	200			
AZINPHOS METHYL	5	200			
CHLORPYRIFOS	5	200			
DIMETHOATE	5	200			
METHIDATHION	5	200			
METHYL PARATHION	5	200			
ATRAZINE	5	200			
CYANAZINE	5	200			
TRIPHENYL PHOSPHATE	5	200			
PROWL	5	200			
TRIFLURALIN	5	200			
SIMAZINE	5	200			
PHOSMET	5	1000ug/ml	50ul		
				ABSOLUTE	
				PART:70798	
				LOT:042214-33798	
				OP: 11/19/14	
				EXP: 11/19/15	

1/15/15 MA
Ex 11/19/15

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	50	70	100
VWR	ETHYL ACETATE		10176249			996	975	950	80	50	30	N/A
					Final VOL.	1000	1000	1000	100	100	100	100

1/19/15
ex. 3/5/15

		507A STANDARD			
ATRAZINE	5 ug/ml	1000ug/ml	50 ul	O2SI	10ml
DIMETHOATE	5	1000	Cat:	132085-01	MTBE
DISULFOTON	5	1000	Lot:	201707-31879	LOT#
PROMETON	5	1000	Open:	01/19/15	50223
THIOBENCARB	5	1000	Exp:	04/19/15	
PROMETRYN	5	1000			
BUTACHLOR	5	1000			
PRONAMIDE	5	1000			
METRABUZIN	5	1000			

1/19/15
ex. 4/19/15

504/8011 HIGH SPIKE						
Compound	Initial Conc.	Source	Aliquot	Final Vol.	Final Conc.	Solvent
EDB TCP DBCP	200ug/mL	Absolute CAT 30096 Lot 010615-34591 open 1/19/15 exp 1/19/16	30uL	25mL	0.24ug/mL	Methanol 070913A

1/19/15
ex. 2/19/15

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. 01/19/15 Exp: 02/19/15	800uL	10mL	0.0192ug/mL	Methanol 070913A

1/19/15
ex. 2/19/15

_MWE012

Organic Extraction Worksheet

Method	EPA Method 8011 DBCP/EDB	Extraction Set	150129A	Extraction Method	MWE012	Units	mL

Spiked ID 1	504.1 Low Spike 1-9-15 exp 2-9-15		Surrogate ID 1	504.1 Surrogate 1-9-15 exp 2-9-15	
Spiked ID 2	504.1 High Spike 1-9-15 exp 2-9-15		Surrogate ID 2	S HA 2/13/15	
Spiked ID 3	504.1 Low Method Standard 1-5-15 2-5-15		Surrogate ID 3		
Spiked ID 4	504.1 High Method Standard 1-5-15 exp 2-5-15		Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	YES	
Spiked ID 7			Ext. Start Time:	01/29/15 11:35	
Spiked ID 8			Ext. End Time:	01/29/15 14:10	
			GC Requires Extract By:	02/09/15 0:00	

pH1			Water Bath Temp Criteria	
pH2				
pH3				

Spiked By: DL **Date** 01/29/15 **Witnessed By:** IC **Date** 01/29/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150129A Blk				0.035	1 equip	34.26g	2	7	01/29/15 11:35	
2	150129A LCS-1		0.035	1	0.035	1 equip	34.44g	2	7	01/29/15 11:35	DOC
3	150129A LCS-2		0.035	1	0.035	1 equip	34.92g	2	7	01/29/15 11:35	DOC
4	150129A LCS-3		0.035	1	0.035	1 equip	34.67g	2	7	01/29/15 11:35	DOC
5	150129A LCS-4		0.035	1	0.035	1 equip	34.53g	2	7	01/29/15 11:35	DOC
6	150129A LCS-5		0.070	2	0.035	1 equip	34.98g	2	7	01/29/15 11:35	
7	AZ10126	AZ10126W07			0.035	1 equip	34.18g	2	7	01/29/15 11:35	75450 Rush 2 Weeks
8	AZ10127	AZ10127W07			0.035	1 equip	33.58g	2	7	01/29/15 11:35	75450 Rush 2 Weeks
9	AZ10128 MS-1	AZ10128W19	0.035	1	0.035	1 equip	33.75g	2	7	01/29/15 11:35	75450 Rush 2 Weeks
10	AZ10128 MSD-1	AZ10128W25	0.035	1	0.035	1 equip	34.10g	2	7	01/29/15 11:35	75450 Rush 2 Weeks
11	AZ10128 MS-2	AZ10128W20	0.070	2	0.035	1 equip	34.40g	2	7	01/29/15 11:35	75450 Rush 2 Weeks
12	AZ10128 MSD-2	AZ10128W21	0.070	2	0.035	1 equip	34.10g	2	7	01/29/15 11:35	75450 Rush 2 Weeks
13	AZ10128	AZ10128W26			0.035	1 equip	33.21g	2	7	01/29/15 11:35	75450 Rush 2 Weeks
14	M STD 1		0.020	3	NA	NA equip	34.39g	2	7	01/29/15 11:35	
15	M STD 2		0.020	4	NA	NA equip	34.96g	2	7	01/29/15 11:35	
16	M STD 3		0.040	4	NA	NA equip	34.89g	2	7	01/29/15 11:35	

lvent and Lot#	
:2 Hexane	DH772
CL	WJ11D
d. Thiosulfate	H15584

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	Cbc
Date	~~900~~ 01/30/15
Time	900
Refrigerator	Hobart

	Technician's Initials
Scanned By	DL
Sample Preparation	DL
Extraction	DL
Concentration	----------

Modified	01/30/15 8:40:40 AM

Reviewed By: Key **Date** 1/30/15

Organic Extraction Worksheet

Method	EPA Method 8011 DBCP/EDB	Extraction Set	150129A	Extraction Method	MWE012	Units	mL

Spiked ID 1	504.1 Low Spike 1-9-15 exp 2-9-15		Surrogate ID 1	504.1 Surrogate 1-9-15 exp 2-9-15	
Spiked ID 2	504.1 High Spike 1-9-15 exp 2-9-15		Surrogate ID 2		
Spiked ID 3	504.1 Low Method Standard 1-5-15 2-5-15		Surrogate ID 3		
Spiked ID 4	504.1 High Method Standard 1-5-15 exp 2-5-15		Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	YES	
Spiked ID 7			Ext. Start Time:	01/29/15 11:35	
Spiked ID 8			Ext. End Time:	01/29/15 14:10	
			GC Requires Extract By:	**02/09/15 0:00**	

pH1			Water Bath Temp Criteria	
pH2				
pH3				

Spiked By: DL **Date** 01/29/15 **Witnessed By:** IC **Date** 01/29/15

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
17	M STD 4		0.060	4	NA	NA equip	34.82g	2	7	01/29/15 11:35	
18	M STD 5		0.080	4	NA	NA equip	35.24g	2	7	01/29/15 11:35	
19	M STD 6		0.100	4	NA	NA equip	35.00g	2	7	01/29/15 11:35	

1/30/15

lvent and Lot#	
:2 Hexane	DH772
CL	WJ11D
d. Thiosulfate	H15584

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	CJC
Date	01/30/15
Time	900
Refrigerator	Hobart

	Technician's Initials
Scanned By	DL
Sample Preparation	DL
Extraction	DL
Concentration	----------

Modified	01/30/15 8:40:40 AM

Reviewed By: [illegible] **Date** 1/30/15

Injection Log

Directory: G:\HERBIE\DATA\150107\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	48	107148.D	1	Hexane		01-30-15 14:31:48
2	49	107149.D	1.01774	8011-1 1/29/15		01-30-15 14:52:12
3	50	107150.D	1.00114	8011-2 1/29/15		01-30-15 15:12:24
4	51	107151.D	1.00315	8011-3 1/29/15		01-30-15 15:32:35
5	52	107152.D	1.00517	8011-4 1/29/15		01-30-15 15:52:52
6	53	107153.D	1.0222	8011-5 1/29/15		01-30-15 16:13:01
7	54	107154.D	1	8011-6 1/29/15		01-30-15 16:33:12
8	55	107155.D	1.0216	150129A Blk 2/34.26G	soil	01-30-15 16:53:29
9	56	107156.D	1.01626	150129A LCS-1 2/34.44G	soil	01-30-15 17:13:36
10	57	107157.D	1.00229	150129A LCS-2 2/34.92G	soil	01-30-15 17:33:41
11	58	107158.D	1.00952	150129A LCS-3 2/34.67G	soil	01-30-15 17:53:48
12	59	107159.D	1.01361	150129A LCS-4 2/34.53G	soil	01-30-15 18:13:47
13	60	107160.D	1.00057	150129A LCS-5 2/34.98G	soil	01-30-15 18:33:45
14	61	107161.D	1.02399	AZ10126W07 2/34.18G	soil	01-30-15 18:53:44
15	62	107162.D	1.01215	AZ10127W07 2/33.58G	soil	01-30-15 19:13:39
16	63	107163.D	1.00719	AZ10128W19 MS-1 2/33.75G	soil	01-30-15 19:33:34
17	64	107164.D	1.02639	AZ10128W25 MSD-1 2/34.10G	soil	01-30-15 19:53:26
18	65	107165.D	1.01744	AZ10128W20 MS-2 2/34.40G	soil	01-30-15 20:13:17
19	66	107166.D	1.02639	AZ10128W21 MSD-2 2/34.10G	soil	01-30-15 20:33:08
20	67	107167.D	1.02309	AZ10128W26 2/33.21G	soil	01-30-15 20:52:58
21	68	107168.D	1	Hexane	soil	01-30-15 21:12:54
22	69	107169.D	1	8011-3 1/29/15	soil	01-30-15 21:32:43

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: **150127W-10128 - 193850**
Batch ID: #86CRE-150127AL

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	01/27/15	01/27/15
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/27/15	01/27/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/27/15	01/27/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/27/15	01/27/15
BLANK	1,2,4-TRICHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
BLANK	1,2-DIBROMO-3-CHLOROPROPA	1.00 U	2.0	1.00	0.76	ug/L	01/27/15	01/27/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
BLANK	1,2-DICHLOROBENZENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
BLANK	1,2-DICHLOROETHANE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
BLANK	1,3-DICHLOROBENZENE	0.30 U	1.0	0.30	0.11	ug/L	01/27/15	01/27/15
BLANK	1,3-DICHLOROPROPENE (TOTA	0.30 U	1.0	0.30	0.18	ug/L	01/27/15	01/27/15
BLANK	1,4-DICHLOROBENZENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/27/15	01/27/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/27/15	01/27/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/27/15	01/27/15
BLANK	BENZENE	0.200 U	0.20	0.200	0.060	ug/L	01/27/15	01/27/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/27/15	01/27/15
BLANK	CARBON TETRACHLORIDE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
BLANK	CHLOROFORM	0.20 U	0.2	0.20	0.06	ug/L	01/27/15	01/27/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.31	ug/L	01/27/15	01/27/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/27/15	01/27/15
BLANK	HEXACHLOROBUTADIENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	METHYL TERT-BUTYL ETHER	0.52 U	1.0	0.52	0.26	ug/L	01/27/15	01/27/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/27/15	01/27/15

Quant Method: LCREDW.M
Run #: 0127L24
Instrument: Loki
Sequence: 150127
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/28/15 12:04:17 PM

Method Blank
EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150127W-10128 - 193850**
Batch ID: #86CRE-150127AL

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	01/27/15	01/27/15
BLANK	TETRACHLOROETHENE	0.30 U	0.3	0.30	0.08	ug/L	01/27/15	01/27/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
BLANK	VINYL CHLORIDE	0.10 U	0.1	0.10	0.03	ug/L	01/27/15	01/27/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	SURROGATE: 1,2-DICHLOROET	98.9	70-120			%	01/27/15	01/27/15
BLANK	SURROGATE: 4-BROMOFLUOR	99.0	75-120			%	01/27/15	01/27/15
BLANK	SURROGATE: DIBROMOFLUOR	98.4	85-115			%	01/27/15	01/27/15
BLANK	SURROGATE: TOLUENE-D8 (S)	98.4	85-120			%	01/27/15	01/27/15

Quant Method: LCREDW.M
Run #: 0127L24
Instrument: Loki
Sequence: 150127
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/28/15 12:04:17 PM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 75450

Case No: 75450 Date Analyzed: 01/27/15

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
150127AL-LCS	Lab Control Spike	70-120	98.9		75-120	106	
150127AL-BLK	Blank	70-120	98.9		75-120	99.0	
AZ10129	Trip Blank 1/23/15	70-120	95.8		75-120	98.3	
AZ10126	RHMW07-GW-02	70-120	98.8		75-120	99.3	
AZ10127	RHMW07-GW-02FD	70-120	97.9		75-120	98.8	
AZ10128	RHMW06-GW-02	70-120	101		75-120	98.7	
AZ10128-MS	Matrix Spike	70-120	97.0		75-120	106	
AZ10128-MSD	Matrix SpikeD	70-120	94.2		75-120	102	

Comments: Batch: #86CRE-150127AL

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc.
Case No: 75450
Matrix: WATER

SDG No: 75450
Date Analyzed: 01/27/15
Instrument: Loki

APPL ID.	Client Sample No.	SURROGATE: DIBROMOFLUOROMETHANE (S)			SURROGATE: TOLUENE-D8 (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150127AL-LCS	Lab Control Spike	85-115	98.7		85-120	97.7	
150127AL-BLK	Blank	85-115	98.4		85-120	98.4	
AZ10129	Trip Blank 1/23/15	85-115	96.6		85-120	97.5	
AZ10126	RHMW07-GW-02	85-115	100.0		85-120	98.3	
AZ10127	RHMW07-GW-02FD	85-115	97.8		85-120	97.9	
AZ10128	RHMW06-GW-02	85-115	104		85-120	98.4	
AZ10128-MS	Matrix Spike	85-115	100		85-120	99.4	
AZ10128-MSD	Matrix SpikeD	85-115	96.9		85-120	97.7	

Comments: Batch: #86CRE-150127AL

Laboratory Control Spike Recovery
EPA 8260C WATER

APPL ID: **150127W-10128 LCS - 193850**
Batch ID: #86CRE-150127AL

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	9.66	96.6	80-130
1,1,1-TRICHLOROETHANE	10.00	9.45	94.5	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	9.67	96.7	65-130
1,1,2-TRICHLOROETHANE	10.00	9.90	99.0	75-125
1,1-DICHLOROETHANE	10.00	9.68	96.8	70-135
1,1-DICHLOROETHENE	10.00	9.51	95.1	70-130
1,2,3-TRICHLOROPROPANE	10.00	10.3	103	75-125
1,2,4-TRICHLOROBENZENE	10.00	9.62	96.2	65-135
1,2-DIBROMO-3-CHLOROPROPANE	10.00	10.4	104	50-130
1,2-DIBROMOETHANE	10.00	9.81	98.1	80-120
1,2-DICHLOROBENZENE	10.00	9.39	93.9	70-120
1,2-DICHLOROETHANE	10.00	9.76	97.6	70-130
1,2-DICHLOROPROPANE	10.00	9.75	97.5	75-125
1,3-DICHLOROBENZENE	10.00	9.50	95.0	75-125
1,3-DICHLOROPROPENE (TOTAL)	20.0	19.9	99.5	55-140
1,4-DICHLOROBENZENE	10.00	9.28	92.8	75-125
2-BUTANONE	10.00	10.6	106	30-150
4-METHYL-2-PENTANONE	10.00	9.81	98.1	60-135
ACETONE	10.00	10.7	107	40-140
BENZENE	10.00	9.29	92.9	80-120
BROMODICHLOROMETHANE	10.00	9.80	98.0	75-120
BROMOFORM	10.00	10.0	100	70-130
BROMOMETHANE	10.00	9.34	93.4	30-145
CARBON TETRACHLORIDE	10.00	9.87	98.7	65-140
CHLOROBENZENE	10.00	9.53	95.3	80-120
CHLOROETHANE	10.00	9.79	97.9	60-135
CHLOROFORM	10.00	9.14	91.4	65-135
CHLOROMETHANE	10.00	8.99	89.9	40-125
CIS-1,2-DICHLOROETHENE	10.00	9.51	95.1	70-125
DIBROMOCHLOROMETHANE	10.00	10.3	103	60-135
ETHYLBENZENE	10.00	9.62	96.2	75-125

Primary	SPK
Quant Method :	LCREDW.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	Loki
Run :	0127L19
Initials :	SV

Comments:

Printed: 01/28/15 12:04:28 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260C WATER

APPL ID: **150127W-10128 LCS - 193850**
Batch ID: #86CRE-150127AL

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	9.41	94.1	50-140
METHYL TERT-BUTYL ETHER	10.00	9.99	99.9	65-125
METHYLENE CHLORIDE	10.00	9.52	95.2	55-140
STYRENE	10.00	10.1	101	65-135
TETRACHLOROETHENE	10.00	9.73	97.3	45-150
TOLUENE	10.00	9.44	94.4	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.46	94.6	60-140
TRICHLOROETHENE	10.00	9.23	92.3	70-125
VINYL CHLORIDE	10.00	9.21	92.1	50-145
XYLENES (TOTAL)	30.0	28.6	95.3	75-130
SURROGATE: 1,2-DICHLOROETHANE-	21.1	20.9	98.9	70-120
SURROGATE: 4-BROMOFLUOROBENZ	23.7	25.0	106	75-120
SURROGATE: DIBROMOFLUOROMETH	22.4	22.1	98.7	85-115
SURROGATE: TOLUENE-D8 (S)	23.5	23.0	97.7	85-120

Comments:

Primary	SPK
Quant Method :	LCREDW.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	Loki
Run :	0127L19
Initials :	SV

Printed: 01/28/15 12:04:28 PM
APPL Standard LCS

Matrix Spike Recoveries

EPA 8260C WATER

APPL ID: **150128W-10128 MS - 193850**
Batch ID: #86CRE-150127AL
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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	8.21	7.94	82.1	79.4 #	80-130	3.3	30
1,1,1-TRICHLOROETHANE	10.00	ND	8.07	7.77	80.7	77.7	65-130	3.8	30
1,1,2,2-TETRACHLOROETHANE	10.00	ND	7.43	7.29	74.3	72.9	65-130	1.9	30
1,1,2-TRICHLOROETHANE	10.00	ND	7.57	7.54	75.7	75.4	75-125	0.40	30
1,1-DICHLOROETHANE	10.00	ND	7.95	7.79	79.5	77.9	70-135	2.0	30
1,1-DICHLOROETHENE	10.00	ND	8.24	7.84	82.4	78.4	70-130	5.0	30
1,2,3-TRICHLOROPROPANE	10.00	ND	7.35	7.28	73.5 #	72.8 #	75-125	0.96	30
1,2,4-TRICHLOROBENZENE	10.00	ND	7.38	7.40	73.8	74.0	65-135	0.27	30
1,2-DIBROMO-3-CHLOROPROPANE	10.00	ND	7.01	7.12	70.1	71.2	50-130	1.6	30
1,2-DIBROMOETHANE	10.00	ND	7.46	7.55	74.6 #	75.5 #	80-120	1.2	30
1,2-DICHLOROBENZENE	10.00	ND	7.56	7.56	75.6	75.6	70-120	0.0	30
1,2-DICHLOROETHANE	10.00	ND	7.79	7.36	77.9	73.6	70-130	5.7	30
1,2-DICHLOROPROPANE	10.00	ND	8.09	7.68	80.9	76.8	75-125	5.2	30
1,3-DICHLOROBENZENE	10.00	ND	7.86	7.71	78.6	77.1	75-125	1.9	30
1,3-DICHLOROPROPENE (TOTAL)	20.0	ND	15.6	14.9	78.0	74.5	55-140	4.6	30
1,4-DICHLOROBENZENE	10.00	ND	7.73	7.72	77.3	77.2	75-125	0.13	30
2-BUTANONE	10.00	ND	9.34	9.30	93.4	93.0	30-150	0.43	30
4-METHYL-2-PENTANONE	10.00	ND	8.32	8.48	83.2	84.8	60-135	1.9	30
ACETONE	10.00	ND	8.51	8.27	85.1	82.7	40-140	2.9	30
BENZENE	10.00	ND	7.82	7.48	78.2 #	74.8 #	80-120	4.4	30
BROMODICHLOROMETHANE	10.00	ND	7.81	7.63	78.1	76.3	75-120	2.3	30
BROMOFORM	10.00	ND	7.52	7.49	75.2	74.9	70-130	0.40	30
BROMOMETHANE	10.00	ND	9.00	8.47	90.0	84.7	30-145	6.1	30
CARBON TETRACHLORIDE	10.00	ND	8.64	8.38	86.4	83.8	65-140	3.1	30
CHLOROBENZENE	10.00	ND	8.10	7.79	81.0	77.9 #	80-120	3.9	30
CHLOROETHANE	10.00	ND	10.1	9.54	101	95.4	60-135	5.7	30
CHLOROFORM	10.00	ND	8.96	8.54	89.6	85.4	65-135	4.8	30
CHLOROMETHANE	10.00	ND	9.16	8.64	91.6	86.4	40-125	5.8	30
CIS-1,2-DICHLOROETHENE	10.00	ND	7.92	7.62	79.2	76.2	70-125	3.9	30
DIBROMOCHLOROMETHANE	10.00	ND	8.24	7.95	82.4	79.5	60-135	3.6	30

= Recovery is outside QC limits.

Primary	SPK	DUP
Quant Method :	LCREDW.M	LCREDW.M
Extraction Date :	01/28/15	01/28/15
Analysis Date :	01/28/15	01/28/15
Instrument :	Loki	Loki
Run :	0127L38	0127L39
Initials :	SV	

Comments:

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APPL MSD SCII

Matrix Spike Recoveries

EPA 8260C WATER

APPL ID: **150128W-10128 MS - 193850**
Batch ID: #86CRE-150127AL
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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
ETHYLBENZENE	10.00	ND	8.18	7.87	81.8	78.7	75-125	3.9	30
HEXACHLOROBUTADIENE	10.00	ND	7.74	7.53	77.4	75.3	50-140	2.8	30
METHYL TERT-BUTYL ETHER	10.00	ND	7.63	7.48	76.3	74.8	65-125	2.0	30
METHYLENE CHLORIDE	10.00	ND	8.37	7.81	83.7	78.1	55-140	6.9	30
STYRENE	10.00	ND	8.42	8.22	84.2	82.2	65-135	2.4	30
TETRACHLOROETHENE	10.00	ND	8.22	8.01	82.2	80.1	45-150	2.6	30
TOLUENE	10.00	ND	8.04	7.83	80.4	78.3	75-120	2.6	30
TRANS-1,2-DICHLOROETHENE	10.00	ND	8.06	7.57	80.6	75.7	60-140	6.3	30
TRICHLOROETHENE	10.00	ND	7.54	7.13	75.4	71.3	70-125	5.6	30
VINYL CHLORIDE	10.00	ND	9.92	9.50	99.2	95.0	50-145	4.3	30
XYLENES (TOTAL)	30.0	ND	24.6	23.8	82.0	79.3	75-130	3.3	30
SURROGATE: 1,2-DICHLOROETHANE-D	21.1	NA	20.5	19.9	97.0	94.2	70-120		
SURROGATE: 4-BROMOFLUOROBENZ	23.7	NA	25.0	24.2	106	102	75-120		
SURROGATE: DIBROMOFLUOROMETH	22.4	NA	22.5	21.7	100	96.9	85-115		
SURROGATE: TOLUENE-D8 (S)	23.5	NA	23.4	23.0	99.4	97.7	85-120		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	LCREDW.M	LCREDW.M
Extraction Date :	01/28/15	01/28/15
Analysis Date :	01/28/15	01/28/15
Instrument :	Loki	Loki
Run :	0127L38	0127L39
Initials :	SV	

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APPL MSD SCII

EPA 8260C^LL

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75450
Matrix: WATER
Blank ID: 150127AL-BLK

SDG No: 75450
Date Analyzed: 01/27/15
Instrument: Loki
Time Analyzed: 1934

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150127AL-LCS	Lab Control Spike	0127L19	01/27/15 1713
150127AL-BLK	Blank	0127L24	01/27/15 1934
AZ10129	Trip Blank 1/23/15	0127L26	01/27/15 2030
AZ10126	RHMW07-GW-02	0127L33	01/27/15 2346
AZ10127	RHMW07-GW-02FD	0127L34	01/28/15 0014
AZ10128	RHMW06-GW-02	0127L35	01/28/15 0042
150127AL-MS	Matrix Spike	0127L38	01/28/15 0206
150127AL-MSD	Matrix SpikeD	0127L39	01/28/15 0234

Comments: Batch: #86CRE-150127AL

Printed: 01/28/15 12:04:39 PM
Form 4, Blank Summary

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75450
Matrix: Water
ID: 25ug/mL BFB Std 01-09-15

SDG No: 75450
Date Analyzed: 01/27/15
Instrument: Loki
Time Analyzed: 8:52

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		0.1ug /L Vol Std 01-	0127L05.D	01/27/15 10:39
2		0.5ug /L Vol Std 01-	0127L07.D	01/27/15 11:35
3		1.0ug /L Vol Std 01-	0127L08.D	01/27/15 12:03
4		5.0ug /L Vol Std 01-	0127L09.D	01/27/15 12:32
5		10ug /L Vol Std 01-2	0127L10.D	01/27/15 13:00
6		20ug /L Vol Std 01-2	0127L11.D	01/27/15 13:28
7		40ug /L Vol Std 01-2	0127L12.D	01/27/15 13:56
8		100ug /L Vol Std 01-	0127L13.D	01/27/15 14:24
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.3
75	30 - 60% of mass 95	45.2
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.9
173	0 - 2.09% of mass 174	0.0
174	50 - 100% of mass 95	99.1
175	5 - 9% of mass 174	7.3
176	94.9 - 101% of mass 174	96.5
177	5 - 9% of mass 176	6.8

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No: 75450
Matrix: Water
ID: 25ug/L BFB Std 01-26-15

SDG No: 75450
Date Analyzed: 01/27/15
Instrument: Loki
Time Analyzed: 15:49

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		10ug /L Std 1-27-15(	0127L17.D	01/27/15 16:17
2		10ug /L Std 1-27-15(	0127L18.D	01/27/15 16:45
3	Lab Control Spike	150127A LCS-1WL	0127L19.D	01/27/15 17:13
4	Blank	150127A BLK-1WL	0127L24.D	01/27/15 19:34
5	Trip Blank 1/23/15	AZ10129W01	0127L26.D	01/27/15 20:30
6	RHMW07-GW-02	AZ10126W01	0127L33.D	01/27/15 23:46
7	RHMW07-GW-02FD	AZ10127W01	0127L34.D	01/28/15 0:14
8	RHMW06-GW-02	AZ10128W01	0127L35.D	01/28/15 0:42
9		AZ10128W456 MS-1WL	0127L38.D	01/28/15 2:06
10		AZ10128W456 MSD-1WL	0127L39.D	01/28/15 2:34
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
50	15 - 40% of mass 95	15.7
75	30 - 60% of mass 95	46.7
95	100 - 100% of mass 95	100.0
96	5 - 9% of mass 95	6.6
173	0 - 2.09% of mass 174	0.9
174	50 - 100% of mass 95	99.1
175	5 - 9% of mass 174	7.3
176	94.9 - 101% of mass 174	97.7
177	5 - 9% of mass 176	6.4

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc. Contract: Review

Lab Code: SDG No.: 75450

Lab File ID (Standard): 0127L10.D Date Analyzed: 01/27/15

Instrument ID: Loki Time Analyzed: 13:00

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	833216	5.85	809472	9.09	487360	11.41
	UPPER LIMIT	1666432	6.35	1618944	9.59	974720	11.91
	LOWER LIMIT	416608	5.35	404736	8.59	243680	10.91
	SAMPLE NO.						
01	0.1ug /L Vol Std 01-27-1	778240	5.85	775552	9.09	424064	11.42
02	0.5ug /L Vol Std 01-27-1	781056	5.85	796160	9.09	419968	11.41
03	1.0ug /L Vol Std 01-27-1	795712	5.85	786432	9.09	420352	11.41
04	5.0ug /L Vol Std 01-27-1	816128	5.85	813632	9.09	462912	11.41
05	10ug /L Vol Std 01-27-15	833216	5.85	809472	9.09	487360	11.41
06	20ug /L Vol Std 01-27-15	848064	5.85	824832	9.09	493952	11.41
07	40ug /L Vol Std 01-27-15	848768	5.85	849024	9.09	518720	11.41
08	100ug /L Vol Std 01-27-	848256	5.85	847104	9.09	546496	11.41
09	10ug /L Std 1-27-15(CC	862848	5.85	841088	9.09	499392	11.41
10	10ug /L Std 1-27-15(SS)	841216	5.85	835840	9.09	483776	11.41
11	150127A LCS-1WL	854080	5.85	847680	9.09	504768	11.41
12	150127A BLK-1WL	816704	5.85	803072	9.09	431936	11.42
13	AZ10129W01	800576	5.85	788608	9.09	414336	11.41
14	AZ10126W01	752000	5.85	749568	9.09	398208	11.41
15	AZ10127W01	766912	5.85	756928	9.09	403392	11.41
16	AZ10128W01	743616	5.85	755840	9.09	400768	11.41
17	AZ10128W456 MS-1WL	790336	5.85	787328	9.09	468800	11.41
18	AZ10128W456 MSD-1W	804992	5.85	794368	9.09	464128	11.41
19							
20							
21							

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 Phase 1b
Sample ID: RHMW07-GW-02
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10126
QCG: #86CRE-150127AL-193850

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	01/27/15	01/27/15
EPA 8260C	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
EPA 8260C	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/27/15	01/27/15
EPA 8260C	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
EPA 8260C	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/27/15	01/27/15
EPA 8260C	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/27/15	01/27/15
EPA 8260C	1,2,4-TRICHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DIBROMO-3-CHLOROPROPANE	1.00 U	2.0	1.00	0.76	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DICHLOROBENZENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DICHLOROETHANE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
EPA 8260C	1,3-DICHLOROBENZENE	0.30 U	1.0	0.30	0.11	ug/L	01/27/15	01/27/15
EPA 8260C	1,3-DICHLOROPROPENE (TOTAL)	0.30 U	1.0	0.30	0.18	ug/L	01/27/15	01/27/15
EPA 8260C	1,4-DICHLOROBENZENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/27/15	01/27/15
EPA 8260C	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/27/15	01/27/15
EPA 8260C	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/27/15	01/27/15
EPA 8260C	BENZENE	0.200 U	0.20	0.200	0.060	ug/L	01/27/15	01/27/15
EPA 8260C	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
EPA 8260C	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
EPA 8260C	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/27/15	01/27/15
EPA 8260C	CARBON TETRACHLORIDE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROFORM	0.20 U	0.2	0.20	0.06	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROMETHANE	0.50 U	1.0	0.50	0.31	ug/L	01/27/15	01/27/15
EPA 8260C	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
EPA 8260C	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/27/15	01/27/15
EPA 8260C	HEXACHLOROBUTADIENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	METHYL TERT-BUTYL ETHER	0.52 U	1.0	0.52	0.26	ug/L	01/27/15	01/27/15
EPA 8260C	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/27/15	01/27/15
EPA 8260C	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/27/15	01/27/15

Quant Method: LCREDW.M
Run #: 0127L33
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

Printed: 01/28/15 12:04:43 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 Phase 1b
Sample ID: RHMW07-GW-02
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10126
QCG: #86CRE-150127AL-193850

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	01/27/15	01/27/15
EPA 8260C	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
EPA 8260C	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
EPA 8260C	VINYL CHLORIDE	0.10 U	0.1	0.10	0.03	ug/L	01/27/15	01/27/15
EPA 8260C	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	SURROGATE: 1,2-DICHLOROETHANE	98.8	70-120			%	01/27/15	01/27/15
EPA 8260C	SURROGATE: 4-BROMOFLUOROBEN	99.3	75-120			%	01/27/15	01/27/15
EPA 8260C	SURROGATE: DIBROMOFLUOROMET	100.0	85-115			%	01/27/15	01/27/15
EPA 8260C	SURROGATE: TOLUENE-D8 (S)	98.3	85-120			%	01/27/15	01/27/15

Quant Method: LCREDW.M
Run #: 0127L33
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

Printed: 01/28/15 12:04:43 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150127\0127L33.D
Acq On : 27 Jan 15 23:46
Sample : AZ10126W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 32
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:39 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	752000	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	749568	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	398208	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	392693	22.39507 ppb	0.00
Spiked Amount 22.395			Recovery	= 99.999%	
38) 1,2-DCA-D4(S)	5.42	65	355864	20.87330 ppb	0.00
Spiked Amount 21.127			Recovery	= 98.800%	
58) Toluene-D8(S)	7.62	98	1383980	23.14099 ppb	0.00
Spiked Amount 23.536			Recovery	= 98.323%	
66) 4-Bromofluorobenzene(S)	10.27	95	504171	23.49460 ppb	0.00
Spiked Amount 23.661			Recovery	= 99.301%	

Target Compounds Qvalue

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

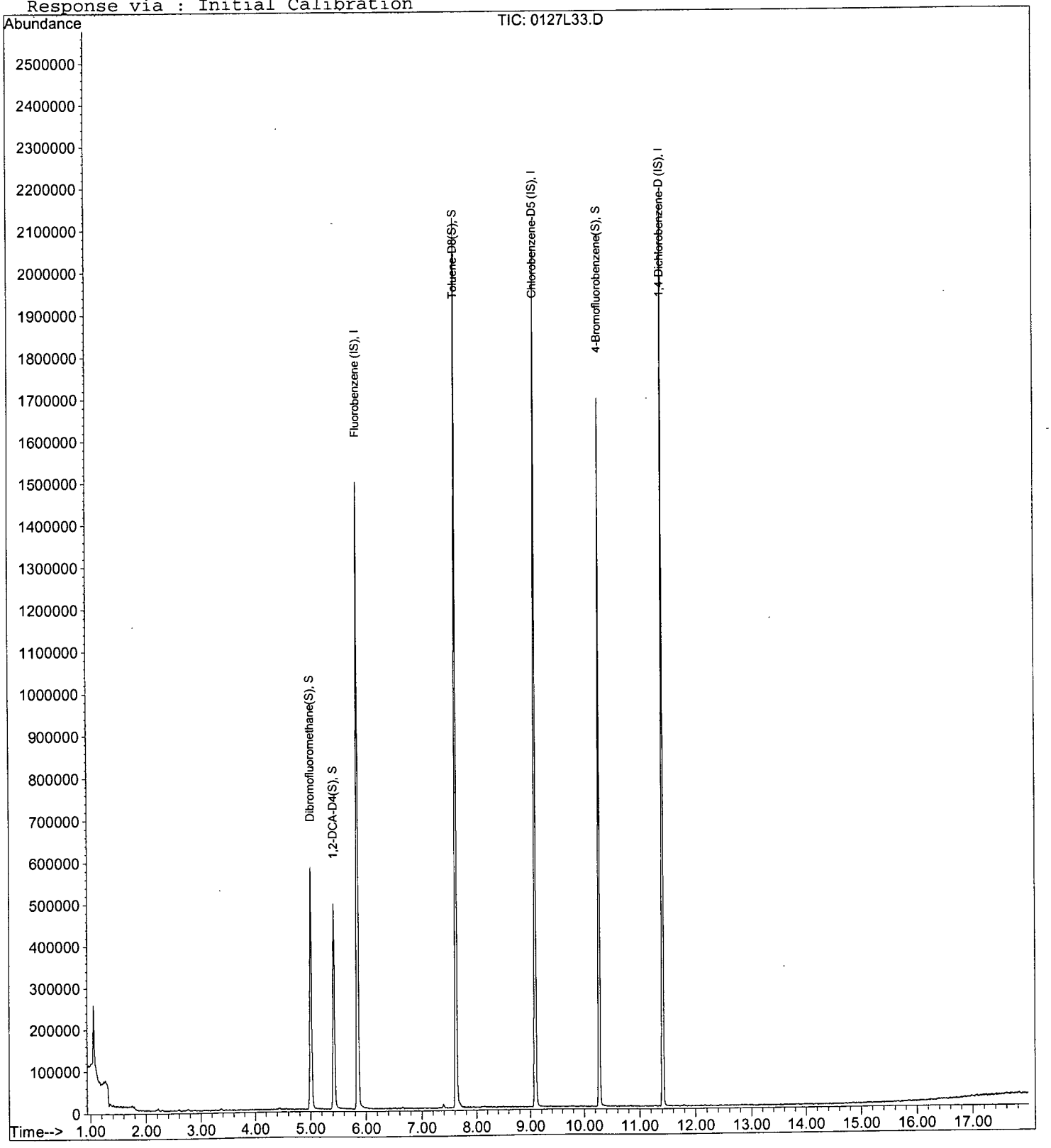
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L33.D
Acq On : 27 Jan 15 23:46
Sample : AZ10126W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 32
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:39 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
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 Phase 1b
Sample ID: RHMW07-GW-02FD
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10127
QCG: #86CRE-150127AL-193850

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	01/28/15	01/28/15
EPA 8260C	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/28/15	01/28/15
EPA 8260C	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/28/15	01/28/15
EPA 8260C	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/28/15	01/28/15
EPA 8260C	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/28/15	01/28/15
EPA 8260C	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/28/15	01/28/15
EPA 8260C	1,2,4-TRICHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DIBROMO-3-CHLOROPROPANE	1.00 U	2.0	1.00	0.76	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DICHLOROBENZENE	0.30 U	1.0	0.30	0.17	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DICHLOROETHANE	0.100 U	0.10	0.100	0.030	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/28/15	01/28/15
EPA 8260C	1,3-DICHLOROBENZENE	0.30 U	1.0	0.30	0.11	ug/L	01/28/15	01/28/15
EPA 8260C	1,3-DICHLOROPROPENE (TOTAL)	0.30 U	1.0	0.30	0.18	ug/L	01/28/15	01/28/15
EPA 8260C	1,4-DICHLOROBENZENE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/28/15	01/28/15
EPA 8260C	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/28/15	01/28/15
EPA 8260C	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/28/15	01/28/15
EPA 8260C	BENZENE	0.200 U	0.20	0.200	0.060	ug/L	01/28/15	01/28/15
EPA 8260C	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/28/15	01/28/15
EPA 8260C	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/28/15	01/28/15
EPA 8260C	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/28/15	01/28/15
EPA 8260C	CARBON TETRACHLORIDE	0.100 U	0.10	0.100	0.030	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROFORM	0.20 U	0.2	0.20	0.06	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROMETHANE	0.50 U	1.0	0.50	0.31	ug/L	01/28/15	01/28/15
EPA 8260C	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/28/15	01/28/15
EPA 8260C	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/28/15	01/28/15
EPA 8260C	HEXACHLOROBUTADIENE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	METHYL TERT-BUTYL ETHER	0.52 U	1.0	0.52	0.26	ug/L	01/28/15	01/28/15
EPA 8260C	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/28/15	01/28/15
EPA 8260C	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/28/15	01/28/15

Quant Method: LCREDW.M
Run #: 0127L34
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

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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 Phase 1b
Sample ID: RHMW07-GW-02FD
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10127
QCG: #86CRE-150127AL-193850

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	01/28/15	01/28/15
EPA 8260C	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/28/15	01/28/15
EPA 8260C	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/28/15	01/28/15
EPA 8260C	VINYL CHLORIDE	0.10 U	0.1	0.10	0.03	ug/L	01/28/15	01/28/15
EPA 8260C	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	SURROGATE: 1,2-DICHLOROETHANE	97.9	70-120			%	01/28/15	01/28/15
EPA 8260C	SURROGATE: 4-BROMOFLUOROBEN	98.8	75-120			%	01/28/15	01/28/15
EPA 8260C	SURROGATE: DIBROMOFLUOROMET	97.8	85-115			%	01/28/15	01/28/15
EPA 8260C	SURROGATE: TOLUENE-D8 (S)	97.9	85-120			%	01/28/15	01/28/15

Quant Method: LCREDW.M
Run #: 0127L34
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

Printed: 01/28/15 12:04:43 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150127\0127L34.D
Acq On : 28 Jan 15 00:14
Sample : AZ10127W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 33
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	766912	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	756928	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	403392	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	391788	21.90901 ppb	0.00
Spiked Amount 22.395			Recovery	= 97.829%	
38) 1,2-DCA-D4(S)	5.42	65	359610	20.68288 ppb	0.00
Spiked Amount 21.127			Recovery	= 97.901%	
58) Toluene-D8(S)	7.62	98	1392142	23.05113 ppb	0.00
Spiked Amount 23.536			Recovery	= 97.940%	
66) 4-Bromofluorobenzene(S)	10.27	95	506534	23.37520 ppb	0.00
Spiked Amount 23.661			Recovery	= 98.793%	

Target Compounds Qvalue

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

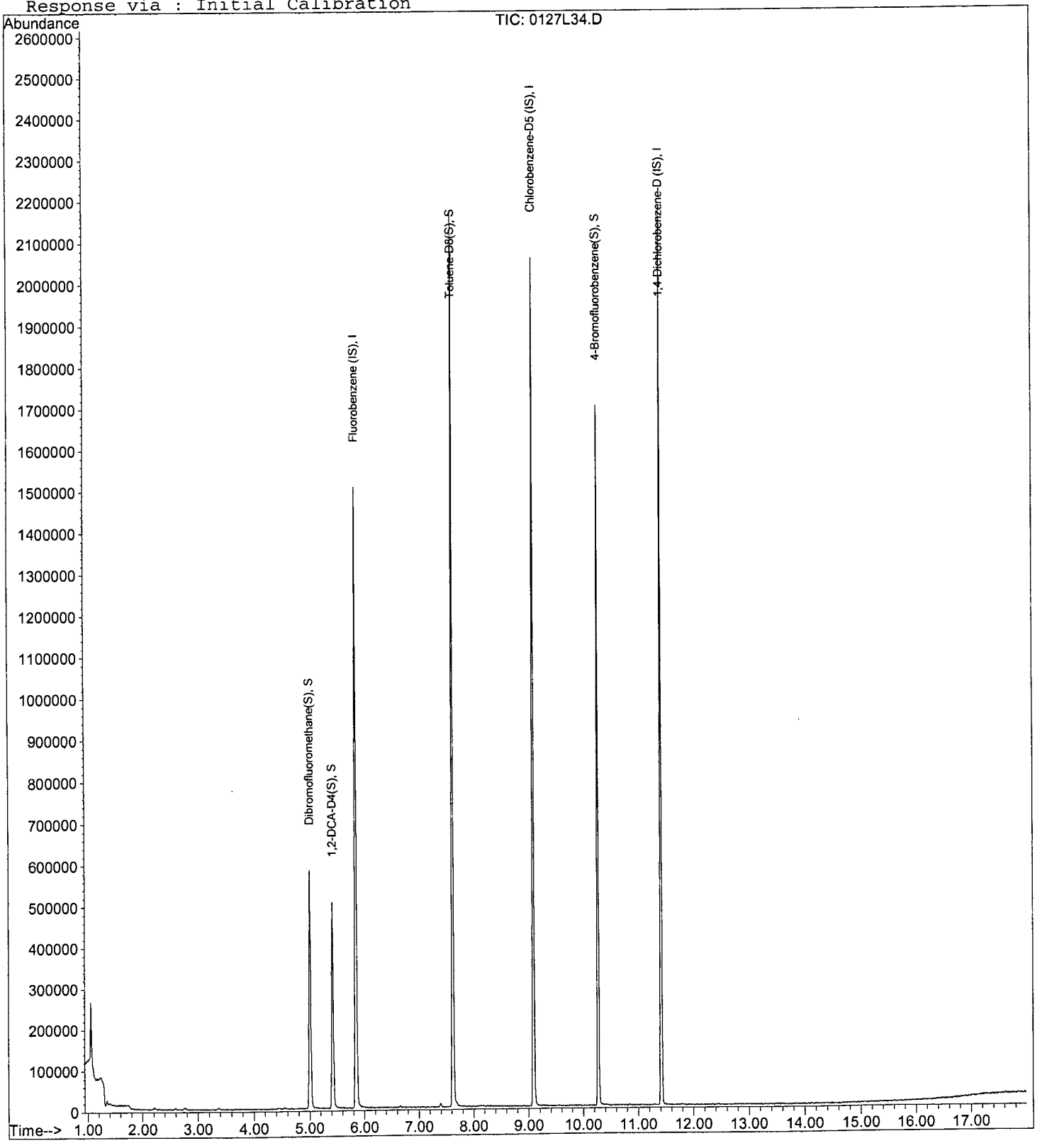
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L34.D
Acq On : 28 Jan 15 00:14
Sample : AZ10127W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 33
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:41 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
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 Phase 1b
Sample ID: RHMW06-GW-02
Sample Collection Date: 01/23/15

ARF: 75450
APPL ID: AZ10128
QCG: #86CRE-150127AL-193850

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	01/28/15	01/28/15
EPA 8260C	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/28/15	01/28/15
EPA 8260C	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/28/15	01/28/15
EPA 8260C	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/28/15	01/28/15
EPA 8260C	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/28/15	01/28/15
EPA 8260C	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/28/15	01/28/15
EPA 8260C	1,2,4-TRICHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DIBROMO-3-CHLOROPROPANE	1.00 U	2.0	1.00	0.76	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DICHLOROBENZENE	0.30 U	1.0	0.30	0.17	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DICHLOROETHANE	0.100 U	0.10	0.100	0.030	ug/L	01/28/15	01/28/15
EPA 8260C	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/28/15	01/28/15
EPA 8260C	1,3-DICHLOROBENZENE	0.30 U	1.0	0.30	0.11	ug/L	01/28/15	01/28/15
EPA 8260C	1,3-DICHLOROPROPENE (TOTAL)	0.30 U	1.0	0.30	0.18	ug/L	01/28/15	01/28/15
EPA 8260C	1,4-DICHLOROBENZENE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/28/15	01/28/15
EPA 8260C	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/28/15	01/28/15
EPA 8260C	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/28/15	01/28/15
EPA 8260C	BENZENE	0.200 U	0.20	0.200	0.060	ug/L	01/28/15	01/28/15
EPA 8260C	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/28/15	01/28/15
EPA 8260C	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/28/15	01/28/15
EPA 8260C	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/28/15	01/28/15
EPA 8260C	CARBON TETRACHLORIDE	0.100 U	0.10	0.100	0.030	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROFORM	0.20 U	0.2	0.20	0.06	ug/L	01/28/15	01/28/15
EPA 8260C	CHLOROMETHANE	0.50 U	1.0	0.50	0.31	ug/L	01/28/15	01/28/15
EPA 8260C	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/28/15	01/28/15
EPA 8260C	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/28/15	01/28/15
EPA 8260C	HEXACHLOROBUTADIENE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	METHYL TERT-BUTYL ETHER	0.52 U	1.0	0.52	0.26	ug/L	01/28/15	01/28/15
EPA 8260C	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/28/15	01/28/15
EPA 8260C	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/28/15	01/28/15

Quant Method: LCREDW.M
Run #: 0127L35
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

Printed: 01/28/15 12:04:43 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 Phase 1b
Sample ID: RHMW06-GW-02
Sample Collection Date: 01/23/15

ARF: 75450
APPL ID: AZ10128
QCG: #86CRE-150127AL-193850

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	01/28/15	01/28/15
EPA 8260C	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/28/15	01/28/15
EPA 8260C	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/28/15	01/28/15
EPA 8260C	VINYL CHLORIDE	0.10 U	0.1	0.10	0.03	ug/L	01/28/15	01/28/15
EPA 8260C	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/28/15	01/28/15
EPA 8260C	SURROGATE: 1,2-DICHLOROETHANE	101	70-120			%	01/28/15	01/28/15
EPA 8260C	SURROGATE: 4-BROMOFLUOROBEN	98.7	75-120			%	01/28/15	01/28/15
EPA 8260C	SURROGATE: DIBROMOFLUOROMET	104	85-115			%	01/28/15	01/28/15
EPA 8260C	SURROGATE: TOLUENE-D8 (S)	98.4	85-120			%	01/28/15	01/28/15

Quant Method: LCREDW.M
Run #: 0127L35
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

Printed: 01/28/15 12:04:43 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150127\0127L35.D
Acq On : 28 Jan 15 00:42
Sample : AZ10128W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 34
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	743616	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	755840	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	400768	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	402972	23.24038 ppb	0.00
Spiked Amount 22.395			Recovery	= 103.772%	
38) 1,2-DCA-D4(S)	5.42	65	359348	21.31530 ppb	0.00
Spiked Amount 21.127			Recovery	= 100.892%	
58) Toluene-D8(S)	7.62	98	1396353	23.15413 ppb	0.00
Spiked Amount 23.536			Recovery	= 98.378%	
66) 4-Bromofluorobenzene(S)	10.27	95	505498	23.36097 ppb	0.00
Spiked Amount 23.661			Recovery	= 98.734%	

Target Compounds Qvalue

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

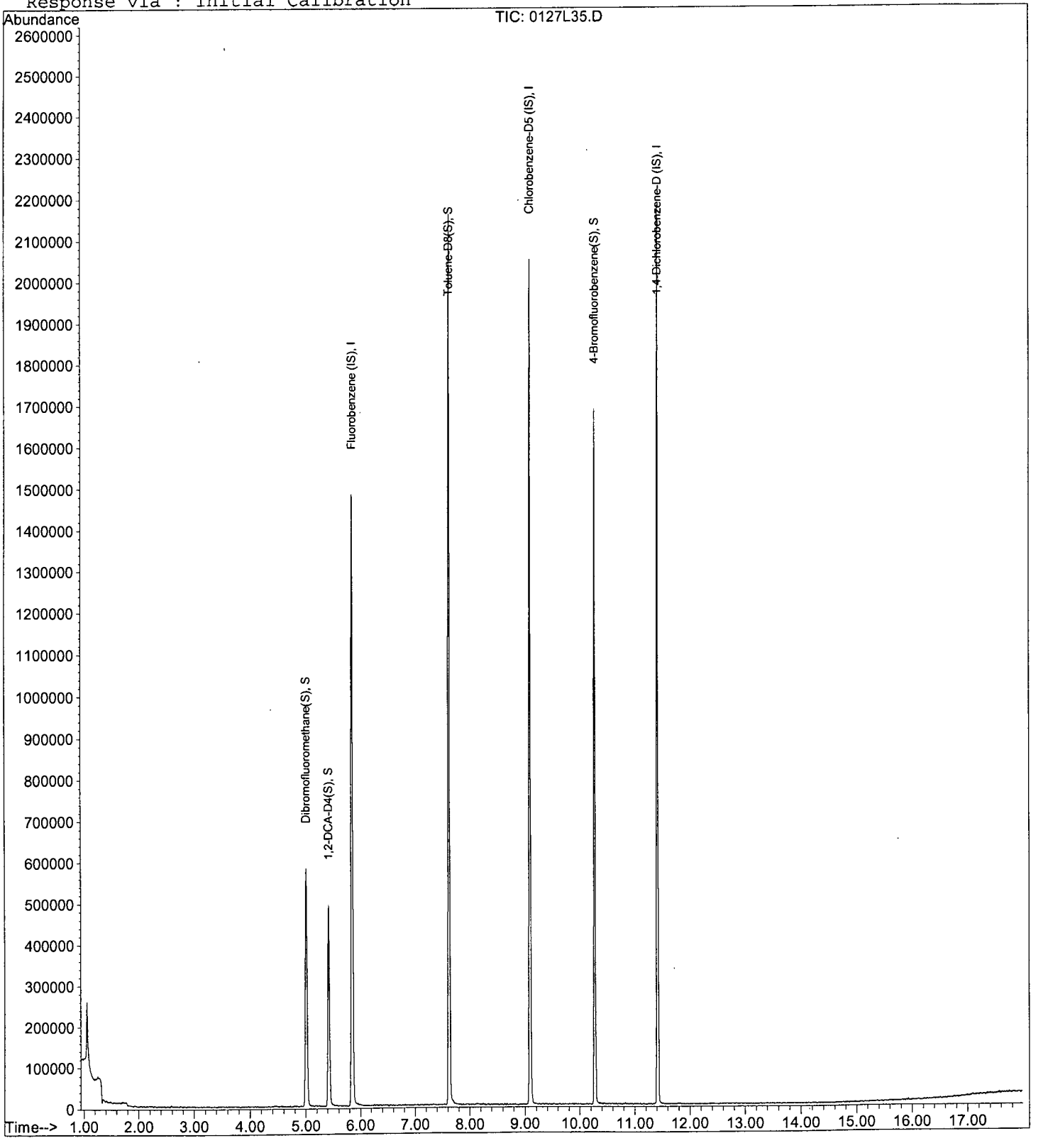
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L35.D
Acq On : 28 Jan 15 00:42
Sample : AZ10128W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 34
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:42 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
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 Phase 1b
Sample ID: Trip Blank 1/23/15
Sample Collection Date: 01/23/15

ARF: 75450
APPL ID: AZ10129
QCG: #86CRE-150127AL-193850

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	01/27/15	01/27/15
EPA 8260C	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
EPA 8260C	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/27/15	01/27/15
EPA 8260C	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
EPA 8260C	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/27/15	01/27/15
EPA 8260C	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/27/15	01/27/15
EPA 8260C	1,2,4-TRICHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DIBROMO-3-CHLOROPROPANE	1.00 U	2.0	1.00	0.76	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DICHLOROBENZENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DICHLOROETHANE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
EPA 8260C	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
EPA 8260C	1,3-DICHLOROBENZENE	0.30 U	1.0	0.30	0.11	ug/L	01/27/15	01/27/15
EPA 8260C	1,3-DICHLOROPROPENE (TOTAL)	0.30 U	1.0	0.30	0.18	ug/L	01/27/15	01/27/15
EPA 8260C	1,4-DICHLOROBENZENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/27/15	01/27/15
EPA 8260C	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/27/15	01/27/15
EPA 8260C	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/27/15	01/27/15
EPA 8260C	BENZENE	0.200 U	0.20	0.200	0.060	ug/L	01/27/15	01/27/15
EPA 8260C	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
EPA 8260C	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
EPA 8260C	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/27/15	01/27/15
EPA 8260C	CARBON TETRACHLORIDE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROFORM	0.20 U	0.2	0.20	0.06	ug/L	01/27/15	01/27/15
EPA 8260C	CHLOROMETHANE	0.50 U	1.0	0.50	0.31	ug/L	01/27/15	01/27/15
EPA 8260C	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
EPA 8260C	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/27/15	01/27/15
EPA 8260C	HEXACHLOROBUTADIENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	METHYL TERT-BUTYL ETHER	0.52 U	1.0	0.52	0.26	ug/L	01/27/15	01/27/15
EPA 8260C	METHYLENE CHLORIDE	1.3 J	5.0	1.00	0.35	ug/L	01/27/15	01/27/15
EPA 8260C	STYRENE	0.50 U	1.0	0.50	0.25	ug/L	01/27/15	01/27/15

J = Estimated value.

Quant Method: LCREDW.M
Run #: 0127L26
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

Printed: 01/28/15 12:04:43 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 Phase 1b
Sample ID: Trip Blank 1/23/15
Sample Collection Date: 01/23/15

ARF: 75450
APPL ID: AZ10129
QCG: #86CRE-150127AL-193850

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	01/27/15	01/27/15
EPA 8260C	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
EPA 8260C	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
EPA 8260C	VINYL CHLORIDE	0.10 U	0.1	0.10	0.03	ug/L	01/27/15	01/27/15
EPA 8260C	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/27/15	01/27/15
EPA 8260C	SURROGATE: 1,2-DICHLOROETHANE	95.8	70-120			%	01/27/15	01/27/15
EPA 8260C	SURROGATE: 4-BROMOFLUOROBEN	98.3	75-120			%	01/27/15	01/27/15
EPA 8260C	SURROGATE: DIBROMOFLUOROMET	96.6	85-115			%	01/27/15	01/27/15
EPA 8260C	SURROGATE: TOLUENE-D8 (S)	97.5	85-120			%	01/27/15	01/27/15

J = Estimated value.

Quant Method: LCREDW.M
Run #: 0127L26
Instrument: Loki
Sequence: 150127
Dilution Factor: 1
Initials: SV

Printed: 01/28/15 12:04:43 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150127\0127L26.D
Acq On : 27 Jan 15 20:30
Sample : AZ10129W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 25
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:37 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	800576	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	788608	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	414336	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	403639	21.62259 ppb	0.00
Spiked Amount 22.395			Recovery	= 96.552%	
38) 1,2-DCA-D4(S)	5.42	65	367273	20.23538 ppb	0.00
Spiked Amount 21.127			Recovery	= 95.780%	
58) Toluene-D8(S)	7.62	98	1443744	22.94522 ppb	0.00
Spiked Amount 23.536			Recovery	= 97.490%	
66) 4-Bromofluorobenzene(S)	10.27	95	525211	23.26344 ppb	0.00
Spiked Amount 23.661			Recovery	= 98.320%	
Target Compounds					Qvalue
19) Methylene chloride	2.59	84	25939	1.34713 ppb	99

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

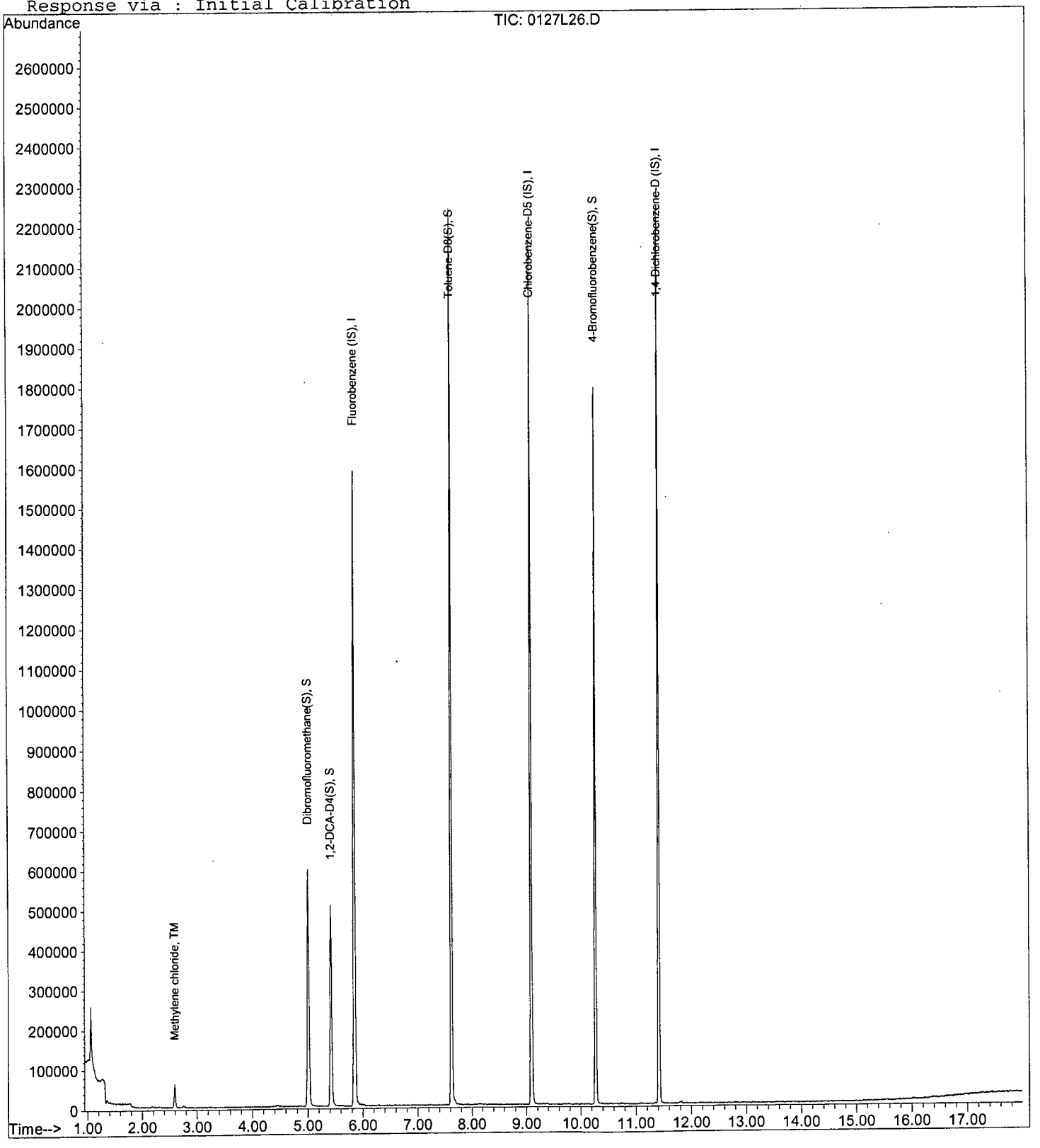
Quantitation Report

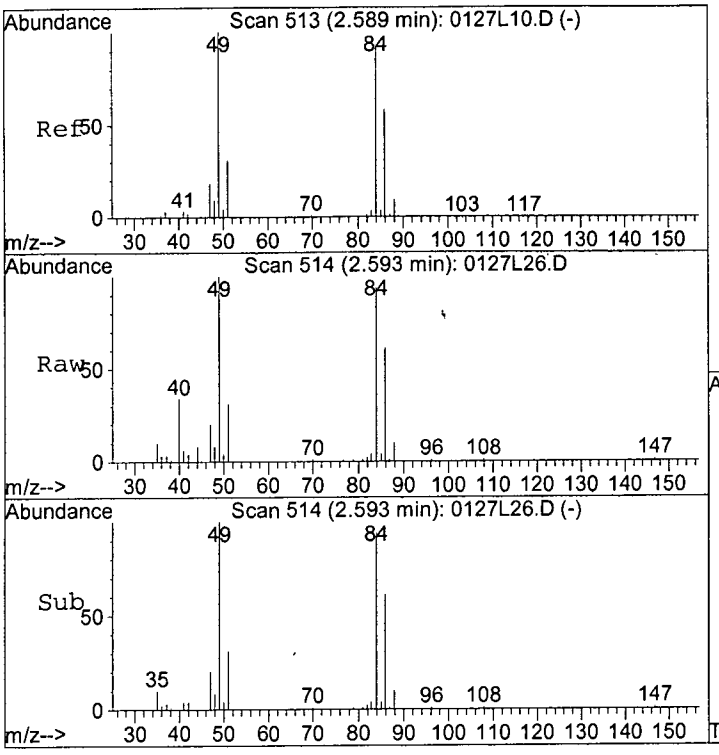
Data File : M:\LOKI\DATA\150127\0127L26.D
Acq On : 27 Jan 15 20:30
Sample : AZ10129W01
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 25
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:37 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration

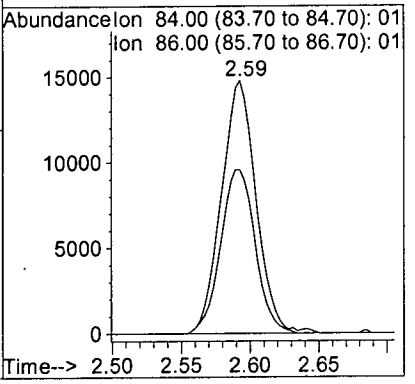




#19
Methylene chloride
Concen: 1.34713 ppb
RT: 2.59 min Scan# 514
Delta R.T. 0.00 min
Lab File: 0127L26.D
Acq: 27 Jan 15 20:30

Tgt Ion: 84 Resp: 25939

Ion	Ratio	Lower	Upper
84	100		
86	64.6	44.5	82.6



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: 01/27/15
Matrix: Instrument: Loki Initials:

		Compound	0.1	0.5	1	5	10	20	40	100			Avg	%RSD		
			0127L05.D	0127L07.D	0127L08.D	0127L09.D	0127L10.D	0127L11.D	0127L12.D	0127L13.D						
1	I	Fluorobenzene (IS)	ISTD													
2	TM	Dichlorodifluoromethane		0.5747	0.5007	0.5037	0.5122	0.5167	0.4748	0.5005			0.51	6.0	TM	
3	TM	Freon 114		0.5394	0.5332	0.4968	0.4746	0.4650	0.4925	0.4980			0.50	5.5	TM	
4	TM**	Chloromethane		0.8751	0.6589	0.6377	0.6270	0.6237	0.5734	0.6071			0.66	15	TM**	
5	TM*	Vinyl chloride	0.8918	0.6426	0.6373	0.6253	0.6136	0.6164	0.5914	0.6059			0.65	15	TM*	
6	TM	Bromomethane		0.4790	0.4235	0.4094	0.3986	0.4634	0.4059	0.3695			0.42	9.0	TM	
7	TM	Chloroethane		0.3616	0.3571	0.3429	0.3242	0.3039	0.2959				0.33	8.3	TM	
8	TM	Dichlorofluoromethane		1.270	1.164	1.182	1.101	1.047	1.069	1.053			1.1	7.3	TM	
9	TM	Trichlorofluoromethane		0.9227	0.8108	0.8345	0.8029	0.7961	0.7490	0.7798			0.81	6.7	TM	
10	TM	Acrolein		0.0544	0.0530	0.0532	0.0519	0.0512	0.0528	0.0532			0.05	1.9	TM	
11	TML	Acetone		0.4450	0.2929	0.1458	0.1167	0.1019	0.1017	0.1040			0.19	71	TML	0.999
12	TM	Freon-113		0.5563	0.5013	0.5083	0.4879	0.4605	0.4886	0.4832			0.50	6.0	TM	
13	TM*	1,1-DCE		0.7772	0.7095	0.7154	0.7066	0.6811	0.7070	0.7017			0.71	4.2	TM*	
14	TM	t-Butanol		0.0122	0.0122	0.0124	0.0118	0.0125	0.0142	0.0149			0.01	9.0	TM	
15	TM	Acetonitrile		0.0453	0.0458	0.0459	0.0455	0.0426	0.0444	0.0469			0.05	3.1	TM	
16	TM	Methyl Acetate		0.3386	0.3011	0.2858	0.2751	0.2666	0.2762	0.2911			0.29	8.3	TM	
17	TML	Iodomethane		0.3337	0.2291	0.2282	0.2206	0.2224	0.2490	0.2467			0.25	16	TML	1.000
18	TM	Acrylonitrile		0.1130	0.1182	0.1219	0.1132	0.1095	0.1129	0.1141			0.11	3.6	TM	
19	TM	Methylene chloride		0.7144	0.6418	0.6149	0.5804	0.5520	0.5581	0.5472			0.60	10	TM	
20	TM	Carbon disulfide		1.530	1.418	1.377	1.317	1.292	1.369	1.389			1.4	5.6	TM	
21	TM	Methyl t-butyl ether (MtBE)		1.327	1.149	1.329	1.273	1.250	1.299	1.316			1.3	5.0	TM	
22	TM	Trans-1,2-DCE		0.5794	0.5602	0.5570	0.5433	0.5244	0.5340	0.5421			0.55	3.3	TM	
23	TM	Diisopropyl Ether		1.385	1.372	1.502	1.478	1.456	1.496	1.512			1.5	3.9	TM	
24	TM**	1,1-DCA		0.9657	0.9098	0.9592	0.8900	0.8710	0.8576	0.8279			0.90	5.7	TM**	
25	TM	Hexane		0.5505	0.5259	0.5073	0.5086	0.4866	0.5389	0.5439			0.52	4.4	TM	
26	TM	Vinyl Acetate		0.3701	0.3453	0.3093	0.3006	0.2832	0.2834	0.2731			0.31	12	TM	
27	TM	Ethyl tert Butyl Ether		1.321	1.281	1.375	1.360	1.336	1.408	1.446			1.4	4.1	TM	
28	TML	MEK (2-Butanone)		0.2236	0.1565	0.1664	0.1403	0.1461	0.1465	0.1492			0.16	18	TML	1.000
29	TM	Cis-1,2-DCE		0.6715	0.5902	0.6329	0.6244	0.5993	0.6191	0.6163			0.62	4.2	TM	
30	TM	2,2-Dichloropropane		0.3075	0.2546	0.2562	0.2457	0.2392	0.2473	0.2437			0.26	9.1	TM	
31	TM*	Chloroform	1.265	1.103	0.9388	0.9848	0.9227	0.8822	0.8997	0.8927			0.99	14	TM*	
32	TM	Bromochloromethane		0.3526	0.3158	0.3191	0.3077	0.2846	0.2892	0.2842			0.31	8.0	TM	
33	S	Dibromofluoromethane(S)		0.5972	0.5820	0.5614	0.5633	0.5760					0.58	2.5	S	
34	TM	1,1,1-TCA		0.8115	0.8166	0.7979	0.7741	0.7512	0.7796	0.7755			0.79	3.0	TM	
35	TM	Cyclohexane		0.4369	0.3742	0.3561	0.3490	0.3391	0.3607	0.3529			0.37	8.9	TM	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

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

SDG No:
Initial Cal. Date: 01/27/15
Instrument: Loki

Initials:

		Compound	0.1	0.5	1	5	10	20	40	100			Avg	%RSD		
36	TM	1,1-Dichloropropene		0.6726	0.6052	0.6718	0.6699	0.6592	0.6855	0.6829			0.66	4.1	TM	
37	TM	2,2,4-Trimethylpentane		1.303	1.305	1.391	1.367	1.314	1.424	1.403			1.4	3.7	TM	
38	S	1,2-DCA-D4(S)		0.6131	0.5599	0.5707	0.5409	0.5323					0.56	5.6	S	
39	TM	Carbon Tetrachloride	0.5667	0.6542	0.6318	0.7105	0.6888	0.6869	0.7069	0.7109			0.67	7.5	TM	
40	TM	Tert Amyl Methyl Ether		1.245	1.142	1.315	1.315	1.266	1.323	1.343			1.3	5.4	TM	
41	TM	1,2-DCA	0.8256	0.6287	0.6312	0.6706	0.6467	0.6032	0.5953	0.5895			0.65	12	TM	
42	TM	Benzene	2.684	2.358	2.056	2.222	2.123	2.043	2.074	2.027			2.2	10	TM	
43	TM	TCE	0.7642	0.6182	0.5600	0.5853	0.5543	0.5429	0.5560	0.5554			0.59	12	TM	
44	TM	2-Pentanone		0.2536	0.2526	0.2641	0.2681	0.2687	0.2764	0.2767			0.27	3.7	TM	
45	TM*	1,2-Dichloropropane		0.5990	0.5307	0.5912	0.5545	0.5391	0.5374	0.5293			0.55	5.2	TM*	
46	TM	Bromodichloromethane		0.7037	0.6380	0.7040	0.6766	0.6546	0.6719	0.6798			0.68	3.6	TM	
47	TM	Methyl Cyclohexane		0.7941	0.7281	0.7505	0.7535	0.7379	0.8057	0.8122			0.77	4.5	TM	
48	TM	Dibromomethane		0.3614	0.3017	0.3405	0.3232	0.3075	0.3143	0.3075			0.32	6.7	TM	
49	TMQ	2-Chloroethyl vinyl ether		0.0074	0.0137	0.0181	0.0170	0.0189	0.0226	0.0282			0.02	36	TMQ	1.000
50	TM	MIBK (methyl isobutyl ketone)		0.3733	0.3572	0.3398	0.3427	0.3153	0.3310	0.3276			0.34	5.7	TM	
51	TM	1-Bromo-2-chloroethane		0.3975	0.3595	0.4212	0.3899	0.3927	0.3997	0.3973			0.39	4.6	TM	
52	TM	Cis-1,3-Dichloropropene		0.7838	0.7324	0.7935	0.7914	0.7868	0.8326	0.8626			0.80	5.1	TM	
53	TM*	Toluene	2.661	2.375	2.273	2.391	2.321	2.257	2.296	2.261			2.4	5.7	TM*	
54	TM	Trans-1,3-Dichloropropene		0.6736	0.6301	0.6758	0.6602	0.6598	0.6964	0.7182			0.67	4.2	TM	
55	TM	1,1,2-TCA		0.3788	0.3911	0.4211	0.3850	0.3689	0.3745	0.3754			0.38	4.5	TM	
56	TM	2-Hexanone		0.2359	0.2018	0.2010	0.2069	0.2108	0.2126	0.2190			0.21	5.7	TM	
57	I	Chlorobenzene-D5 (IS)	ISTD													
58	S	Toluene-D8(S)		1.966	1.956	1.954	2.030	2.049					2.0	2.3	S	
59	TM	1,2-EDB		0.4482	0.4579	0.4903	0.4654	0.4577	0.4620	0.4648			0.46	2.8	TM	
60	TML	Tetrachloroethene	1.039	0.7142	0.7189	0.7116	0.6976	0.6583	0.6529	0.6528			0.73	17	TML	1.00
61	TM	1-Chlorohexane		0.6516	0.5914	0.6624	0.6902	0.6762	0.7086	0.7322			0.67	6.7	TM	
62	TM	1,1,1,2-Tetrachloroethane		0.5076	0.5887	0.6195	0.6134	0.5812	0.5754	0.5929			0.58	6.3	TM	
63	TML	m&p-Xylene	2.067	0.8834	0.8617	0.9917	1.012	1.011	1.006	1.018			1.1	36	TML	1.00
64	TM	o-Xylene	1.015	0.8421	0.8714	0.9620	0.9864	0.9726	0.9839	1.009			0.96	6.7	TM	
65	TM	Styrene		1.241	1.288	1.527	1.630	1.644	1.674	1.701			1.5	12	TM	
66	S	4-Bromofluorobenzene(S)		0.6834	0.6710	0.7151	0.7456	0.7517					0.71	5.1	S	
67	TM	1,3-Dichloropropane		0.7729	0.7877	0.7839	0.7887	0.7609	0.7538	0.7477			0.77	2.2	TM	
68	TM	Dibromochloromethane		0.4404	0.4624	0.5400	0.5489	0.5347	0.5454	0.5724			0.52	9.4	TM	
69	TM**	Chlorobenzene		1.692	1.679	1.677	1.643	1.598	1.590	1.599			1.6	2.7	TM**	
70	TM*	Ethylbenzene	2.947	2.364	2.259	2.571	2.577	2.565	2.556	2.557			2.5	7.8	TM*	

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 01/27/15
Matrix: Instrument: Loki Initials:

		Compound	0.1	0.5	1	5	10	20	40	100			Avg	%RSD		
71	TM**	Bromoform	0.3333	0.3081	0.3552	0.3607	0.3702	0.3622	0.3729	0.3957			0.36	7.4	TM**	
72	I	1,4-Dichlorobenzene-D (IS)	ISTD													
73	TM	Isopropylbenzene	4.314	4.067	3.948	4.260	4.015	4.062	4.066	3.908			4.1	3.5	TM	
74	TM**	1,1,2,2-Tetrachloroethane	1.122	0.9209	1.034	1.042	0.9515	0.8961	0.8599	0.8014			0.95	11	TM**	
75	TM	1,2,3-Trichloropropane		0.3272	0.2791	0.3036	0.2938	0.2793	0.2701	0.2539			0.29	8.4	TM	
76	TM	t-1,4-Dichloro-2-Butene		0.1679	0.1490	0.2165	0.1841	0.1812	0.1859	0.1798			0.18	11	TM	
77	TM	Bromobenzene	1.450	1.206	1.304	1.334	1.252	1.212	1.192	1.140			1.3	7.8	TM	
78	TM	n-Propylbenzene	5.157	4.572	4.435	4.943	4.808	4.852	4.768	4.483			4.8	5.2	TM	
79	TM	4-Ethyltoluene	4.269	3.500	3.611	4.268	4.157	4.168	4.153	3.913			4.0	7.5	TM	
80	TM	2-Chlorotoluene	3.543	2.852	2.846	3.117	2.955	2.897	2.815	2.639			3.0	9.2	TM	
81	TM	1,3,5-Trimethylbenzene	3.887	3.199	3.139	3.767	3.724	3.649	3.580	3.376			3.5	7.7	TM	
82	TM	4-Chlorotoluene	3.879	3.187	3.181	3.530	3.436	3.389	3.296	3.070			3.4	7.6	TM	
83	TM	Tert-Butylbenzene	2.989	2.775	2.948	3.222	3.065	3.062	3.085	2.962			3.0	4.3	TM	
84	TM	1,2,4-Trimethylbenzene	3.833	3.197	3.200	3.699	3.649	3.670	3.648	3.450			3.5	6.7	TM	
85	TM	Sec-Butylbenzene	4.528	3.783	4.003	4.603	4.453	4.479	4.434	4.200			4.3	6.7	TM	
86	TM	p-Isopropyltoluene	4.229	3.312	3.295	3.897	3.812	3.827	3.840	3.663			3.7	8.3	TM	
87	TM	Benzyl Chloride	1.635	1.137	1.102	1.155	1.102	1.143	1.114	1.173			1.2	15	TM	
88	TM	1,3-DCB	2.606	2.254	2.417	2.468	2.276	2.244	2.179	2.063			2.3	7.5	TM	
89	TM	1,4-DCB		2.712	2.541	2.542	2.371	2.284	2.222	2.076			2.4	9.2	TM	
90	TM	n-Butylbenzene	3.862	3.113	2.967	3.477	3.374	3.449	3.464	3.328			3.4	7.9	TM	
91	TM	1,2-DCB	2.804	2.315	2.202	2.344	2.187	2.124	2.094	2.002			2.3	11	TM	
92	TM	Hexachloroethane	0.7381	0.7115	0.6484	0.7453	0.6829	0.7210	0.6760	0.6880			0.70	4.7	TM	
93	TM	1,2-Dibromo-3-chloropropane	0.1657	0.1639	0.1911	0.1781	0.1782	0.1883	0.1923	0.2069			0.18	7.9	TM	
94	TML	1,2,4-Trichlorobenzene		1.050	1.054	1.438	1.438	1.530	1.588	1.729			1.4	19	TML	0.999
95	TM	Hexachlorobutadiene		0.9169	0.8524	0.9484	0.8832	0.8946	0.8749	0.8903			0.89	3.4	TM	
96	TMQ	Naphthalene		0.6504	0.7067	1.237	1.436	1.694	1.956	2.143			1.4	41	TMQ	1.000
97	TML	1,2,3-Trichlorobenzene		0.5592	0.6414	0.8651	0.8986	0.9449	1.039	1.091			0.86	23	TML	0.999
98																
99																
100																
101																
102																
103																
104																
105																

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L05.D
Acq On : 27 Jan 15 10:39
Sample : 0.1ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:07:35 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	778240	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	775552	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	424064	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	9914	0.54633 ppb	0.00
Spiked Amount 22.395			Recovery	= 2.438%	
38) 1,2-DCA-D4(S)	5.42	65	8507	0.48216 ppb	0.00
Spiked Amount 21.127			Recovery	= 2.281%	
58) Toluene-D8(S)	7.62	98	30975	0.50057 ppb	0.00
Spiked Amount 23.536			Recovery	= 2.129%	
66) 4-Bromofluorobenzene(S)	10.27	95	12046	0.54254 ppb	0.00
Spiked Amount 23.661			Recovery	= 2.295%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	1685	0.10572 ppb	#	66
3) Freon 114	1.07	85	1809	0.11821 ppb		97
4) Chloromethane	1.10	50	4010	0.19591 ppb		86
5) Vinyl chloride	1.18	62	2776	0.13732 ppb	#	49
6) Bromomethane	1.41	94	2571	0.19056 ppb		82
7) Chloroethane	1.49	64	1450	0.13864 ppb		89
8) Dichlorofluoromethane	1.64	67	5263	0.14919 ppb		90
9) Trichlorofluoromethane	1.69	101	3022	0.12022 ppb		99
10) Acrolein	2.04	56	8780	5.09669 ppb	#	94
11) Acetone	2.18	43	5095	0.29934 ppb		91
12) Freon-113	2.14	101	1854	0.11972 ppb		90
13) 1,1-DCE	2.12	61	2499	0.11213 ppb		90
14) t-Butanol	2.79	59	2160	5.24959 ppb		98
15) Acetonitrile	2.44	41	8007	5.69120 ppb	#	47
16) Methyl Acetate	2.52	43	1425	0.15750 ppb	#	20
17) Iodomethane	2.24	142	1818	0.65590 ppb	#	87
18) Acrylonitrile	2.88	52	358	0.09955 ppb	#	36
19) Methylene chloride	2.59	84	52043	2.78039 ppb		97
20) Carbon disulfide	2.29	76	5579	0.12815 ppb	#	79
21) Methyl t-butyl ether (MtBE	2.92	73	4454	0.11292 ppb	#	89
22) Trans-1,2-DCE	2.90	96	2778	0.16075 ppb		80
23) Diisopropyl Ether	3.60	45	5579	0.12314 ppb	#	85
24) 1,1-DCA	3.42	63	3586	0.12623 ppb	#	85
25) Hexane	3.25	57	2255	0.14082 ppb	#	80
26) Vinyl Acetate	3.60	43	1619	0.16423 ppb	#	69
27) Ethyl tert Butyl Ether	4.17	59	5486	0.13108 ppb	#	88
29) Cis-1,2-DCE	4.30	96	2463	0.12636 ppb		89
30) 2,2-Dichloropropane	4.29	77	1341	0.16844 ppb		94
31) Chloroform	4.79	83	3938	0.12828 ppb		97
32) Bromochloromethane	4.65	128	1126	0.11750 ppb		94
34) 1,1,1-TCA	5.00	97	3026	0.12288 ppb	#	76
35) Cyclohexane	5.05	41	1955	0.17007 ppb	#	55
36) 1,1-Dichloropropene	5.22	75	2860	0.13971 ppb	#	83
37) 2,2,4-Trimethylpentane	5.62	57	4315	0.10289 ppb	#	62
39) Carbon Tetrachloride	5.22	117	1764	0.08514 ppb	#	69
40) Tert Amyl Methyl Ether	5.70	73	4600	0.11753 ppb	#	90
41) 1,2-DCA	5.52	62	2570	0.12783 ppb	#	71
42) Benzene	5.48	78	8355	0.12147 ppb		96
43) TCE	6.29	95	2379	0.12877 ppb		86

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L05.D
Acq On : 27 Jan 15 10:39
Sample : 0.1ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:07:35 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44) 2-Pentanone	6.55	43	38541	4.65914 ppb		99
45) 1,2-Dichloropropane	6.52	63	2465	0.14275 ppb	#	87
46) Bromodichloromethane	6.86	83	2943	0.13823 ppb	#	84
47) Methyl Cyclohexane	6.48	83	2723	0.11531 ppb		94
48) Dibromomethane	6.66	93	1302	0.13110 ppb	#	69
50) MIBK (methyl isobutyl ket	7.55	43	1720	0.16204 ppb	#	78
51) 1-Bromo-2-chloroethane	7.17	63	1310	0.10860 ppb		85
52) Cis-1,3-Dichloropropene	7.36	75	3088	0.12606 ppb		90
53) Toluene	7.69	91	8284	0.11394 ppb		89
55) 1,1,2-TCA	8.12	83	1431	0.11933 ppb	#	82
56) 2-Hexanone	8.42	43	1318	0.19604 ppb	#	63
59) 1,2-EDB	8.60	107	1648	0.11441 ppb		89
61) 1-Chlorohexane	9.13	91	2484	0.12070 ppb	#	77
62) 1,1,1,2-Tetrachloroethane	9.21	131	2323	0.13017 ppb		96
63) m&p-Xylene	9.37	106	6411	0.40418 ppb		100
64) o-Xylene	9.76	106	3149	0.10861 ppb		88
65) Styrene	9.78	104	4443	0.09593 ppb	#	97
67) 1,3-Dichloropropane	8.29	76	2819	0.11775 ppb	#	70
68) Dibromochloromethane	8.51	129	1898	0.11742 ppb		85
69) Chlorobenzene	9.11	112	6514	0.12799 ppb		93
70) Ethylbenzene	9.25	91	9141	0.11576 ppb		99
71) Bromoform	9.93	173	1034	0.09323 ppb	#	62
73) Isopropylbenzene	10.13	105	7318	0.10553 ppb		94
74) 1,1,2,2-Tetrachloroethane	10.43	83	1903	0.11590 ppb	#	89
75) 1,2,3-Trichloropropane	10.46	110	696	0.13965 ppb	#	69
76) t-1,4-Dichloro-2-Butene	10.50	53	393	0.12826 ppb	#	23
77) Bromobenzene	10.41	156	2460	0.11532 ppb		94
78) n-Propylbenzene	10.55	91	8748	0.10939 ppb		97
79) 4-Ethyltoluene	10.66	105	7241	0.10793 ppb	#	79
80) 2-Chlorotoluene	10.61	91	6009	0.11782 ppb		94
81) 1,3,5-Trimethylbenzene	10.73	105	6594	0.11109 ppb		86
82) 4-Chlorotoluene	10.72	91	6580	0.11573 ppb		85
83) Tert-Butylbenzene	11.05	119	5070	0.10015 ppb	#	84
84) 1,2,4-Trimethylbenzene	11.09	105	6501	0.10896 ppb		83
85) Sec-Butylbenzene	11.26	105	7680	0.10647 ppb		92
86) p-Isopropyltoluene	11.42	119	7173	0.11433 ppb	#	65
87) Benzyl Chloride	11.58	91	2774	0.13756 ppb	#	88
88) 1,3-DCB	11.34	146	4420	0.11160 ppb		94
89) 1,4-DCB	11.43	146	6048	0.14749 ppb	#	87
90) n-Butylbenzene	11.82	91	6551	0.11529 ppb		89
91) 1,2-DCB	11.80	146	4756	0.12479 ppb		92
92) Hexachloroethane	12.05	117	1252	0.10360 ppb	#	84
93) 1,2-Dibromo-3-chloropropan	12.56	157	281	0.08965 ppb	#	55
94) 1,2,4-Trichlorobenzene	13.39	180	2210	1.37664 ppb		75
95) Hexachlorobutadiene	13.58	225	1271	0.08293 ppb		93
96) Naphthalene	13.62	128	1249	1.01876 ppb	#	86
97) 1,2,3-Trichlorobenzene	13.86	180	818	1.14079 ppb	#	65

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

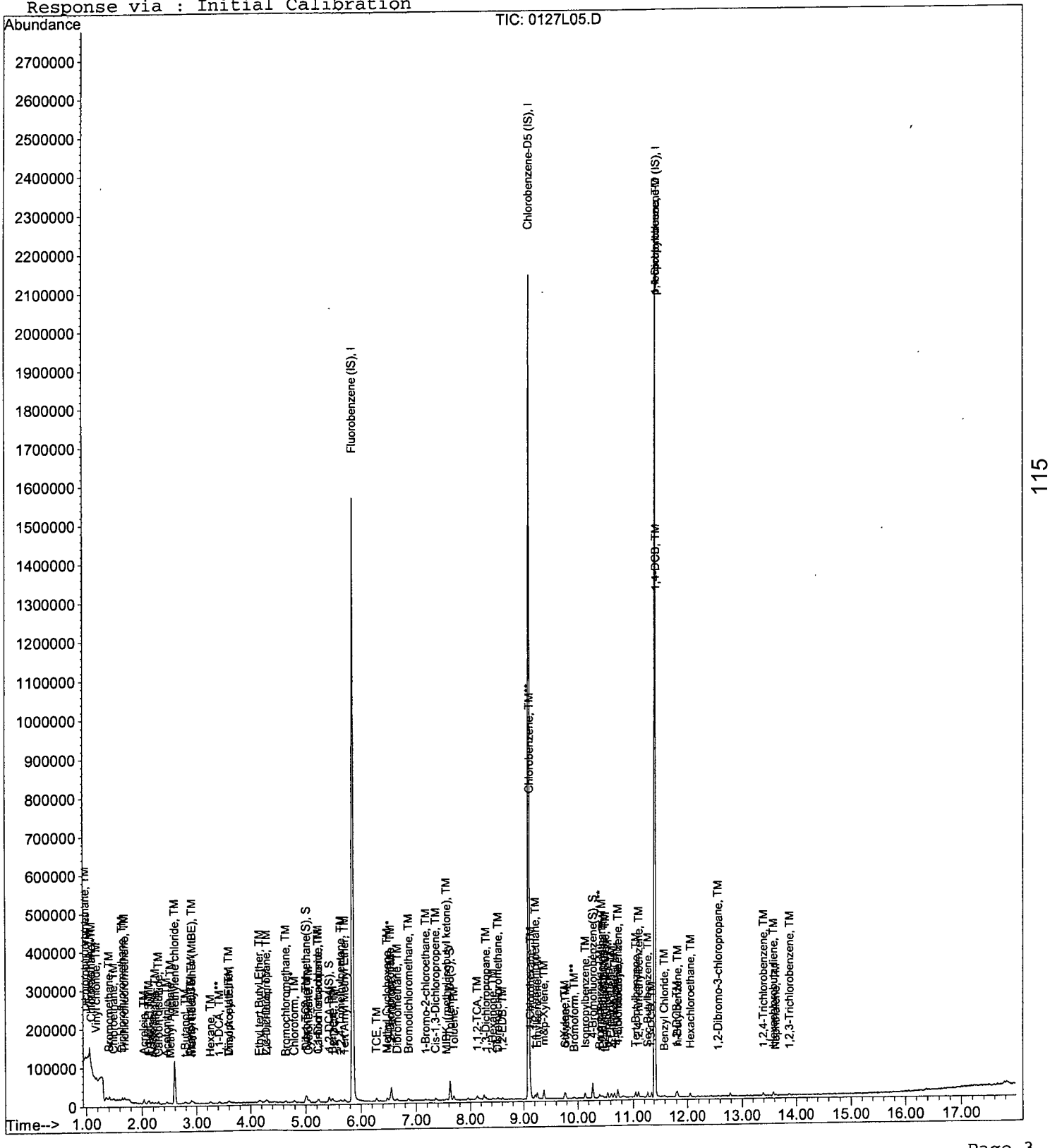
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L05.D
Acq On : 27 Jan 15 10:39
Sample : 0.1ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 4
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:37 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



115

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L07.D
Acq On : 27 Jan 15 11:35
Sample : 0.5ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	781056	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	796160	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	419968	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	18659	1.02453 ppb	0.00
Spiked Amount 22.395			Recovery	= 4.577%	
38) 1,2-DCA-D4(S)	5.42	65	19155	1.08174 ppb	0.00
Spiked Amount 21.127			Recovery	= 5.122%	
58) Toluene-D8(S)	7.62	98	62616	0.98571 ppb	0.00
Spiked Amount 23.536			Recovery	= 4.189%	
66) 4-Bromofluorobenzene(S)	10.27	95	21764	0.95486 ppb	0.00
Spiked Amount 23.661			Recovery	= 4.036%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	8977	0.56122 ppb		96
3) Freon 114	1.07	85	8426	0.54859 ppb		91
4) Chloromethane	1.10	50	13670	0.66543 ppb		98
5) Vinyl chloride	1.18	62	10038	0.49474 ppb		99
6) Bromomethane	1.41	94	7483	0.55262 ppb		93
7) Chloroethane	1.49	64	5649	0.53816 ppb		96
8) Dichlorofluoromethane	1.64	67	19833	0.56017 ppb		100
9) Trichlorofluoromethane	1.69	101	14413	0.57132 ppb		88
10) Acrolein	2.03	56	42513	24.58934 ppb	#	98
11) Acetone	2.18	43	6951	0.87652 ppb		86
12) Freon-113	2.14	101	8690	0.55912 ppb		88
13) 1,1-DCE	2.12	61	12140	0.54276 ppb		92
14) t-Butanol	2.79	59	9494	22.99069 ppb		95
15) Acetonitrile	2.44	41	35400	25.07081 ppb	#	76
16) Methyl Acetate	2.52	43	5290	0.58258 ppb		93
17) Iodomethane	2.24	142	5212	1.09404 ppb		88
18) Acrylonitrile	2.89	52	1765	0.48904 ppb	#	49
19) Methylene chloride	2.59	84	11160	0.59407 ppb		100
20) Carbon disulfide	2.29	76	23904	0.54709 ppb		96
21) Methyl t-butyl ether (MtBE	2.92	73	20735	0.52379 ppb		96
22) Trans-1,2-DCE	2.90	96	9051	0.52186 ppb		96
23) Diisopropyl Ether	3.60	45	21632	0.47574 ppb	#	84
24) 1,1-DCA	3.42	63	15085	0.52909 ppb		95
25) Hexane	3.26	57	8600	0.53510 ppb		98
26) Vinyl Acetate	3.59	43	5781	0.58429 ppb	#	96
27) Ethyl tert Butyl Ether	4.17	59	20640	0.49139 ppb		98
28) MEK (2-Butanone)	4.41	43	3493	0.81079 ppb	#	80
29) Cis-1,2-DCE	4.31	96	10490	0.53622 ppb		95
30) 2,2-Dichloropropane	4.28	77	4804	0.60123 ppb		94
31) Chloroform	4.80	83	17233	0.55934 ppb		94
32) Bromochloromethane	4.65	128	5508	0.57269 ppb		94
34) 1,1,1-TCA	5.00	97	12677	0.51294 ppb		96
35) Cyclohexane	5.05	41	6825	0.59158 ppb		76
36) 1,1-Dichloropropene	5.23	75	10506	0.51136 ppb		99
37) 2,2,4-Trimethylpentane	5.63	57	20359	0.48372 ppb	#	71
39) Carbon Tetrachloride	5.22	117	10219	0.49144 ppb		99
40) Tert Amyl Methyl Ether	5.70	73	19441	0.49494 ppb		98
41) 1,2-DCA	5.52	62	9821	0.48672 ppb		97
42) Benzene	5.48	78	36840	0.53367 ppb		97

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L07.D
Acq On : 27 Jan 15 11:35
Sample : 0.5ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.29	95	9657	0.52083 ppb		91
44) 2-Pentanone	6.55	43	198042	23.85454 ppb		98
45) 1,2-Dichloropropane	6.52	63	9357	0.53994 ppb	#	94
46) Bromodichloromethane	6.86	83	10992	0.51443 ppb		93
47) Methyl Cyclohexane	6.48	83	12404	0.52338 ppb		95
48) Dibromomethane	6.65	93	5645	0.56635 ppb		89
49) 2-Chloroethyl vinyl ether	7.25	106	115	0.81163 ppb	#	47
50) MIBK (methyl isobutyl ket	7.55	43	5831	0.54735 ppb		98
51) 1-Bromo-2-chloroethane	7.17	63	6210	0.51294 ppb		94
52) Cis-1,3-Dichloropropene	7.35	75	12244	0.49804 ppb		98
53) Toluene	7.69	91	37095	0.50838 ppb		94
54) Trans-1,3-Dichloropropene	7.95	75	10523	0.50989 ppb		95
55) 1,1,2-TCA	8.13	83	5918	0.49171 ppb		93
56) 2-Hexanone	8.42	43	3685	0.54612 ppb		97
59) 1,2-EDB	8.60	107	7137	0.48264 ppb		86
60) Tetrachloroethene	8.25	166	11372	0.33727 ppb		94
61) 1-Chlorohexane	9.14	91	10376	0.49112 ppb		97
62) 1,1,1,2-Tetrachloroethane	9.21	131	8082	0.44116 ppb		84
63) m&p-Xylene	9.37	106	28132	1.06925 ppb		98
64) o-Xylene	9.76	106	13409	0.45051 ppb		96
65) Styrene	9.78	104	19763	0.41564 ppb	#	90
67) 1,3-Dichloropropane	8.29	76	12307	0.50077 ppb		92
68) Dibromochloromethane	8.51	129	7013	0.42263 ppb		95
69) Chlorobenzene	9.12	112	26950	0.51581 ppb		90
70) Ethylbenzene	9.25	91	37636	0.46427 ppb		99
71) Bromoform	9.93	173	4906	0.43092 ppb		96
73) Isopropylbenzene	10.14	105	34158	0.49740 ppb		97
74) 1,1,2,2-Tetrachloroethane	10.44	83	7735	0.47567 ppb		98
75) 1,2,3-Trichloropropane	10.47	110	2748	0.55675 ppb		99
76) t-1,4-Dichloro-2-Butene	10.50	53	1410	0.46467 ppb		96
77) Bromobenzene	10.41	156	10133	0.47967 ppb		98
78) n-Propylbenzene	10.54	91	38406	0.48494 ppb		99
79) 4-Ethyltoluene	10.66	105	29398	0.44248 ppb		95
80) 2-Chlorotoluene	10.61	91	23952	0.47423 ppb		94
81) 1,3,5-Trimethylbenzene	10.73	105	26868	0.45707 ppb		98
82) 4-Chlorotoluene	10.72	91	26770	0.47543 ppb		96
83) Tert-Butylbenzene	11.04	119	23309	0.46491 ppb		95
84) 1,2,4-Trimethylbenzene	11.09	105	26851	0.45441 ppb		96
85) Sec-Butylbenzene	11.26	105	31774	0.44479 ppb		99
86) p-Isopropyltoluene	11.42	119	27820	0.44776 ppb	#	90
87) Benzyl Chloride	11.58	91	9548	0.47809 ppb		97
88) 1,3-DCB	11.35	146	18935	0.48276 ppb		90
89) 1,4-DCB	11.43	146	22776	0.56083 ppb		98
90) n-Butylbenzene	11.82	91	26150	0.46470 ppb		96
91) 1,2-DCB	11.80	146	19447	0.51523 ppb		94
92) Hexachloroethane	12.05	117	5976	0.49933 ppb		98
93) 1,2-Dibromo-3-chloropropan	12.56	157	1377	0.44362 ppb	#	65
94) 1,2,4-Trichlorobenzene	13.39	180	8823	1.60449 ppb		93
95) Hexachlorobutadiene	13.58	225	7701	0.50738 ppb		94
96) Naphthalene	13.62	128	5463	1.15789 ppb	#	90
97) 1,2,3-Trichlorobenzene	13.87	180	4697	1.35216 ppb		93

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

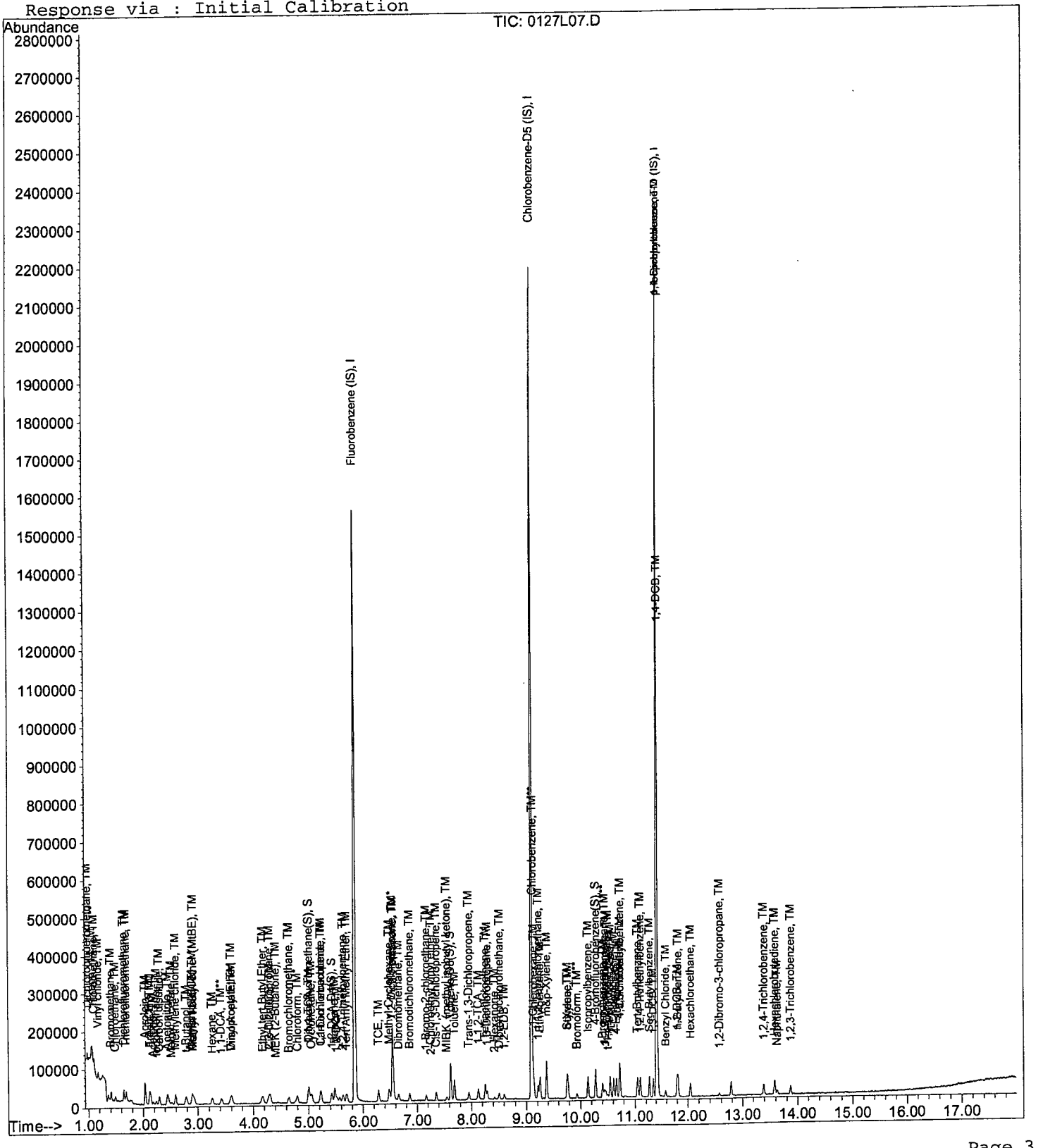
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L07.D
Acq On : 27 Jan 15 11:35
Sample : 0.5ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L08.D
Acq On : 27 Jan 15 12:03
Sample : 1.0ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	795712	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	786432	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	420352	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	37046	1.99665 ppb	0.00
Spiked Amount 22.395			Recovery	= 8.917%	
38) 1,2-DCA-D4(S)	5.42	65	35639	1.97558 ppb	0.00
Spiked Amount 21.127			Recovery	= 9.353%	
58) Toluene-D8(S)	7.62	98	123056	1.96112 ppb	0.00
Spiked Amount 23.536			Recovery	= 8.332%	
66) 4-Bromofluorobenzene(S)	10.27	95	42214	1.87498 ppb	0.00
Spiked Amount 23.661			Recovery	= 7.925%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	15937	0.97798 ppb	97
3) Freon 114	1.07	85	16971	1.08458 ppb	93
4) Chloromethane	1.10	50	20971	1.00203 ppb	94
5) Vinyl chloride	1.18	62	20283	0.98128 ppb	94
6) Bromomethane	1.41	94	13479	0.97709 ppb	100
7) Chloroethane	1.49	64	11366	1.06285 ppb	86
8) Dichlorofluoromethane	1.64	67	37037	1.02682 ppb	99
9) Trichlorofluoromethane	1.69	101	25808	1.00416 ppb	97
10) Acrolein	2.03	56	84327	47.87602 ppb	100
11) Acetone	2.18	43	9324	1.56793 ppb	98
12) Freon-113	2.14	101	15957	1.00778 ppb	94
13) 1,1-DCE	2.11	61	22583	0.99106 ppb	96
14) t-Butanol	2.79	59	19488	46.32297 ppb	99
15) Acetonitrile	2.44	41	72838	50.63483 ppb	97
16) Methyl Acetate	2.52	43	9585	1.03614 ppb #	77
17) Iodomethane	2.24	142	7293	1.34582 ppb	96
18) Acrylonitrile	2.88	52	3763	1.02343 ppb	98
19) Methylene chloride	2.59	84	20428	1.06740 ppb	96
20) Carbon disulfide	2.29	76	45122	1.01368 ppb	99
21) Methyl t-butyl ether (MtBE	2.92	73	36575	0.90690 ppb	95
22) Trans-1,2-DCE	2.90	96	17831	1.00916 ppb	96
23) Diisopropyl Ether	3.60	45	43654	0.94238 ppb	92
24) 1,1-DCA	3.43	63	28959	0.99701 ppb	95
25) Hexane	3.26	57	16737	1.02221 ppb	96
26) Vinyl Acetate	3.59	43	10990	1.09031 ppb	98
27) Ethyl tert Butyl Ether	4.17	59	40765	0.95265 ppb	91
28) MEK (2-Butanone)	4.40	43	4980	1.11092 ppb	96
29) Cis-1,2-DCE	4.31	96	18786	0.94261 ppb	91
30) 2,2-Dichloropropane	4.27	77	8102	0.99530 ppb	88
31) Chloroform	4.80	83	29881	0.95201 ppb	100
32) Bromochloromethane	4.65	128	10050	1.02569 ppb	98
34) 1,1,1-TCA	5.00	97	25992	1.03233 ppb	95
35) Cyclohexane	5.05	41	11909	1.01324 ppb	87
36) 1,1-Dichloropropene	5.23	75	19262	0.92027 ppb	93
37) 2,2,4-Trimethylpentane	5.63	57	41526	0.96846 ppb #	70
39) Carbon Tetrachloride	5.21	117	20110	0.94928 ppb	99
40) Tert Amyl Methyl Ether	5.70	73	36348	0.90832 ppb	94
41) 1,2-DCA	5.52	62	20091	0.97735 ppb	98
42) Benzene	5.48	78	65452	0.93068 ppb	98

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L08.D
Acq On : 27 Jan 15 12:03
Sample : 1.0ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) TCE	6.29	95	17823	0.94354	ppb		93
44) 2-Pentanone	6.54	43	402059	47.53678	ppb		100
45) 1,2-Dichloropropane	6.52	63	16891	0.95672	ppb	#	95
46) Bromodichloromethane	6.86	83	20305	0.93278	ppb		96
47) Methyl Cyclohexane	6.48	83	23175	0.95984	ppb		87
48) Dibromomethane	6.65	93	9603	0.94571	ppb		87
49) 2-Chloroethyl vinyl ether	7.24	106	436	1.34504	ppb	#	75
50) MIBK (methyl isobutyl ket	7.55	43	11369	1.04754	ppb	#	86
51) 1-Bromo-2-chloroethane	7.17	63	11442	0.92769	ppb		97
52) Cis-1,3-Dichloropropene	7.35	75	23312	0.93077	ppb		95
53) Toluene	7.69	91	72357	0.97338	ppb		94
54) Trans-1,3-Dichloropropene	7.95	75	20055	0.95387	ppb		94
55) 1,1,2-TCA	8.13	83	12449	1.01530	ppb		88
56) 2-Hexanone	8.43	43	6422	0.93422	ppb		89
59) 1,2-EDB	8.60	107	14404	0.98611	ppb		99
60) Tetrachloroethene	8.25	166	22614	0.89260	ppb		95
61) 1-Chlorohexane	9.13	91	18605	0.89151	ppb		94
62) 1,1,1,2-Tetrachloroethane	9.21	131	18519	1.02338	ppb		100
63) m&p-Xylene	9.37	106	54215	1.89488	ppb		92
64) o-Xylene	9.76	106	27412	0.93238	ppb		88
65) Styrene	9.78	104	40520	0.86273	ppb		99
67) 1,3-Dichloropropane	8.29	76	24780	1.02077	ppb		98
68) Dibromochloromethane	8.51	129	14546	0.88744	ppb		100
69) Chlorobenzene	9.12	112	52807	1.02320	ppb		93
70) Ethylbenzene	9.25	91	71073	0.88758	ppb		98
71) Bromoform	9.93	173	11173	0.99352	ppb		97
73) Isopropylbenzene	10.14	105	66380	0.96572	ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	17384	1.06808	ppb		97
75) 1,2,3-Trichloropropane	10.46	110	4693	0.94994	ppb		96
76) t-1,4-Dichloro-2-Butene	10.50	53	2505	0.82478	ppb		96
77) Bromobenzene	10.40	156	21923	1.03683	ppb		96
78) n-Propylbenzene	10.54	91	74563	0.94063	ppb		98
79) 4-Ethyltoluene	10.66	105	60714	0.91299	ppb		96
80) 2-Chlorotoluene	10.61	91	47845	0.94643	ppb		95
81) 1,3,5-Trimethylbenzene	10.73	105	52776	0.89699	ppb		94
82) 4-Chlorotoluene	10.72	91	53478	0.94888	ppb		95
83) Tert-Butylbenzene	11.04	119	49572	0.98783	ppb		99
84) 1,2,4-Trimethylbenzene	11.09	105	53813	0.90986	ppb		96
85) Sec-Butylbenzene	11.26	105	67315	0.94145	ppb		96
86) p-Isopropyltoluene	11.41	119	55394	0.89075	ppb		97
87) Benzyl Chloride	11.58	91	18531	0.92703	ppb		90
88) 1,3-DCB	11.34	146	40648	1.03539	ppb		93
89) 1,4-DCB	11.43	146	42721	1.05099	ppb		98
90) n-Butylbenzene	11.82	91	49886	0.88570	ppb		99
91) 1,2-DCB	11.80	146	37025	0.98006	ppb		98
92) Hexachloroethane	12.05	117	10903	0.91017	ppb		99
93) 1,2-Dibromo-3-chloropropan	12.56	157	3213	1.03417	ppb	#	87
94) 1,2,4-Trichlorobenzene	13.39	180	17724	1.90964	ppb		92
95) Hexachlorobutadiene	13.58	225	14333	0.94347	ppb		93
96) Naphthalene	13.62	128	11883	1.36875	ppb		100
97) 1,2,3-Trichlorobenzene	13.87	180	10785	1.68268	ppb		94

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

Quantitation Report

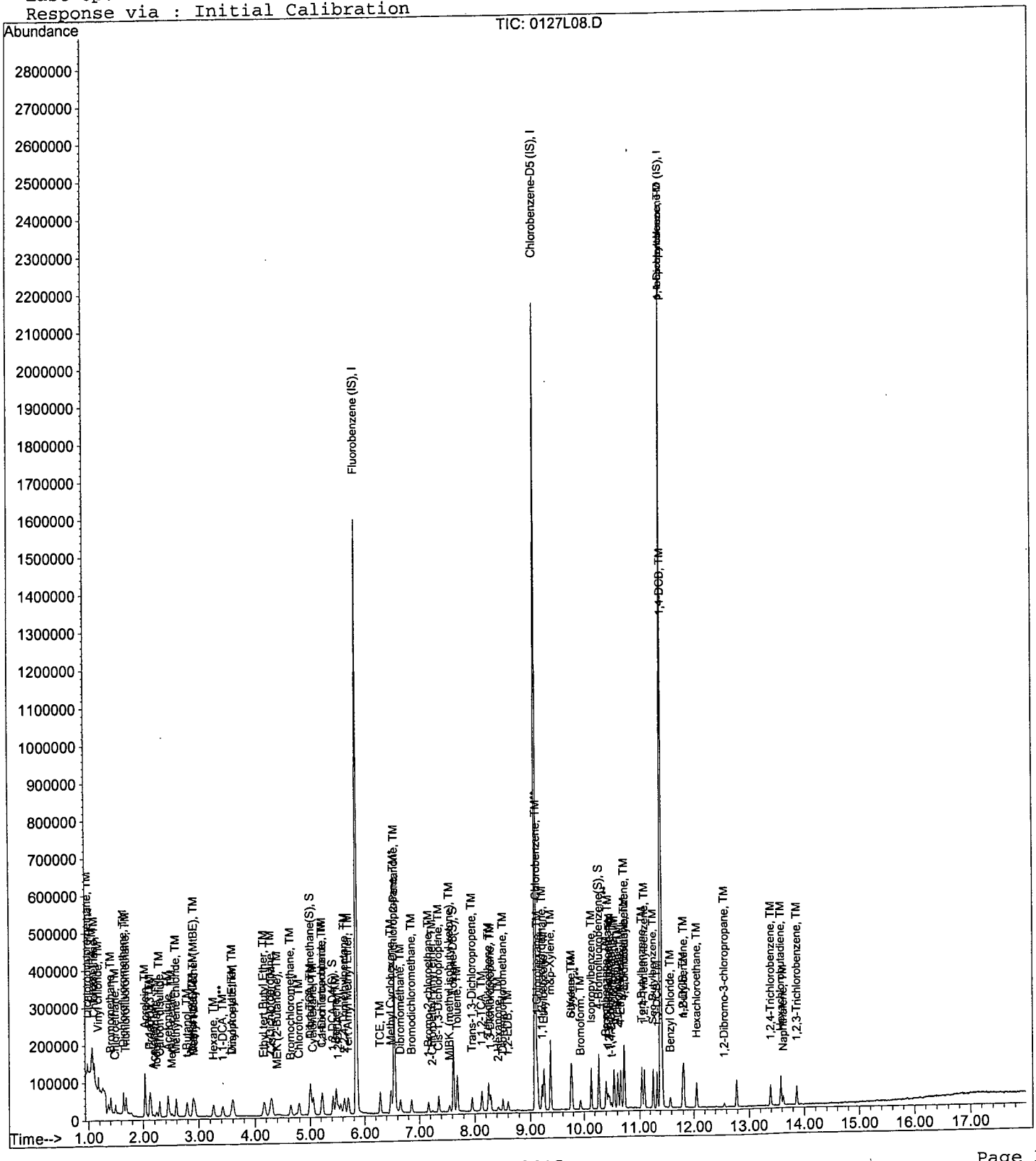
Data File : M:\LOKI\DATA\150127\0127L08.D
Acq On : 27 Jan 15 12:03
Sample : 1.0ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L09.D
Acq On : 27 Jan 15 12:32
Sample : 5.0ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	816128	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	813632	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	462912	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	183255	9.62974 ppb	0.00
Spiked Amount 22.395			Recovery	= 43.000%	
38) 1,2-DCA-D4(S)	5.42	65	186304	10.06906 ppb	0.00
Spiked Amount 21.127			Recovery	= 47.661%	
58) Toluene-D8(S)	7.62	98	635994	9.79689 ppb	0.00
Spiked Amount 23.536			Recovery	= 41.626%	
66) 4-Bromofluorobenzene(S)	10.27	95	232747	9.99211 ppb	0.00
Spiked Amount 23.661			Recovery	= 42.231%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	82223	4.91945 ppb		98
3) Freon 114	1.07	85	81085	5.05235 ppb		93
4) Chloromethane	1.10	50	104090	4.84916 ppb		98
5) Vinyl chloride	1.18	62	102068	4.81444 ppb		97
6) Bromomethane	1.41	94	66823	4.72281 ppb		96
7) Chloroethane	1.49	64	55968	5.10270 ppb		97
8) Dichlorofluoromethane	1.64	67	192930	5.21502 ppb		99
9) Trichlorofluoromethane	1.69	101	136204	5.16698 ppb		96
10) Acrolein	2.03	56	173527	96.05414 ppb	#	98
11) Acetone	2.18	43	23797	5.84662 ppb		89
12) Freon-113	2.13	101	82961	5.10840 ppb		97
13) 1,1-DCE	2.11	61	116776	4.99652 ppb		98
14) t-Butanol	2.78	59	40624	94.14764 ppb		99
15) Acetonitrile	2.44	41	149716	101.47455 ppb		98
16) Methyl Acetate	2.52	43	46643	4.91599 ppb		97
17) Iodomethane	2.24	142	37240	5.02962 ppb		98
18) Acrylonitrile	2.87	52	19891	5.27444 ppb		95
19) Methylene chloride	2.59	84	100374	5.11353 ppb		100
20) Carbon disulfide	2.29	76	224813	4.92418 ppb		99
21) Methyl t-butyl ether (MtBE	2.92	73	216942	5.24466 ppb		98
22) Trans-1,2-DCE	2.90	96	90912	5.01654 ppb		98
23) Diisopropyl Ether	3.60	45	245094	5.15862 ppb		99
24) 1,1-DCA	3.42	63	156566	5.25544 ppb		99
25) Hexane	3.26	57	82797	4.93030 ppb		99
26) Vinyl Acetate	3.59	43	50488	4.88359 ppb		98
27) Ethyl tert Butyl Ether	4.17	59	224495	5.11507 ppb		92
28) MEK (2-Butanone)	4.38	43	27158	5.65022 ppb		99
29) Cis-1,2-DCE	4.31	96	103305	5.05376 ppb		96
30) 2,2-Dichloropropane	4.28	77	41824	5.00940 ppb		98
31) Chloroform	4.80	83	160742	4.99311 ppb		97
32) Bromochloromethane	4.64	128	52079	5.18215 ppb		95
34) 1,1,1-TCA	4.99	97	130245	5.04355 ppb		99
35) Cyclohexane	5.05	41	58125	4.82169 ppb		97
36) 1,1-Dichloropropene	5.23	75	109648	5.10756 ppb		94
37) 2,2,4-Trimethylpentane	5.63	57	226990	5.16140 ppb		99
39) Carbon Tetrachloride	5.21	117	115972	5.33747 ppb		96
40) Tert Amyl Methyl Ether	5.70	73	214715	5.23141 ppb		97
41) 1,2-DCA	5.52	62	109461	5.19167 ppb		99
42) Benzene	5.48	78	362760	5.02913 ppb		99

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L09.D
Acq On : 27 Jan 15 12:32
Sample : 5.0ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	95536	4.93111 ppb		98
44) 2-Pentanone	6.54	43	862037	99.37188 ppb		100
45) 1,2-Dichloropropane	6.52	63	96491	5.32864 ppb		98
46) Bromodichloromethane	6.86	83	114917	5.14706 ppb		99
47) Methyl Cyclohexane	6.48	83	122499	4.94665 ppb		100
48) Dibromomethane	6.65	93	55575	5.33613 ppb		99
49) 2-Chloroethyl vinyl ether	7.24	106	2949	5.33231 ppb		88
50) MIBK (methyl isobutyl ket	7.55	43	55461	4.98234 ppb		95
51) 1-Bromo-2-chloroethane	7.16	63	68752	5.43479 ppb		99
52) Cis-1,3-Dichloropropene	7.35	75	129523	5.04206 ppb		97
53) Toluene	7.69	91	390228	5.11821 ppb		100
54) Trans-1,3-Dichloropropene	7.95	75	110303	5.11504 ppb		99
55) 1,1,2-TCA	8.13	83	68731	5.46525 ppb		98
56) 2-Hexanone	8.42	43	32808	4.65326 ppb	#	96
59) 1,2-EDB	8.60	107	79780	5.27923 ppb		96
60) Tetrachloroethene	8.25	166	115792	5.25031 ppb		97
61) 1-Chlorohexane	9.13	91	107786	4.99219 ppb		99
62) 1,1,1,2-Tetrachloroethane	9.21	131	100811	5.38470 ppb		96
63) m&p-Xylene	9.37	106	322745	9.94733 ppb		99
64) o-Xylene	9.76	106	156546	5.14666 ppb		96
65) Styrene	9.78	104	248539	5.11486 ppb		98
67) 1,3-Dichloropropane	8.29	76	127568	5.07926 ppb		99
68) Dibromochloromethane	8.51	129	87875	5.18195 ppb		95
69) Chlorobenzene	9.12	112	272913	5.11125 ppb		98
70) Ethylbenzene	9.25	91	418316	5.04942 ppb		98
71) Bromoform	9.93	173	58693	5.04458 ppb		99
73) Isopropylbenzene	10.14	105	394372	5.20999 ppb		98
74) 1,1,2,2-Tetrachloroethane	10.44	83	96506	5.38420 ppb		98
75) 1,2,3-Trichloropropane	10.46	110	28109	5.16659 ppb		81
76) t-1,4-Dichloro-2-Butene	10.50	53	20040	5.99157 ppb		89
77) Bromobenzene	10.40	156	123467	5.30240 ppb		99
78) n-Propylbenzene	10.54	91	457620	5.24222 ppb		99
79) 4-Ethyltoluene	10.66	105	395168	5.39600 ppb		100
80) 2-Chlorotoluene	10.61	91	288571	5.18347 ppb		99
81) 1,3,5-Trimethylbenzene	10.73	105	348793	5.38312 ppb		97
82) 4-Chlorotoluene	10.72	91	326853	5.26629 ppb		96
83) Tert-Butylbenzene	11.04	119	298313	5.39802 ppb		98
84) 1,2,4-Trimethylbenzene	11.09	105	342418	5.25727 ppb		96
85) Sec-Butylbenzene	11.26	105	426152	5.41210 ppb		99
86) p-Isopropyltoluene	11.42	119	360786	5.26816 ppb		100
87) Benzyl Chloride	11.58	91	106929	4.85743 ppb		96
88) 1,3-DCB	11.34	146	228480	5.28480 ppb		97
89) 1,4-DCB	11.43	146	235332	5.25718 ppb		99
90) n-Butylbenzene	11.81	91	321933	5.19025 ppb		99
91) 1,2-DCB	11.80	146	216971	5.21521 ppb		98
92) Hexachloroethane	12.05	117	69005	5.23084 ppb		98
93) 1,2-Dibromo-3-chloropropan	12.56	157	16493	4.82055 ppb	#	85
94) 1,2,4-Trichlorobenzene	13.39	180	133156	5.45038 ppb		99
95) Hexachlorobutadiene	13.58	225	87809	5.24860 ppb		96
96) Naphthalene	13.62	128	114528	4.37711 ppb		99
97) 1,2,3-Trichlorobenzene	13.86	180	80096	5.04821 ppb		100

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

Quantitation Report

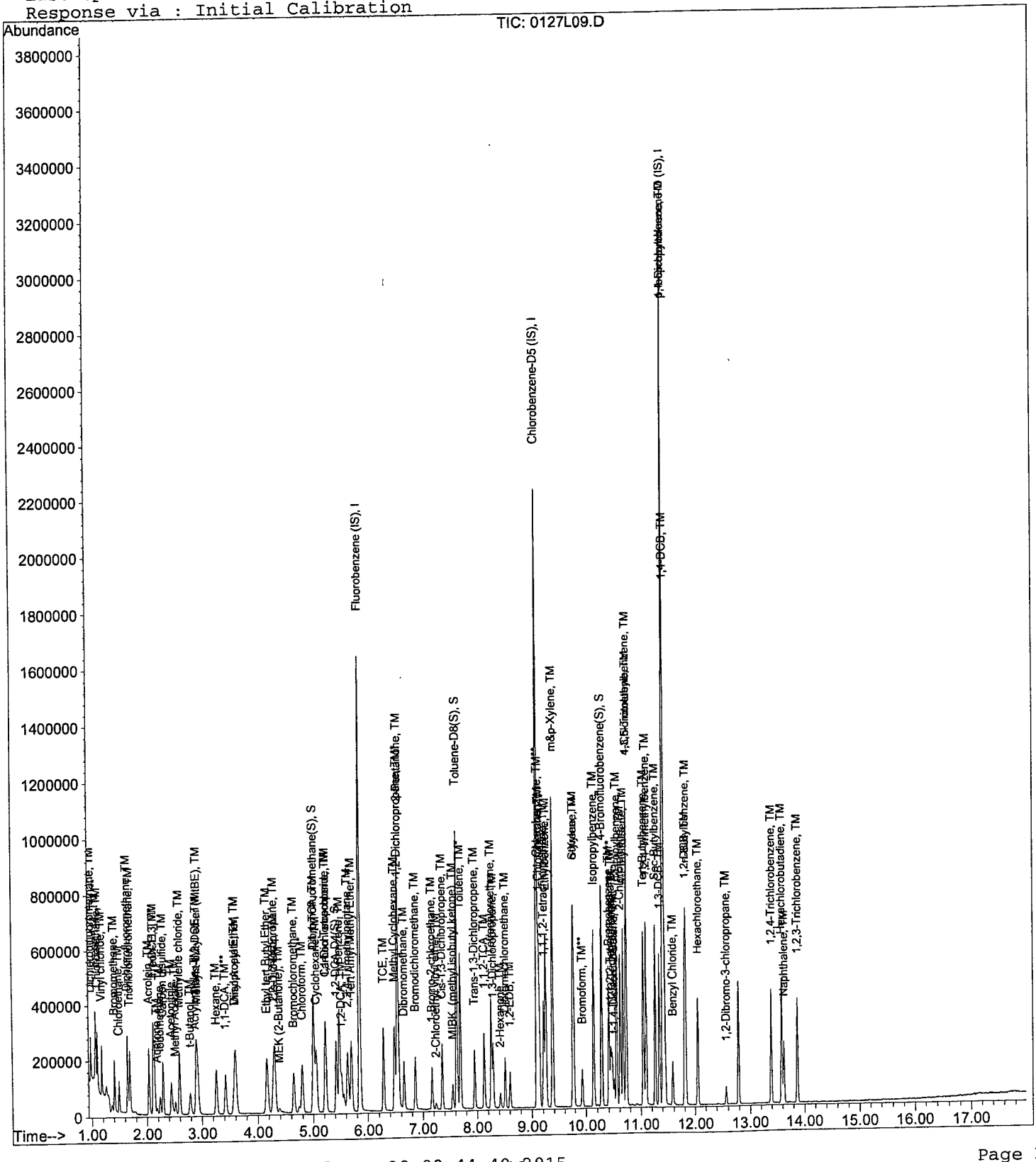
Data File : M:\LOKI\DATA\150127\0127L09.D
Acq On : 27 Jan 15 12:32
Sample : 5.0ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L10.D
Acq On : 27 Jan 15 13:00
Sample : 10ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	833216	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	809472	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	487360	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	469368	24.15867 ppb	0.00
Spiked Amount 22.395			Recovery	= 107.876%	
38) 1,2-DCA-D4(S)	5.42	65	450647	23.85634 ppb	0.00
Spiked Amount 21.127			Recovery	= 112.920%	
58) Toluene-D8(S)	7.62	98	1643324	25.44395 ppb	0.00
Spiked Amount 23.536			Recovery	= 108.108%	
66) 4-Bromofluorobenzene(S)	10.27	95	603533	26.04357 ppb	0.00
Spiked Amount 23.661			Recovery	= 110.074%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	170701	10.00368 ppb	100
3) Freon 114	1.07	85	158194	9.65480 ppb	100
4) Chloromethane	1.10	50	208955	9.53478 ppb	100
5) Vinyl chloride	1.18	62	204495	9.44800 ppb	100
6) Bromomethane	1.40	94	132840	9.19610 ppb	100
7) Chloroethane	1.49	64	108064	9.65033 ppb	100
8) Dichlorofluoromethane	1.64	67	366800	9.71150 ppb	100
9) Trichlorofluoromethane	1.69	101	267597	9.94326 ppb	100
10) Acrolein	2.03	56	216356	117.30557 ppb	100
11) Acetone	2.18	43	38897	10.14590 ppb	100
12) Freon-113	2.13	101	162624	9.80835 ppb	100
13) 1,1-DCE	2.11	61	235509	9.87012 ppb	100
14) t-Butanol	2.79	59	49200	111.68440 ppb	100
15) Acetonitrile	2.44	41	189501	125.80593 ppb	98
16) Methyl Acetate	2.52	43	91675	9.46403 ppb	100
17) Iodomethane	2.24	142	73512	9.33288 ppb	100
18) Acrylonitrile	2.87	52	37723	9.79775 ppb	100
19) Methylene chloride	2.59	84	193454	9.65334 ppb	100
20) Carbon disulfide	2.29	76	438804	9.41420 ppb	100
21) Methyl t-butyl ether (MtBE	2.92	73	424250	10.04608 ppb	100
22) Trans-1,2-DCE	2.89	96	181062	9.78613 ppb	100
23) Diisopropyl Ether	3.60	45	492578	10.15492 ppb	100
24) 1,1-DCA	3.42	63	296638	9.75302 ppb	100
25) Hexane	3.26	57	169521	9.88743 ppb	100
26) Vinyl Acetate	3.59	43	100171	9.49059 ppb	100
27) Ethyl tert Butyl Ether	4.16	59	453373	10.11815 ppb	100
28) MEK (2-Butanone)	4.38	43	46775	9.49113 ppb	100
29) Cis-1,2-DCE	4.30	96	208106	9.97192 ppb	100
30) 2,2-Dichloropropane	4.28	77	81880	9.60591 ppb	100
31) Chloroform	4.80	83	307529	9.35683 ppb	100
32) Bromochloromethane	4.64	128	102551	9.99511 ppb	100
34) 1,1,1-TCA	4.99	97	258002	9.78587 ppb	100
35) Cyclohexane	5.05	41	116302	9.44984 ppb	100
36) 1,1-Dichloropropene	5.23	75	223255	10.18627 ppb	100
37) 2,2,4-Trimethylpentane	5.63	57	455455	10.14395 ppb	100
39) Carbon Tetrachloride	5.21	117	229571	10.34903 ppb	100
40) Tert Amyl Methyl Ether	5.70	73	438125	10.45575 ppb	100
41) 1,2-DCA	5.52	62	215552	10.01383 ppb	100
42) Benzene	5.48	78	707516	9.60750 ppb	100

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L10.D
Acq On : 27 Jan 15 13:00
Sample : 10ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
43) TCE	6.28	95	184724	9.33903	ppb	100
44) 2-Pentanone	6.54	43	1116773	126.09655	ppb	100
45) 1,2-Dichloropropane	6.52	63	184822	9.99732	ppb	100
46) Bromodichloromethane	6.86	83	225503	9.89299	ppb	100
47) Methyl Cyclohexane	6.48	83	251128	9.93285	ppb	100
48) Dibromomethane	6.65	93	107728	10.13156	ppb	100
49) 2-Chloroethyl vinyl ether	7.24	106	5679	9.33563	ppb	100
50) MIBK (methyl isobutyl ket	7.55	43	114202	10.04894	ppb	100
51) 1-Bromo-2-chloroethane	7.16	63	129936	10.06068	ppb	100
52) Cis-1,3-Dichloropropene	7.35	75	263765	10.05724	ppb	100
53) Toluene	7.69	91	773511	9.93727	ppb	100
54) Trans-1,3-Dichloropropene	7.95	75	220026	9.99394	ppb	100
55) 1,1,2-TCA	8.12	83	128301	9.99281	ppb	100
56) 2-Hexanone	8.42	43	68965	9.58091	ppb	100
59) 1,2-EDB	8.60	107	150688	10.02262	ppb	100
60) Tetrachloroethene	8.25	166	225887	10.49752	ppb	100
61) 1-Chlorohexane	9.13	91	223468	10.40329	ppb	100
62) 1,1,1,2-Tetrachloroethane	9.21	131	198609	10.66298	ppb	100
63) m&p-Xylene	9.37	106	655206	20.08867	ppb	100
64) o-Xylene	9.76	106	319388	10.55427	ppb	100
65) Styrene	9.78	104	527653	10.91475	ppb	100
67) 1,3-Dichloropropane	8.29	76	255367	10.21996	ppb	100
68) Dibromochloromethane	8.51	129	177716	10.53370	ppb	100
69) Chlorobenzene	9.12	112	532125	10.01711	ppb	100
70) Ethylbenzene	9.25	91	834401	10.12368	ppb	100
71) Bromoform	9.93	173	119881	10.35655	ppb	100
73) Isopropylbenzene	10.14	105	782759	9.82217	ppb	100
74) 1,1,2,2-Tetrachloroethane	10.44	83	185485	9.82934	ppb	100
75) 1,2,3-Trichloropropane	10.46	110	57272	9.99884	ppb	100
76) t-1,4-Dichloro-2-Butene	10.50	53	35895	10.19354	ppb	100
77) Bromobenzene	10.40	156	244164	9.95982	ppb	100
78) n-Propylbenzene	10.54	91	937267	10.19817	ppb	100
79) 4-Ethyltoluene	10.66	105	810309	10.50968	ppb	100
80) 2-Chlorotoluene	10.61	91	576155	9.83006	ppb	100
81) 1,3,5-Trimethylbenzene	10.73	105	725955	10.64204	ppb	100
82) 4-Chlorotoluene	10.72	91	669910	10.25220	ppb	100
83) Tert-Butylbenzene	11.04	119	597476	10.26908	ppb	100
84) 1,2,4-Trimethylbenzene	11.09	105	711435	10.37499	ppb	100
85) Sec-Butylbenzene	11.26	105	868168	10.47258	ppb	100
86) p-Isopropyltoluene	11.42	119	743218	10.30798	ppb	100
87) Benzyl Chloride	11.58	91	214797	9.26804	ppb	100
88) 1,3-DCB	11.34	146	443778	9.74977	ppb	100
89) 1,4-DCB	11.43	146	462140	9.80605	ppb	100
90) n-Butylbenzene	11.82	91	657751	10.07240	ppb	100
91) 1,2-DCB	11.79	146	426332	9.73345	ppb	100
92) Hexachloroethane	12.05	117	133127	9.58530	ppb	100
93) 1,2-Dibromo-3-chloropropan	12.56	157	34740	9.64441	ppb	100
94) 1,2,4-Trichlorobenzene	13.39	180	280376	9.59926	ppb	100
95) Hexachlorobutadiene	13.58	225	172183	9.77560	ppb	100
96) Naphthalene	13.62	128	279936	8.80056	ppb	100
97) 1,2,3-Trichlorobenzene	13.87	180	175168	9.30501	ppb	100

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

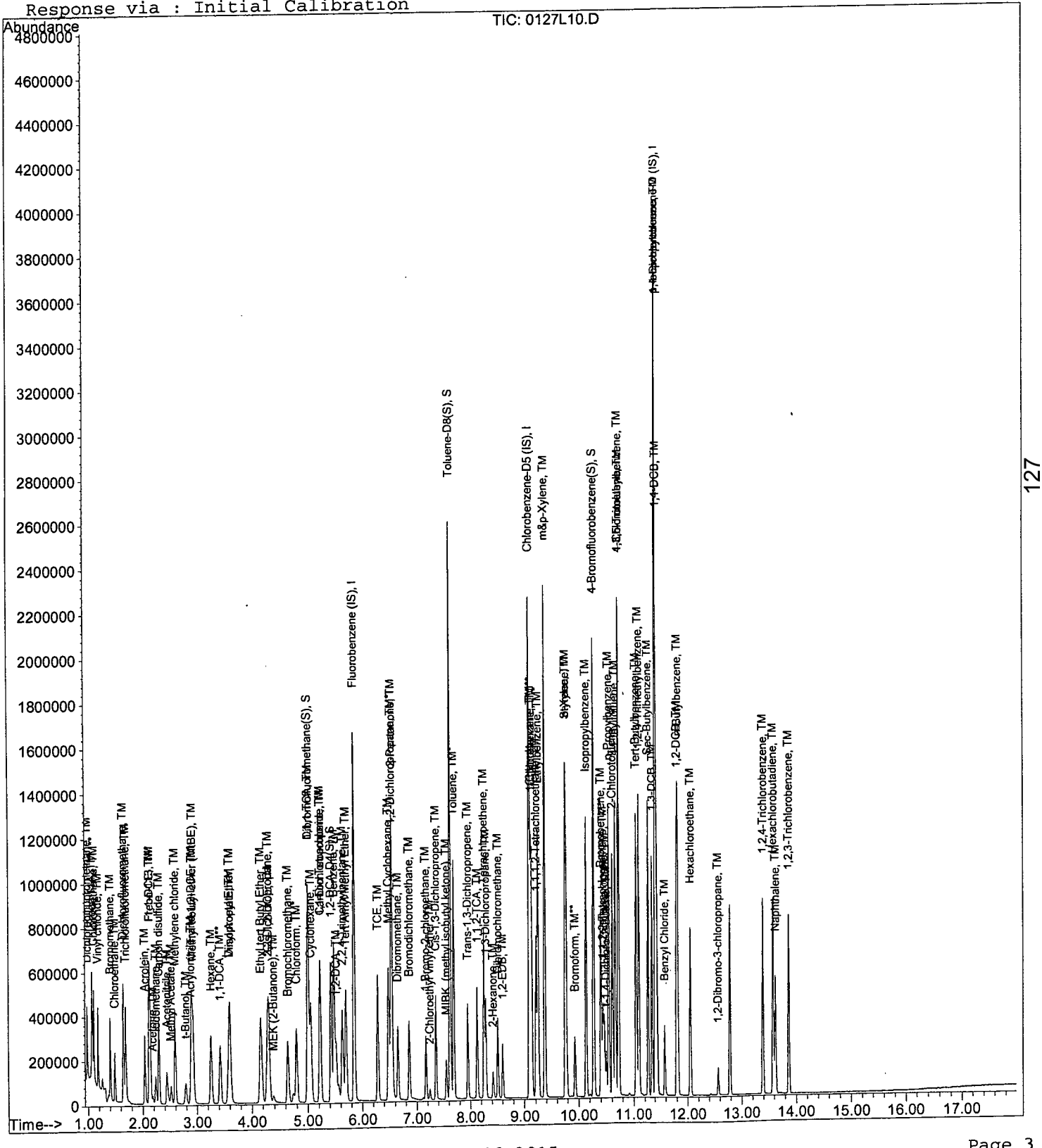
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L10.D
Acq On : 27 Jan 15 13:00
Sample : 10ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L11.D
Acq On : 27 Jan 15 13:28
Sample : 20ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	848064	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	824832	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	493952	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	781583	39.52425 ppb	0.00
Spiked Amount 22.395			Recovery	= 176.484%	
38) 1,2-DCA-D4(S)	5.42	65	722239	37.56446 ppb	0.00
Spiked Amount 21.127			Recovery	= 177.805%	
58) Toluene-D8(S)	7.62	98	2704065	41.08798 ppb	0.00
Spiked Amount 23.536			Recovery	= 174.577%	
66) 4-Bromofluorobenzene(S)	10.27	95	992016	42.01017 ppb	0.00
Spiked Amount 23.661			Recovery	= 177.553%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	350528	20.18252 ppb		100
3) Freon 114	1.07	85	315510	18.91888 ppb		97
4) Chloromethane	1.10	50	423161	18.97110 ppb		100
5) Vinyl chloride	1.18	62	418202	18.98332 ppb		100
6) Bromomethane	1.40	94	314387	21.38300 ppb		98
7) Chloroethane	1.48	64	206183	18.09018 ppb		98
8) Dichlorofluoromethane	1.64	67	710254	18.47565 ppb		100
9) Trichlorofluoromethane	1.68	101	540116	19.71803 ppb		99
10) Acrolein	2.03	56	260631	138.83684 ppb	#	98
11) Acetone	2.18	43	69112	18.68601 ppb		97
12) Freon-113	2.13	101	312435	18.51400 ppb		98
13) 1,1-DCE	2.11	61	462062	19.02585 ppb		100
14) t-Butanol	2.79	59	63576	141.79131 ppb		97
15) Acetonitrile	2.44	41	216584	141.26838 ppb		99
16) Methyl Acetate	2.52	43	180858	18.34390 ppb		96
17) Iodomethane	2.24	142	150912	18.39691 ppb		99
18) Acrylonitrile	2.87	52	74291	18.95769 ppb		100
19) Methylene chloride	2.59	84	374519	18.36128 ppb		98
20) Carbon disulfide	2.29	76	876330	18.47181 ppb		100
21) Methyl t-butyl ether (MtBE	2.92	73	847870	19.72572 ppb		98
22) Trans-1,2-DCE	2.89	96	355813	18.89446 ppb		98
23) Diisopropyl Ether	3.60	45	987772	20.00723 ppb		97
24) 1,1-DCA	3.42	63	590908	19.08803 ppb		99
25) Hexane	3.26	57	330143	18.91868 ppb		99
26) Vinyl Acetate	3.59	43	192112	17.88277 ppb		99
27) Ethyl tert Butyl Ether	4.16	59	906612	19.87906 ppb		95
28) MEK (2-Butanone)	4.38	43	99130	19.69801 ppb		100
29) Cis-1,2-DCE	4.30	96	406594	19.14187 ppb		98
30) 2,2-Dichloropropane	4.28	77	162304	18.70763 ppb		97
31) Chloroform	4.80	83	598527	17.89185 ppb		98
32) Bromochloromethane	4.64	128	193058	18.48692 ppb		99
34) 1,1,1-TCA	4.99	97	509654	18.99244 ppb		99
35) Cyclohexane	5.05	41	230032	18.36345 ppb		93
36) 1,1-Dichloropropene	5.23	75	447242	20.04866 ppb		98
37) 2,2,4-Trimethylpentane	5.63	57	891321	19.50404 ppb		99
39) Carbon Tetrachloride	5.21	117	466023	20.64045 ppb		98
40) Tert Amyl Methyl Ether	5.70	73	858784	20.13586 ppb		99
41) 1,2-DCA	5.52	62	409226	18.67844 ppb		98
42) Benzene	5.48	78	1385906	18.48999 ppb		99

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L11.D
Acq On : 27 Jan 15 13:28
Sample : 20ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	368324	18.29521	ppb	99
44) 2-Pentanone	6.54	43	1367259	151.67641	ppb	100
45) 1,2-Dichloropropane	6.52	63	365784	19.43943	ppb	99
46) Bromodichloromethane	6.86	83	444119	19.14272	ppb	99
47) Methyl Cyclohexane	6.48	83	500597	19.45343	ppb	97
48) Dibromomethane	6.65	93	208612	19.27596	ppb	98
49) 2-Chloroethyl vinyl ether	7.24	106	12834	19.08134	ppb	91
50) MIBK (methyl isobutyl ket	7.55	43	213942	18.49573	ppb	98
51) 1-Bromo-2-chloroethane	7.16	63	266432	20.26811	ppb	100
52) Cis-1,3-Dichloropropene	7.35	75	533812	19.99766	ppb	99
53) Toluene	7.69	91	1531412	19.32954	ppb	100
54) Trans-1,3-Dichloropropene	7.95	75	447609	19.97518	ppb	100
55) 1,1,2-TCA	8.12	83	250306	19.15393	ppb	100
56) 2-Hexanone	8.42	43	143012	19.51998	ppb	99
59) 1,2-EDB	8.60	107	301994	19.71230	ppb	98
60) Tetrachloroethene	8.25	166	434415	19.99947	ppb	97
61) 1-Chlorohexane	9.13	91	446186	20.38485	ppb	97
62) 1,1,1,2-Tetrachloroethane	9.21	131	383492	20.20563	ppb	99
63) m&p-Xylene	9.37	106	1334297	39.94706	ppb	98
64) o-Xylene	9.76	106	641783	20.81298	ppb	99
65) Styrene	9.78	104	1084528	22.01621	ppb	100
67) 1,3-Dichloropropane	8.29	76	502086	19.71964	ppb	100
68) Dibromochloromethane	8.51	129	352800	20.52198	ppb	99
69) Chlorobenzene	9.11	112	1054378	19.47877	ppb	98
70) Ethylbenzene	9.25	91	1692572	20.15334	ppb	100
71) Bromoform	9.93	173	239015	20.26405	ppb	98
73) Isopropylbenzene	10.14	105	1605039	19.87147	ppb	98
74) 1,1,2,2-Tetrachloroethane	10.44	83	354094	18.51396	ppb	98
75) 1,2,3-Trichloropropane	10.46	110	110352	19.00871	ppb	92
76) t-1,4-Dichloro-2-Butene	10.50	53	71620	20.06738	ppb	98
77) Bromobenzene	10.40	156	478772	19.26920	ppb	98
78) n-Propylbenzene	10.54	91	1917384	20.58415	ppb	99
79) 4-Ethyltoluene	10.66	105	1647200	21.07902	ppb	100
80) 2-Chlorotoluene	10.61	91	1144888	19.27280	ppb	98
81) 1,3,5-Trimethylbenzene	10.73	105	1441885	20.85504	ppb	99
82) 4-Chlorotoluene	10.72	91	1339302	20.22294	ppb	100
83) Tert-Butylbenzene	11.04	119	1209880	20.51722	ppb	99
84) 1,2,4-Trimethylbenzene	11.09	105	1450322	20.86806	ppb	100
85) Sec-Butylbenzene	11.26	105	1769901	21.06512	ppb	99
86) p-Isopropyltoluene	11.41	119	1512351	20.69547	ppb	100
87) Benzyl Chloride	11.58	91	451712	19.23031	ppb	97
88) 1,3-DCB	11.34	146	886566	19.21786	ppb	98
89) 1,4-DCB	11.43	146	902506	18.89452	ppb	100
90) n-Butylbenzene	11.81	91	1363009	20.59373	ppb	99
91) 1,2-DCB	11.79	146	839128	18.90219	ppb	98
92) Hexachloroethane	12.05	117	284898	20.23923	ppb	96
93) 1,2-Dibromo-3-chloropropan	12.56	157	74402	20.37959	ppb	99
94) 1,2,4-Trichlorobenzene	13.39	180	604607	18.95614	ppb	100
95) Hexachlorobutadiene	13.58	225	353506	19.80228	ppb	93
96) Naphthalene	13.62	128	669504	19.07000	ppb	100
97) 1,2,3-Trichlorobenzene	13.86	180	373376	18.35942	ppb	99

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

Quantitation Report

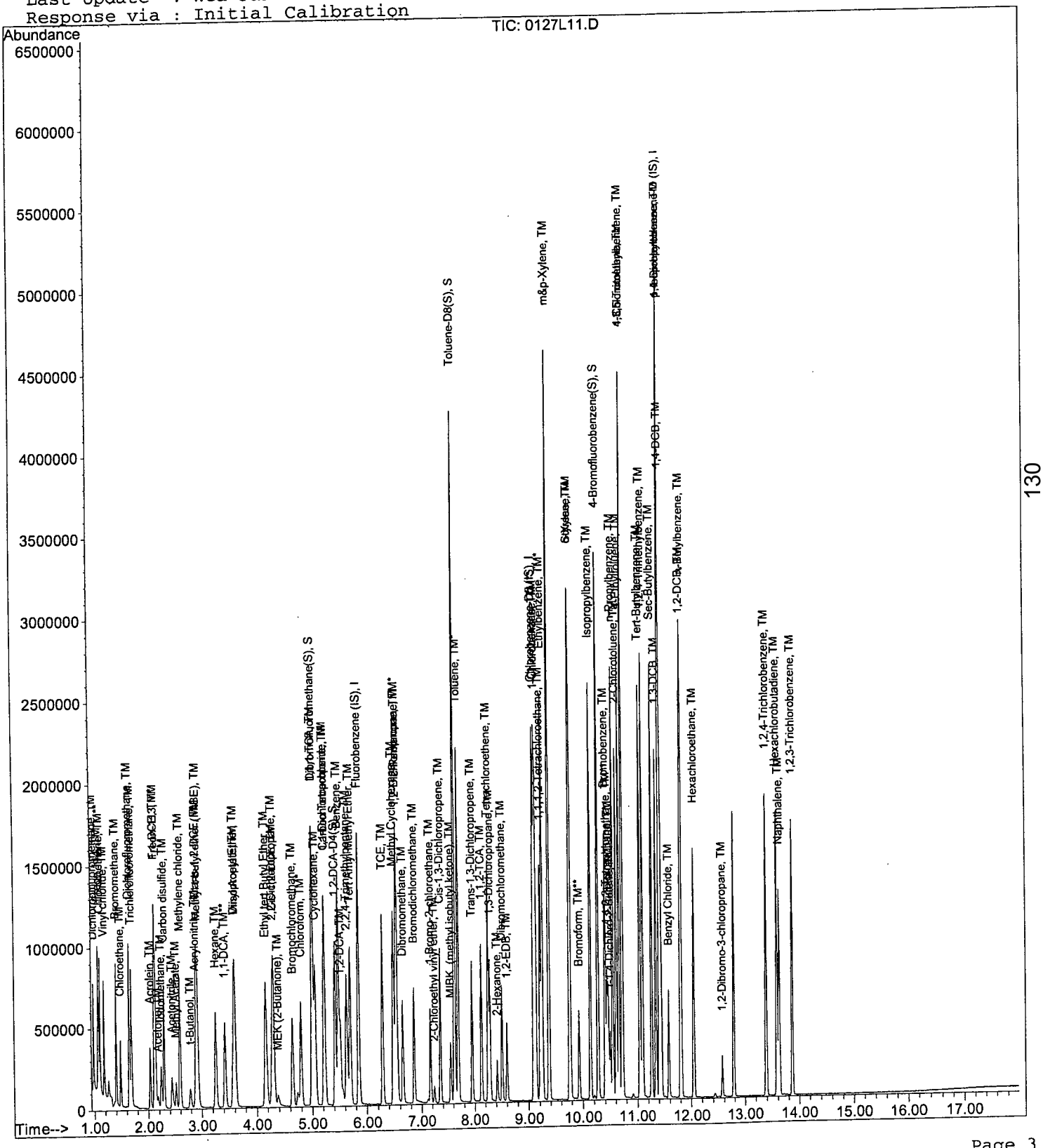
Data File : M:\LOKI\DATA\150127\0127L11.D
Acq On : 27 Jan 15 13:28
Sample : 20ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L12.D
Acq On : 27 Jan 15 13:56
Sample : 40ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	848768	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	849024	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	518720	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	1031219	52.10496 ppb	0.00
Spiked Amount 22.395			Recovery	= 232.661%	
38) 1,2-DCA-D4(S)	5.42	65	941943	48.95088 ppb	0.00
Spiked Amount 21.127			Recovery	= 231.704%	
58) Toluene-D8(S)	7.62	98	3601537	53.16565 ppb	0.00
Spiked Amount 23.536			Recovery	= 225.894%	
66) 4-Bromofluorobenzene(S)	10.27	95	1339025	55.08965 ppb	0.00
Spiked Amount 23.661			Recovery	= 232.835%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	644772	37.09356 ppb		98
3) Freon 114	1.07	85	668844	40.07253 ppb		99
4) Chloromethane	1.10	50	778647	34.87925 ppb		99
5) Vinyl chloride	1.18	62	803190	36.42872 ppb		99
6) Bromomethane	1.40	94	551269	37.46340 ppb		99
7) Chloroethane	1.48	64	401843	35.22784 ppb		99
8) Dichlorofluoromethane	1.64	67	1452017	37.73960 ppb		100
9) Trichlorofluoromethane	1.68	101	1017166	37.10292 ppb		99
10) Acrolein	2.03	56	313751	166.99498 ppb	#	97
11) Acetone	2.18	43	138174	38.63119 ppb		98
12) Freon-113	2.13	101	663556	39.28780 ppb		97
13) 1,1-DCE	2.11	61	960155	39.50252 ppb		100
14) t-Butanol	2.79	59	84120	187.45425 ppb		99
15) Acetonitrile	2.44	41	263955	172.02363 ppb		98
16) Methyl Acetate	2.52	43	375101	38.01385 ppb		98
17) Iodomethane	2.24	142	338176	40.67085 ppb		99
18) Acrylonitrile	2.87	52	153317	39.09121 ppb		98
19) Methylene chloride	2.59	84	757965	37.12939 ppb		100
20) Carbon disulfide	2.29	76	1858744	39.14723 ppb		99
21) Methyl t-butyl ether (MtBE	2.92	73	1764077	41.00726 ppb		97
22) Trans-1,2-DCE	2.90	96	725120	38.47355 ppb		100
23) Diisopropyl Ether	3.60	45	2032118	41.12622 ppb		97
24) 1,1-DCA	3.42	63	1164680	37.59131 ppb		98
25) Hexane	3.26	57	731872	41.90477 ppb		99
26) Vinyl Acetate	3.60	43	384878	35.79670 ppb	#	97
27) Ethyl tert Butyl Ether	4.17	59	1912083	41.89100 ppb		96
28) MEK (2-Butanone)	4.38	43	198937	39.43803 ppb		99
29) Cis-1,2-DCE	4.30	96	840757	39.54881 ppb		98
30) 2,2-Dichloropropane	4.28	77	335808	38.67410 ppb		99
31) Chloroform	4.80	83	1221814	36.49356 ppb		99
32) Bromochloromethane	4.64	128	392684	37.57160 ppb		93
34) 1,1,1-TCA	4.99	97	1058765	39.42252 ppb		97
35) Cyclohexane	5.05	41	489866	39.07356 ppb		94
36) 1,1-Dichloropropene	5.23	75	930911	41.69563 ppb		97
37) 2,2,4-Trimethylpentane	5.63	57	1933187	42.26724 ppb		97
39) Carbon Tetrachloride	5.21	117	960026	42.48488 ppb		98
40) Tert Amyl Methyl Ether	5.69	73	1796626	42.09045 ppb		98
41) 1,2-DCA	5.52	62	808492	36.87165 ppb		99
42) Benzene	5.48	78	2815963	37.53786 ppb		100

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L12.D
Acq On : 27 Jan 15 13:56
Sample : 40ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) TCE	6.28	95	755120	37.47683 ppb	99
44) 2-Pentanone	6.54	43	1641989	182.00241 ppb	99
45) 1,2-Dichloropropane	6.52	63	729785	38.75194 ppb	98
46) Bromodichloromethane	6.86	83	912429	39.29551 ppb	100
47) Methyl Cyclohexane	6.48	83	1094129	42.48308 ppb	97
48) Dibromomethane	6.65	93	426780	39.40219 ppb	99
49) 2-Chloroethyl vinyl ether	7.24	106	30699	40.64808 ppb	90
50) MIBK (methyl isobutyl ket	7.55	43	449519	38.82962 ppb	100
51) 1-Bromo-2-chloroethane	7.16	63	542807	41.25837 ppb	100
52) Cis-1,3-Dichloropropene	7.35	75	1130648	42.32119 ppb	99
53) Toluene	7.69	91	3117907	39.32170 ppb	99
54) Trans-1,3-Dichloropropene	7.95	75	945686	42.16755 ppb	100
55) 1,1,2-TCA	8.13	83	508632	38.88929 ppb	99
56) 2-Hexanone	8.42	43	288676	39.36925 ppb	96
59) 1,2-EDB	8.60	107	627635	39.80078 ppb	98
60) Tetrachloroethene	8.25	166	886935	39.87633 ppb	97
61) 1-Chlorohexane	9.13	91	962641	42.72690 ppb	95
62) 1,1,1,2-Tetrachloroethane	9.21	131	781710	40.01356 ppb	96
63) m&p-Xylene	9.37	106	2734510	79.33557 ppb	99
64) o-Xylene	9.76	106	1336599	42.11073 ppb	99
65) Styrene	9.78	104	2274082	44.84906 ppb	100
67) 1,3-Dichloropropane	8.29	76	1023966	39.07077 ppb	100
68) Dibromochloromethane	8.51	129	740915	41.87016 ppb	97
69) Chlorobenzene	9.12	112	2159400	38.75643 ppb	99
70) Ethylbenzene	9.25	91	3471801	40.16059 ppb	99
71) Bromoform	9.93	173	506532	41.72089 ppb	98
73) Isopropylbenzene	10.14	105	3374751	39.78670 ppb	98
74) 1,1,2,2-Tetrachloroethane	10.44	83	713665	35.53260 ppb	98
75) 1,2,3-Trichloropropane	10.46	110	224142	36.76610 ppb	91
76) t-1,4-Dichloro-2-Butene	10.50	53	154314	41.17309 ppb	98
77) Bromobenzene	10.40	156	989385	37.91858 ppb	98
78) n-Propylbenzene	10.54	91	3957199	40.45419 ppb	100
79) 4-Ethyltoluene	10.66	105	3446977	42.00434 ppb	99
80) 2-Chlorotoluene	10.61	91	2336538	37.45471 ppb	99
81) 1,3,5-Trimethylbenzene	10.73	105	2971369	40.92500 ppb	98
82) 4-Chlorotoluene	10.72	91	2735495	39.33268 ppb	99
83) Tert-Butylbenzene	11.04	119	2560423	41.34658 ppb	98
84) 1,2,4-Trimethylbenzene	11.09	105	3027519	41.48167 ppb	99
85) Sec-Butylbenzene	11.26	105	3680169	41.70945 ppb	100
86) p-Isopropyltoluene	11.42	119	3187310	41.53351 ppb	99
87) Benzyl Chloride	11.58	91	924166	37.46505 ppb	98
88) 1,3-DCB	11.34	146	1808775	37.33621 ppb	100
89) 1,4-DCB	11.44	146	1844505	36.77202 ppb	98
90) n-Butylbenzene	11.81	91	2875028	41.36473 ppb	98
91) 1,2-DCB	11.80	146	1738200	37.28510 ppb	98
92) Hexachloroethane	12.05	117	561062	37.95484 ppb	98
93) 1,2-Dibromo-3-chloropropan	12.56	157	159600	41.62896 ppb	99
94) 1,2,4-Trichlorobenzene	13.39	180	1317912	37.94731 ppb	99
95) Hexachlorobutadiene	13.58	225	726096	38.73149 ppb	95
96) Naphthalene	13.62	128	1623552	41.05107 ppb	100
97) 1,2,3-Trichlorobenzene	13.87	180	862208	39.05670 ppb	99

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

Quantitation Report

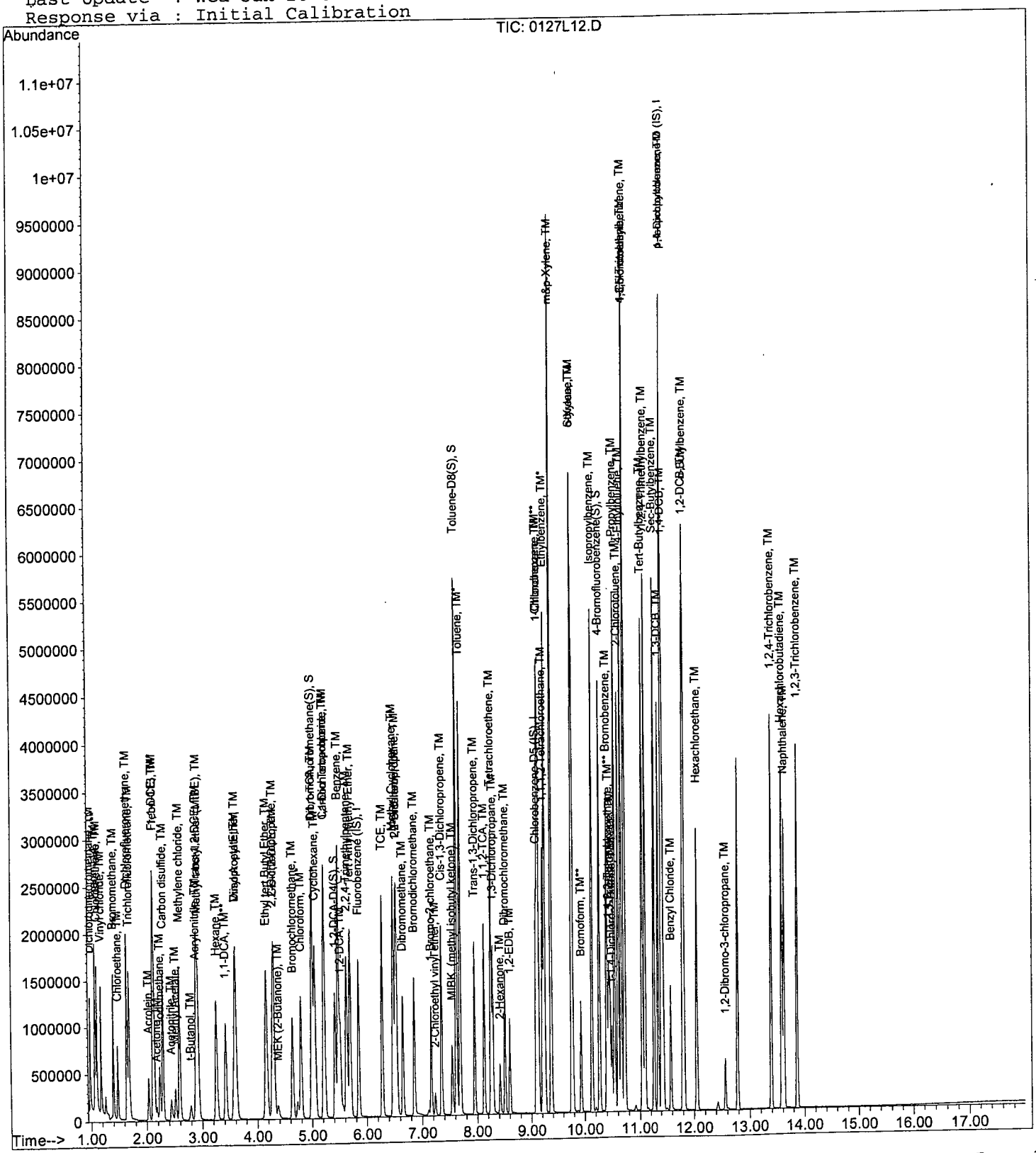
Data File : M:\LOKI\DATA\150127\0127L12.D
Acq On : 27 Jan 15 13:56
Sample : 40ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L13.D
Acq On : 27 Jan 15 14:24
Sample : 100ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	848256	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	847104	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	546496	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	2409329	121.81095 ppb	0.00
Spiked Amount 22.395			Recovery	= 543.916%	
38) 1,2-DCA-D4(S)	5.42	65	2166273	112.64479 ppb	0.00
Spiked Amount 21.127			Recovery	= 533.193%	
58) Toluene-D8(S)	7.62	98	8496265	125.70557 ppb	0.00
Spiked Amount 23.536			Recovery	= 534.105%	
66) 4-Bromofluorobenzene(S)	10.27	95	3213719	132.51726 ppb	0.00
Spiked Amount 23.661			Recovery	= 560.077%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	1698094	97.74987 ppb		99
3) Freon 114	1.07	85	1689876	101.30684 ppb		97
4) Chloromethane	1.10	50	2059873	92.32706 ppb		98
5) Vinyl chloride	1.18	62	2055850	93.29945 ppb		100
6) Bromomethane	1.40	94	1253738	85.25355 ppb		99
7) Chloroethane	1.47	64	547461	48.02252 ppb		98
8) Dichlorofluoromethane	1.64	67	3574016	92.94889 ppb		99
9) Trichlorofluoromethane	1.67	101	2645992	96.57546 ppb		100
10) Acrolein	2.04	56	361223	192.37815 ppb		97
11) Acetone	2.19	43	352860	100.74584 ppb		95
12) Freon-113	2.12	101	1639442	97.12661 ppb		98
13) 1,1-DCE	2.11	61	2380906	98.01392 ppb		99
14) t-Butanol	2.81	59	101064	225.34845 ppb		96
15) Acetonitrile	2.44	41	318504	207.69936 ppb		97
16) Methyl Acetate	2.52	43	987687	100.15556 ppb		98
17) Iodomethane	2.23	142	837056	100.10952 ppb		99
18) Acrylonitrile	2.87	52	387077	98.75253 ppb		99
19) Methylene chloride	2.59	84	1856803	91.01155 ppb		99
20) Carbon disulfide	2.28	76	4712963	99.32018 ppb		99
21) Methyl t-butyl ether (MtBE	2.92	73	4466278	103.88457 ppb		98
22) Trans-1,2-DCE	2.89	96	1839428	97.65562 ppb		99
23) Diisopropyl Ether	3.60	45	5128740	103.85864 ppb		95
24) 1,1-DCA	3.42	63	2808992	90.71799 ppb		99
25) Hexane	3.25	57	1845388	105.72510 ppb		97
26) Vinyl Acetate	3.60	43	926574	86.23074 ppb	#	95
27) Ethyl tert Butyl Ether	4.17	59	4906383	107.55671 ppb		98
28) MEK (2-Butanone)	4.38	43	506105	100.30090 ppb		99
29) Cis-1,2-DCE	4.30	96	2091253	98.43094 ppb		98
30) 2,2-Dichloropropane	4.28	77	826944	95.29440 ppb		100
31) Chloroform	4.80	83	3029010	90.52611 ppb		99
32) Bromochloromethane	4.64	128	964287	92.31767 ppb		95
34) 1,1,1-TCA	4.99	97	2631159	98.02887 ppb		96
35) Cyclohexane	5.05	41	1197334	95.56152 ppb		90
36) 1,1-Dichloropropene	5.23	75	2317070	103.84453 ppb		97
37) 2,2,4-Trimethylpentane	5.63	57	4758746	104.10813 ppb	#	88
39) Carbon Tetrachloride	5.21	117	2412166	106.81215 ppb		98
40) Tert Amyl Methyl Ether	5.70	73	4555174	106.78073 ppb		96
41) 1,2-DCA	5.52	62	2000297	91.27954 ppb		99
42) Benzene	5.48	78	6876352	91.71973 ppb		100

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L13.D
Acq On : 27 Jan 15 14:24
Sample : 100ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:37 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	1884579	93.58868	ppb	100
44) 2-Pentanone	6.54	43	1877930	208.28037	ppb	99
45) 1,2-Dichloropropane	6.52	63	1795979	95.42492	ppb	98
46) Bromodichloromethane	6.86	83	2306431	99.39085	ppb	99
47) Methyl Cyclohexane	6.48	83	2755771	107.06627	ppb	96
48) Dibromomethane	6.65	93	1043194	96.37034	ppb	98
49) 2-Chloroethyl vinyl ether	7.24	106	95587	99.95271	ppb	88
50) MIBK (methyl isobutyl ket	7.55	43	1111702	96.08719	ppb	98
51) 1-Bromo-2-chloroethane	7.16	63	1348096	102.52965	ppb	99
52) Cis-1,3-Dichloropropene	7.35	75	2926681	109.61447	ppb	99
53) Toluene	7.69	91	7670309	96.79303	ppb	99
54) Trans-1,3-Dichloropropene	7.95	75	2436717	108.71728	ppb	99
55) 1,1,2-TCA	8.13	83	1273584	97.43523	ppb	98
56) 2-Hexanone	8.42	43	742992	101.38943	ppb	95
59) 1,2-EDB	8.60	107	1574805	100.09087	ppb	98
60) Tetrachloroethene	8.25	166	2211944	99.98992	ppb	98
61) 1-Chlorohexane	9.13	91	2480865	110.36297	ppb	94
62) 1,1,1,2-Tetrachloroethane	9.21	131	2009083	103.07246	ppb	98
63) m&p-Xylene	9.37	106	6897801	200.27025	ppb	94
64) o-Xylene	9.76	106	3418586	107.94968	ppb	98
65) Styrene	9.78	104	5762790	113.91037	ppb	99
67) 1,3-Dichloropropane	8.29	76	2533536	96.88950	ppb	100
68) Dibromochloromethane	8.51	129	1939539	109.85453	ppb	97
69) Chlorobenzene	9.12	112	5417626	97.45474	ppb	99
70) Ethylbenzene	9.25	91	8663145	100.43940	ppb	99
71) Bromoform	9.93	173	1340662	110.67493	ppb	99
73) Isopropylbenzene	10.14	105	8541969	95.58731	ppb	99
74) 1,1,2,2-Tetrachloroethane	10.44	83	1751871	82.79054	ppb	99
75) 1,2,3-Trichloropropane	10.46	110	554937	86.40005	ppb	92
76) t-1,4-Dichloro-2-Butene	10.50	53	393094	99.55214	ppb	96
77) Bromobenzene	10.40	156	2491177	90.62277	ppb	97
78) n-Propylbenzene	10.54	91	9800036	95.09317	ppb	99
79) 4-Ethyltoluene	10.66	105	8552759	98.92544	ppb	98
80) 2-Chlorotoluene	10.61	91	5769580	87.78571	ppb	99
81) 1,3,5-Trimethylbenzene	10.73	105	7379135	96.46805	ppb	98
82) 4-Chlorotoluene	10.72	91	6710664	91.58600	ppb	98
83) Tert-Butylbenzene	11.04	119	6475544	99.25449	ppb	99
84) 1,2,4-Trimethylbenzene	11.09	105	7540766	98.06880	ppb	99
85) Sec-Butylbenzene	11.26	105	9180454	98.75903	ppb	99
86) p-Isopropyltoluene	11.41	119	8007411	99.04042	ppb	99
87) Benzyl Chloride	11.58	91	2563416	98.63736	ppb	97
88) 1,3-DCB	11.34	146	4509943	88.36143	ppb	99
89) 1,4-DCB	11.43	146	4537930	85.86999	ppb	98
90) n-Butylbenzene	11.81	91	7275700	99.35939	ppb	97
91) 1,2-DCB	11.80	146	4376982	89.11614	ppb	99
92) Hexachloroethane	12.05	117	1504048	96.57483	ppb	100
93) 1,2-Dibromo-3-chloropropan	12.56	157	452341	111.98881	ppb	98
94) 1,2,4-Trichlorobenzene	13.39	180	3778743	101.03279	ppb	100
95) Hexachlorobutadiene	13.58	225	1946275	98.54177	ppb	97
96) Naphthalene	13.62	128	4683776	99.89910	ppb	99
97) 1,2,3-Trichlorobenzene	13.87	180	2384896	100.75863	ppb	98

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

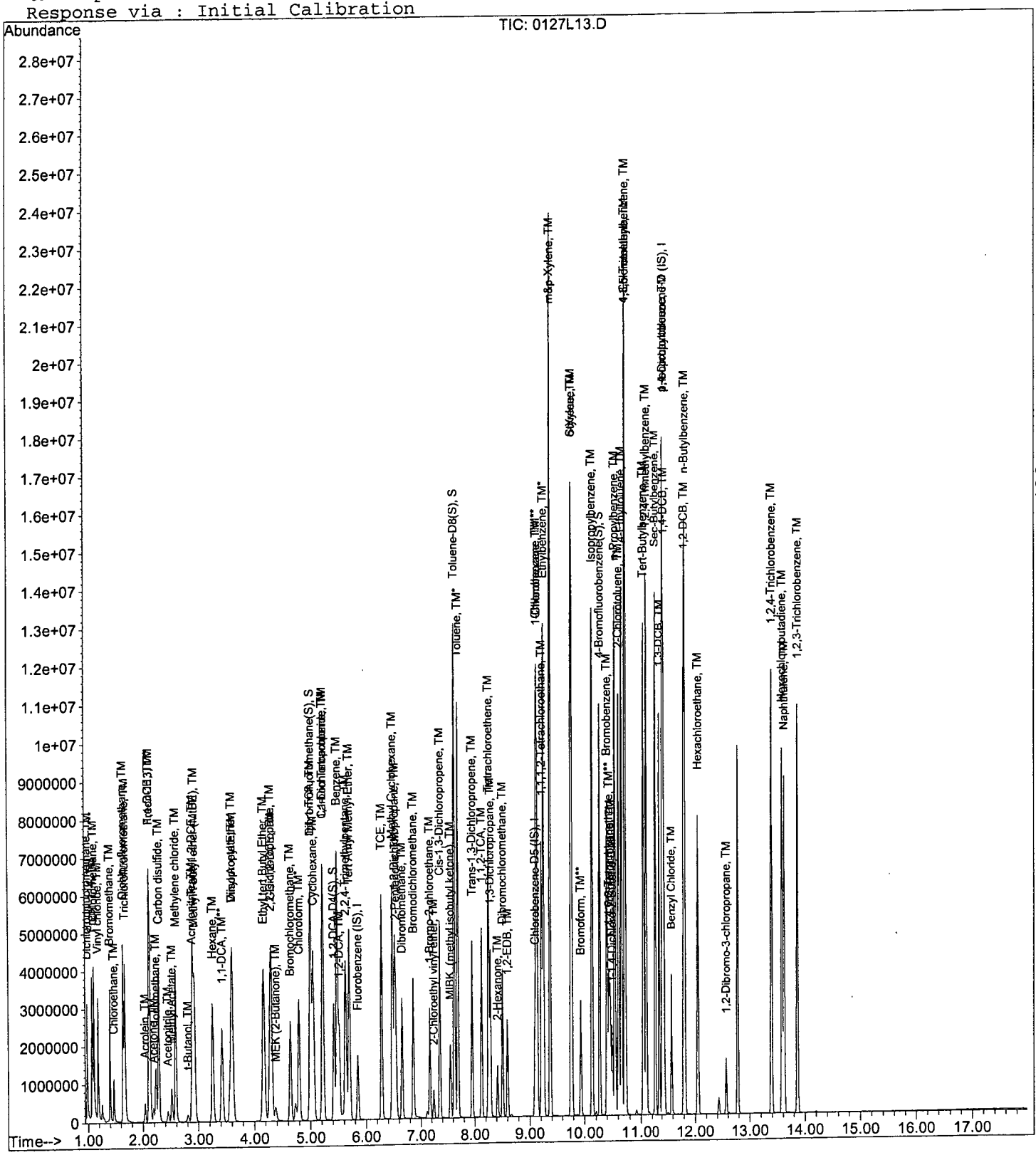
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L13.D
Acq On : 27 Jan 15 14:24
Sample : 100ug /L Vol Std 01-27-15
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

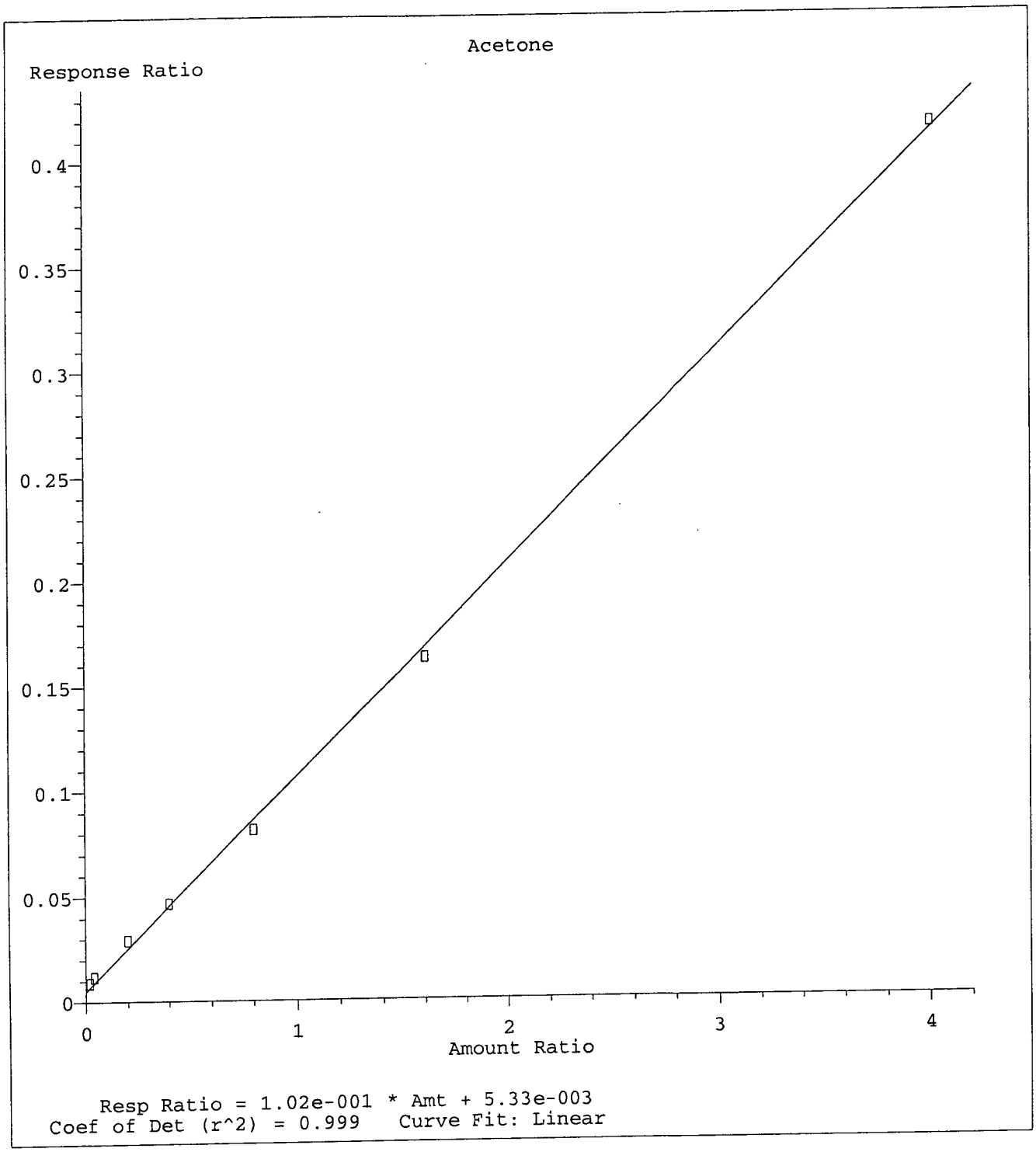
Vial: 12
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:37 2015 Quant Results File: LCREDW.RES

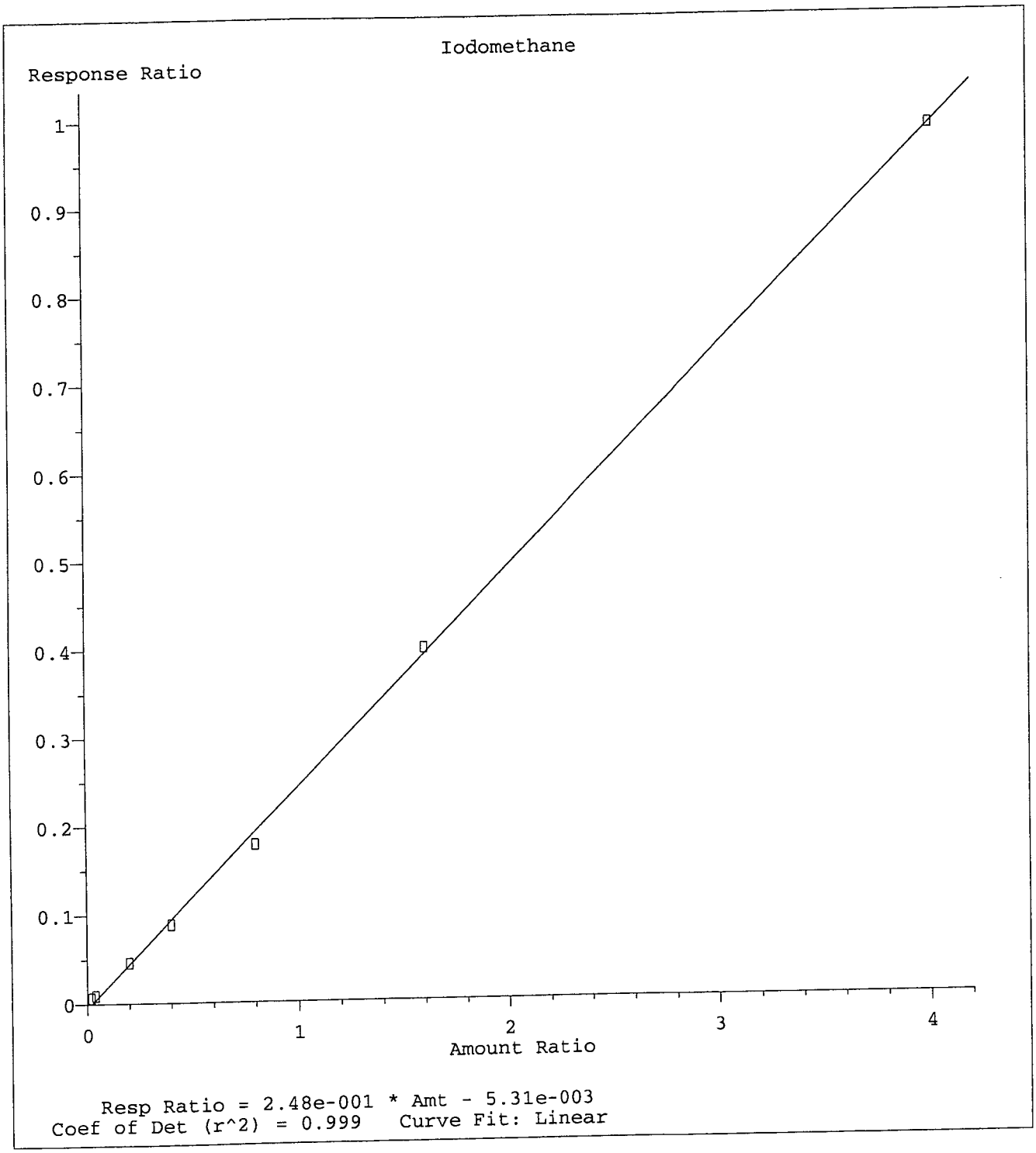
Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



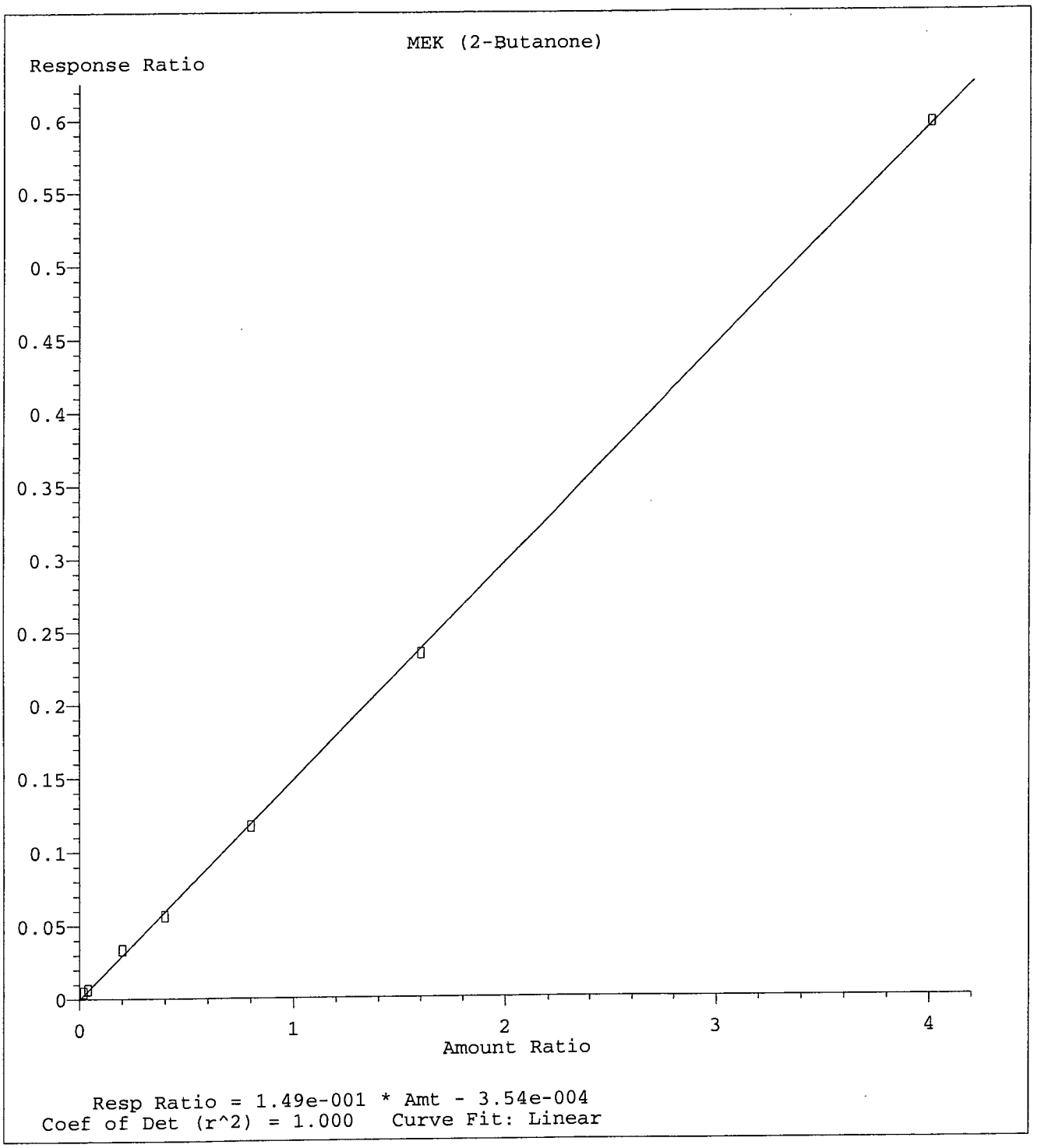
136



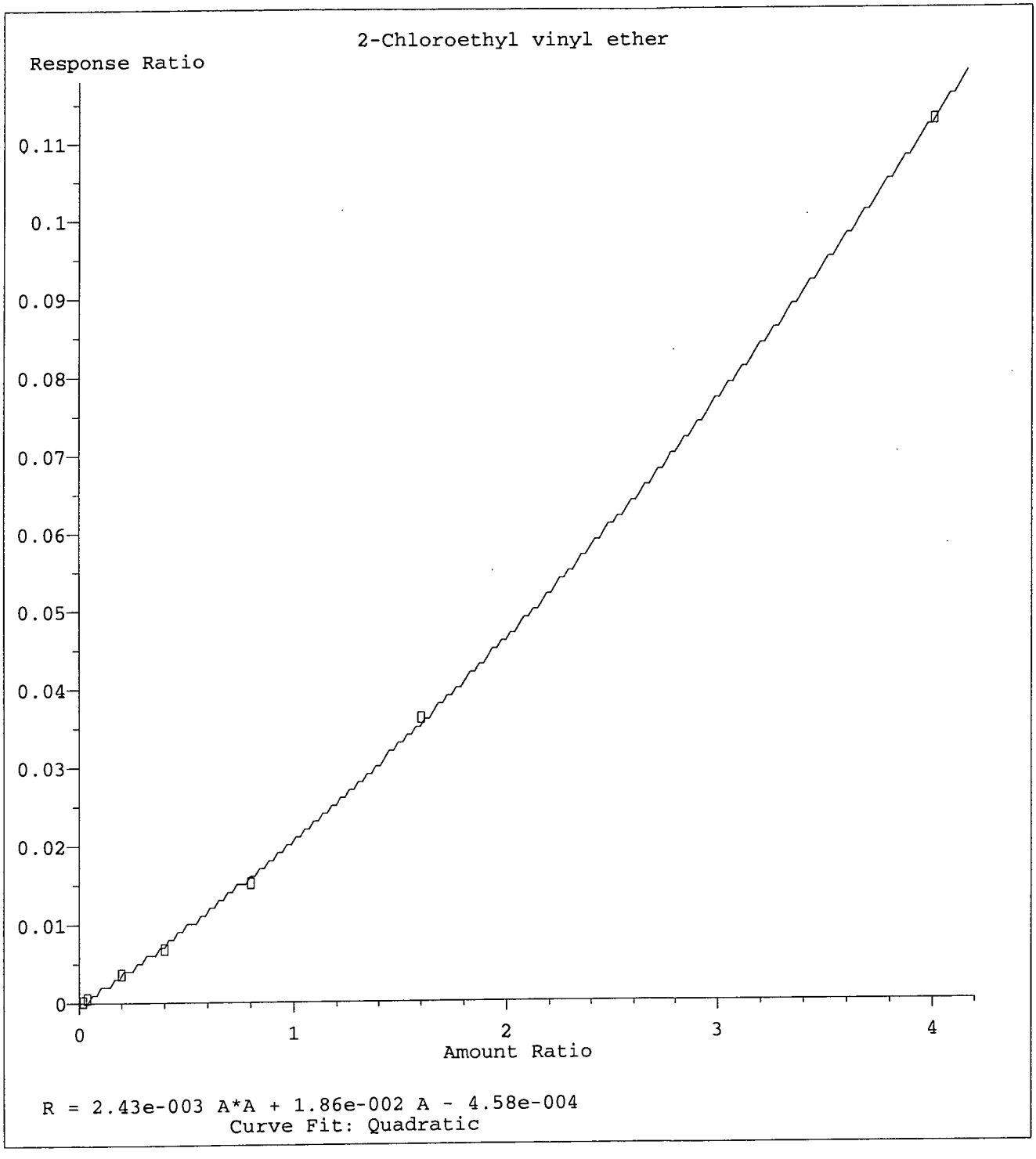
Method Name: M:\LOKI\DATA\150127\LCREDW.M
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



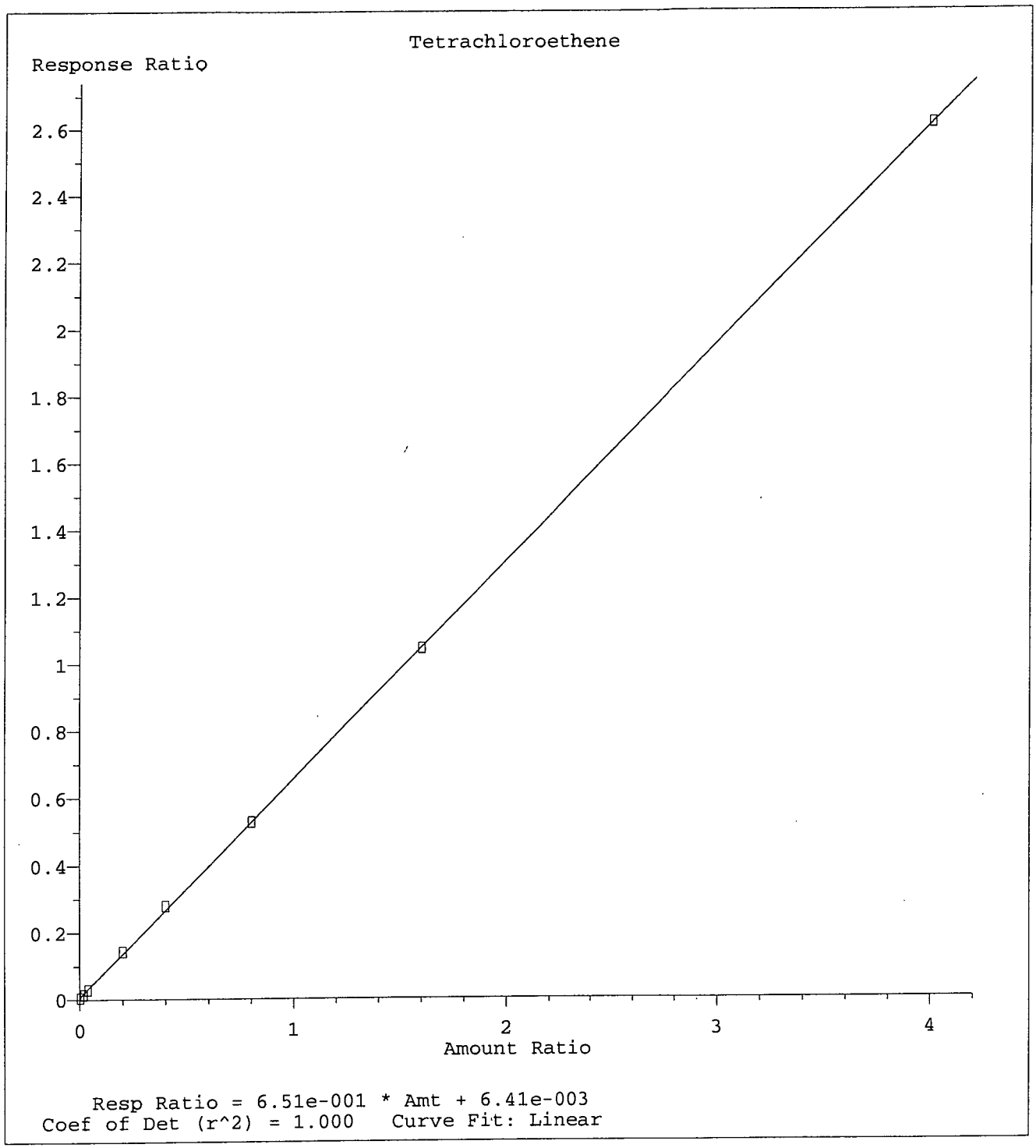
Method Name: M:\LOKI\DATA\150127\LCREDW.M
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



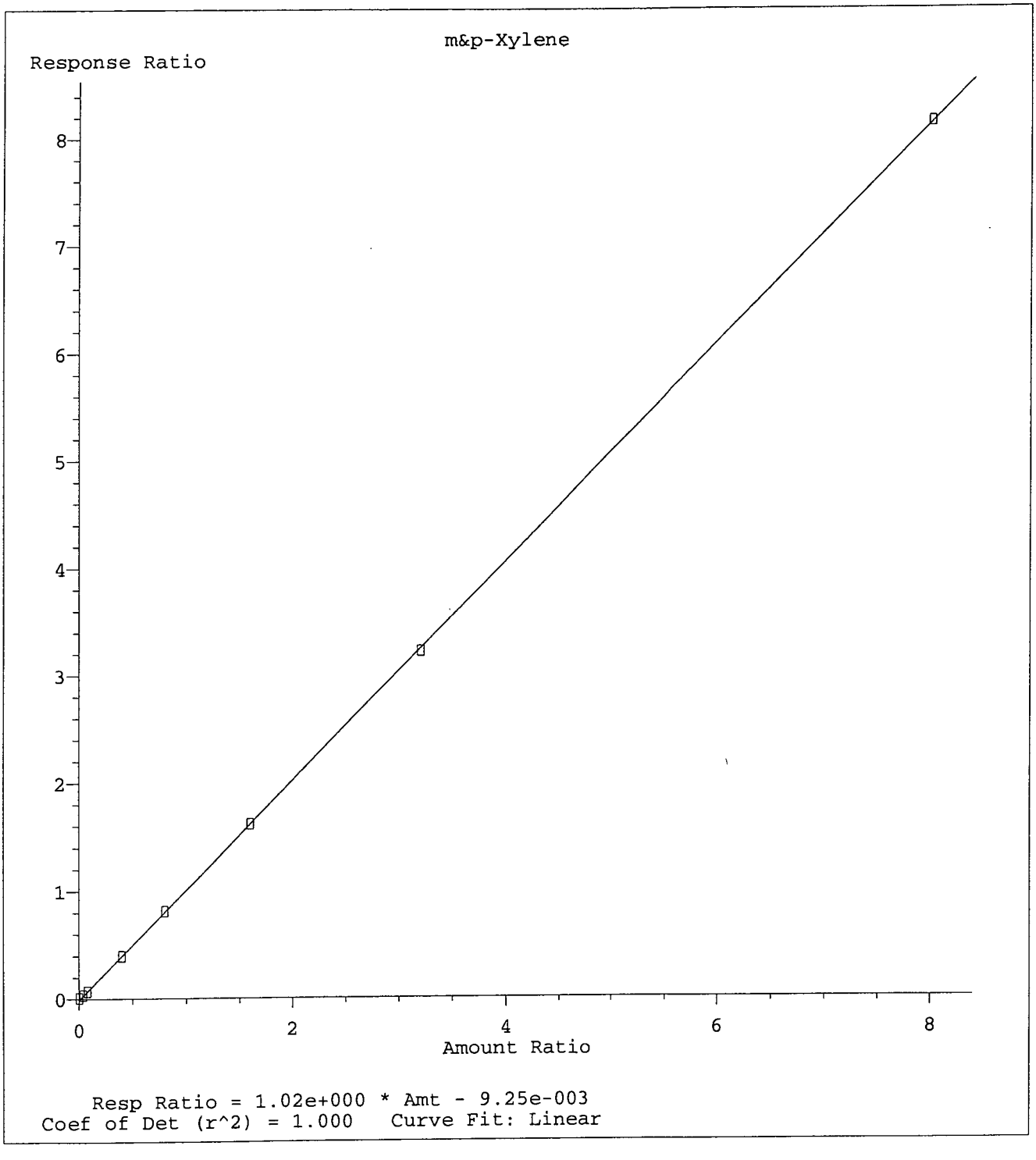
Method Name: M:\LOKI\DATA\150127\LCREDW.M
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



Method Name: M:\LOKI\DATA\150127\LCREDW.M
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



Method Name: M:\LOKI\DATA\150127\LCREDW.M
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



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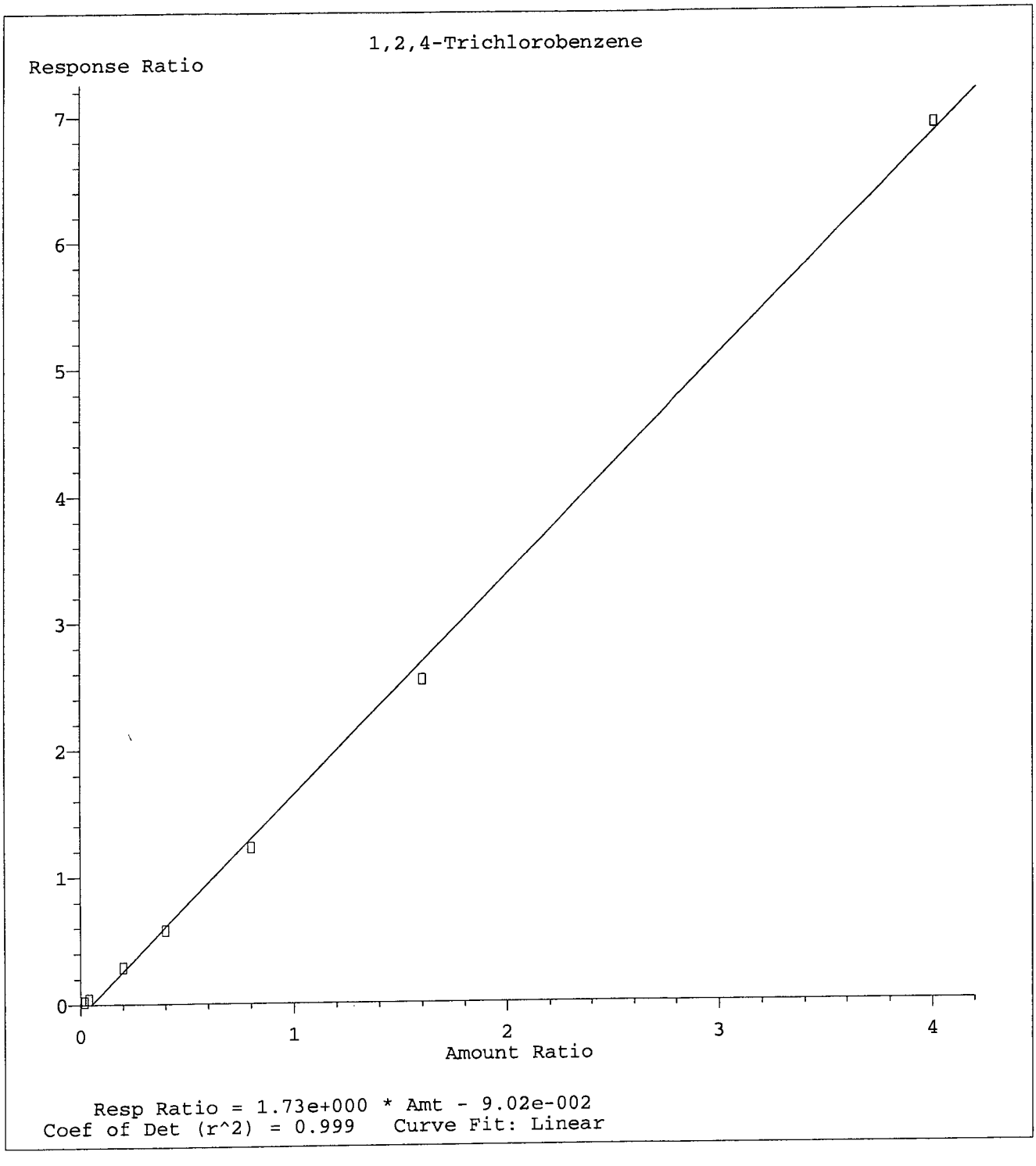
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



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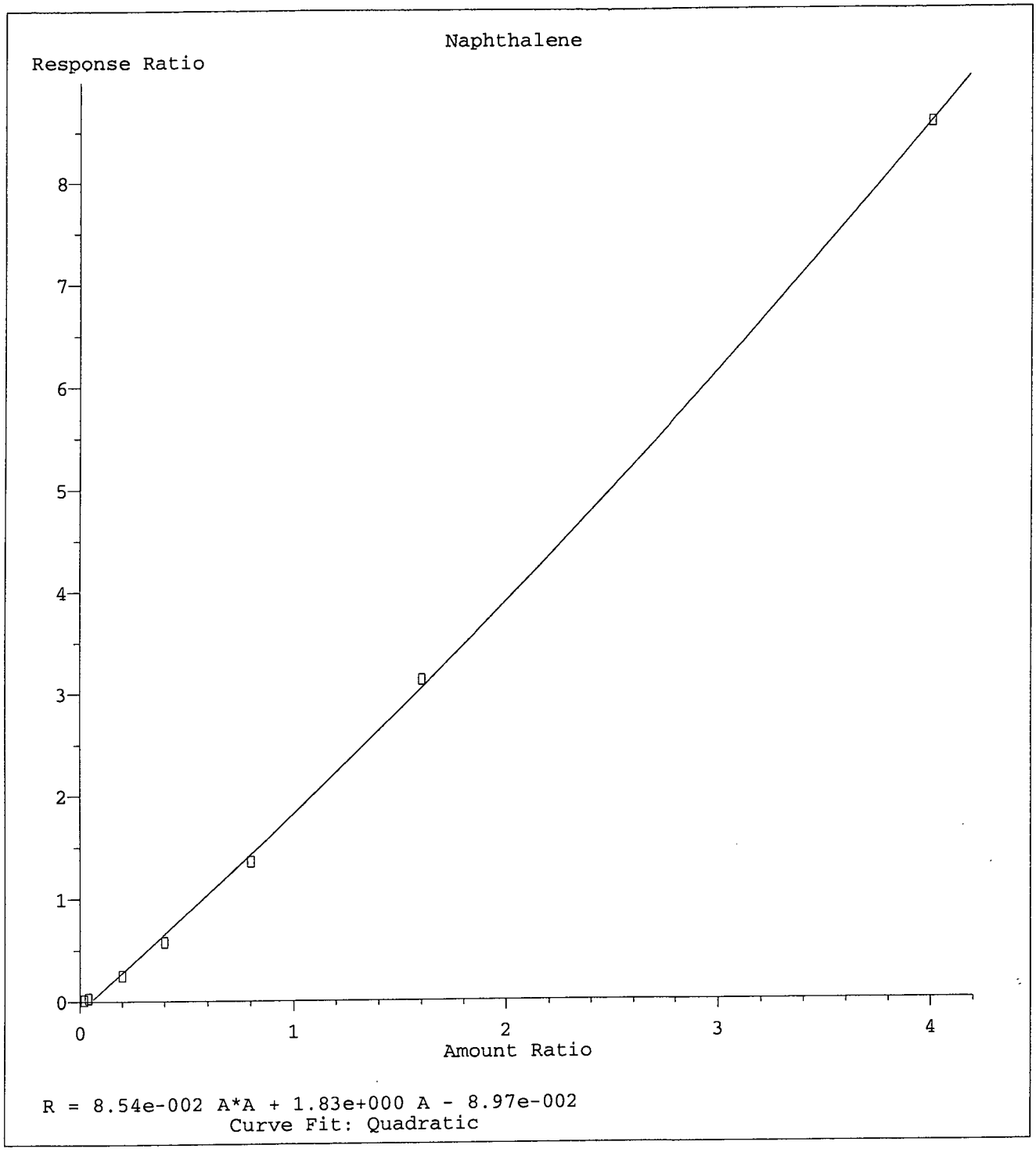
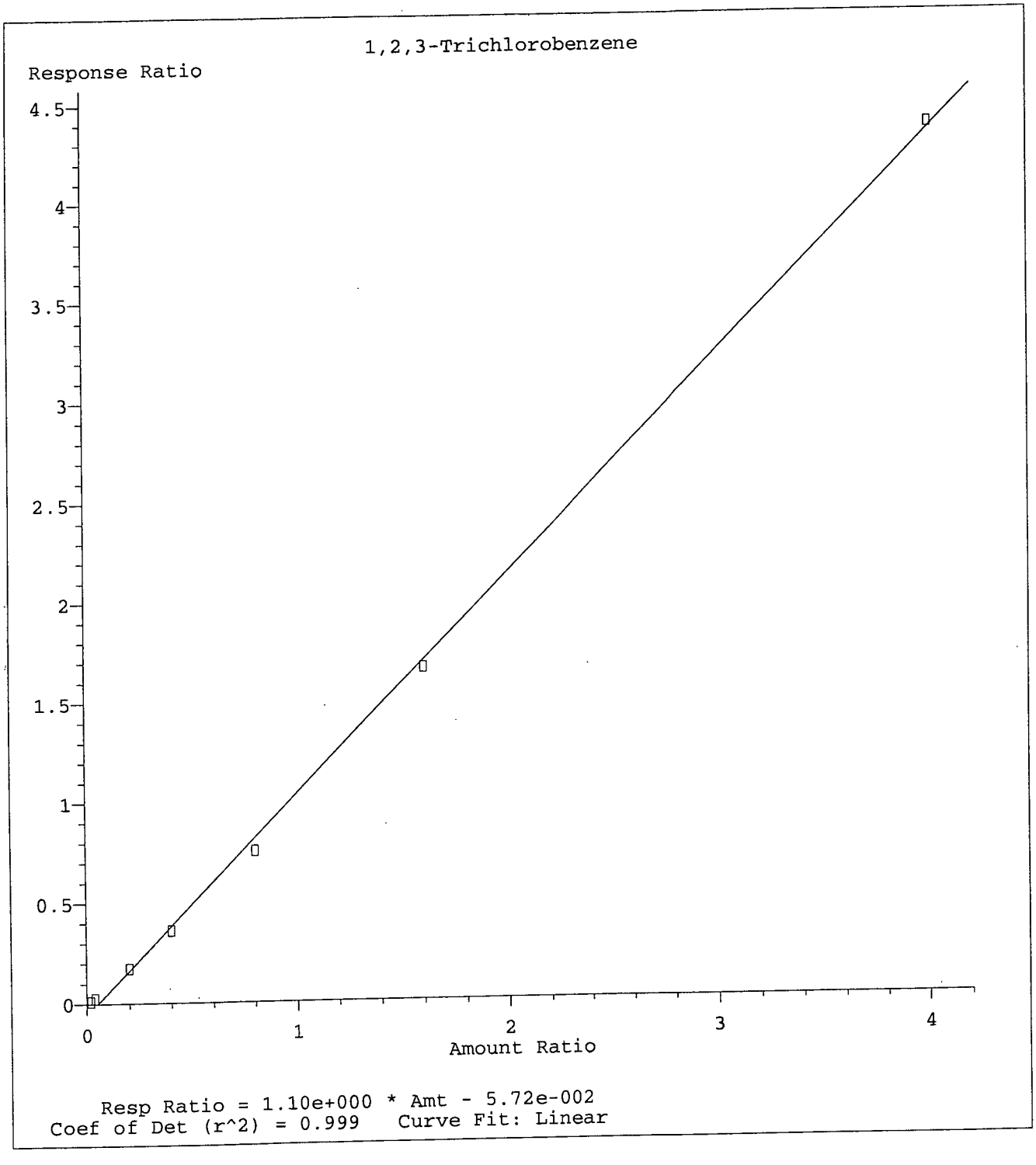
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



Method Name: M:\LOKI\DATA\150127\LCREDW.M
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015



Method Name: M:\LOKI\DATA\150127\LCREDW.M
Calibration Table Last Updated: Wed Jan 28 08:58:36 2015

VOLATILE ORGANIC ANALYSIS BY EPA METHOD 8260B

Form 7

Continuing Calibration

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

SDG No:
Date Analyzed: 01/27/15
Instrument: Loki
Initial Cal. Date: 01/27/15
Data File: 0127L17.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.5119	0.5309	3.7	TM	
3	TM	Freon 114	0.4999	0.5088	1.8	TM	
4	TM**	Chloromethane	0.6575	0.5970	9.2	TM**	
5	TM*	Vinyl chloride	0.6530	0.6210	4.9	TM*	
6	TM	Bromomethane	0.4213	0.4261	1.1	TM	
7	TM	Chloroethane	0.3309	0.3168	4.3	TM	
8	TM	Dichlorofluoromethane	1.126	1.082	4.0	TM	
9	TM	Trichlorofluoromethane	0.8137	0.8117	0.24	TM	
10	TM	Acrolein	0.0528	0.0546	3.3	TM	
11	TML	Acetone	0.1869	0.1175	37	TML	2.2
12	TM	Freon-113	0.4980	0.5054	1.5	TM	
13	TM*	1,1-DCE	0.7141	0.7156	0.22	TM*	
14	TM	t-Butanol	0.0129	0.0146	13	TM	
15	TM	Acetonitrile	0.0452	0.0452	0.01	TM	
16	TM	Methyl Acetate	0.2906	0.2778	4.4	TM	
17	TML	Iodomethane	0.2471	0.1800	27	TML	22 nt
18	TM	Acrylonitrile	0.1147	0.1127	1.7	TM	
19	TM	Methylene chloride	0.6013	0.5754	4.3	TM	
20	TM	Carbon disulfide	1.384	1.331	3.9	TM	
21	TM	Methyl t-butyl ether (MtBE)	1.278	1.277	0.02	TM	
22	TM	Trans-1,2-DCE	0.5486	0.5427	1.1	TM	
23	TM	Diisopropyl Ether	1.457	1.440	1.2	TM	
24	TM**	1,1-DCA	0.8973	0.8858	1.3	TM**	
25	TM	Hexane	0.5231	0.5270	0.75	TM	
26	TM	Vinyl Acetate	0.3093	0.2969	4.0	TM	
27	TM	Ethyl tert Butyl Ether	1.361	1.347	1.0	TM	
28	TML	MEK (2-Butanone)	0.1612	0.1518	5.9	TML	2.6
29	TM	Cis-1,2-DCE	0.6220	0.5920	4.8	TM	
30	TM	2,2-Dichloropropane	0.2563	0.2505	2.3	TM	
31	TM*	Chloroform	0.9861	0.9148	7.2	TM*	
32	TM	Bromochloromethane	0.3076	0.2980	3.1	TM	
33	S	Dibromofluoromethane(S)	0.5760	0.5101	11	S	
34	TM	1,1,1-TCA	0.7866	0.7789	0.99	TM	
35	TM	Cyclohexane	0.3670	0.3455	5.8	TM	
36	TM	1,1-Dichloropropene	0.6638	0.6666	0.41	TM	
37	TM	2,2,4-Trimethylpentane	1.358	1.421	4.7	TM	
38	S	1,2-DCA-D4(S)	0.5634	0.4639	18	S	
39	TM	Carbon Tetrachloride	0.6696	0.6956	3.9	TM	
40	TM	Tert Amyl Methyl Ether	1.278	1.310	2.5	TM	
		Average			5.3		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/27/15
Instrument: Loki
Cal. Date: 01/27/15
Data File: 0127L17.D

		Compound	MEAN	CCRF	%D		%Drift
41	TM	1,2-DCA	0.6489	0.6272	3.3	TM	
42	TM	Benzene	2.198	2.102	4.4	TM	
43	TM	TCE	0.5920	0.5464	7.7	TM	
44	TM	2-Pentanone	0.2657	0.2850	7.2	TM	
45	TM*	1,2-Dichloropropane	0.5545	0.5414	2.4	TM*	
46	TM	Bromodichloromethane	0.6755	0.6481	4.1	TM	
47	TM	Methyl Cyclohexane	0.7688	0.7707	0.24	TM	
48	TM	Dibromomethane	0.3223	0.3213	0.30	TM	
49	TMQ	2-Chloroethyl vinyl ether	0.0180	0.0001	99	TMQ	93 nt
50	TM	MIBK (methyl isobutyl ketone)	0.3410	0.3324	2.5	TM	
51	TM	1-Bromo-2-chloroethane	0.3940	0.3955	0.39	TM	
52	TM	Cis-1,3-Dichloropropene	0.7976	0.7773	2.5	TM	
53	TM*	Toluene	2.354	2.283	3.0	TM*	
54	TM	Trans-1,3-Dichloropropene	0.6734	0.6594	2.1	TM	
55	TM	1,1,2-TCA	0.3850	0.3779	1.8	TM	
56	TM	2-Hexanone	0.2126	0.2222	4.5	TM	
57	I	Chlorobenzene-D5 (IS)	ISTD			I	
58	S	Toluene-D8(S)	1.991	1.853	6.9	S	
59	TM	1,2-EDB	0.4637	0.4626	0.24	TM	
60	TML	Tetrachloroethene	0.7307	0.6751	7.6	TML	1.2
61	TM	1-Chlorohexane	0.6732	0.6833	1.5	TM	
62	TM	1,1,1,2-Tetrachloroethane	0.5827	0.5835	0.15	TM	
63	TML	m&p-Xylene	1.106	0.9968	9.9	TML	0.92
64	TM	o-Xylene	0.9553	0.9420	1.4	TM	
65	TM	Styrene	1.529	1.592	4.1	TM	
66	S	4-Bromofluorobenzene(S)	0.7134	0.7226	1.3	S	
67	TM	1,3-Dichloropropane	0.7708	0.7768	0.78	TM	
68	TM	Dibromochloromethane	0.5206	0.5233	0.53	TM	
69	TM**	Chlorobenzene	1.640	1.607	2.0	TM**	
70	TM*	Ethylbenzene	2.549	2.535	0.54	TM*	
71	TM**	Bromoform	0.3573	0.3582	0.27	TM**	
72	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
73	TM	Isopropylbenzene	4.080	4.045	0.84	TM	
74	TM**	1,1,2,2-Tetrachloroethane	0.9535	0.9349	1.9	TM**	
75	TM	1,2,3-Trichloropropane	0.2867	0.2937	2.5	TM	
76	TM	t-1,4-Dichloro-2-Butene	0.1806	0.1830	1.3	TM	
77	TM	Bromobenzene	1.261	1.199	4.9	TM	
78	TM	n-Propylbenzene	4.752	4.857	2.2	TM	
79	TM	4-Ethyltoluene	4.005	4.134	3.2	TM	
80	TM	2-Chlorotoluene	2.958	2.907	1.7	TM	
		Average			5.3		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/27/15
Instrument: Loki
Cal. Date: 01/27/15
Data File: 0127L17.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	1,3,5-Trimethylbenzene	3.540	3.643	2.9	TM	
82	TM	4-Chlorotoluene	3.371	3.365	0.19	TM	
83	TM	Tert-Butylbenzene	3.014	3.071	1.9	TM	
84	TM	1,2,4-Trimethylbenzene	3.543	3.617	2.1	TM	
85	TM	Sec-Butylbenzene	4.310	4.440	3.0	TM	
86	TM	p-Isopropyltoluene	3.734	3.795	1.6	TM	
87	TM	Benzyl Chloride	1.195	1.152	3.6	TM	
88	TM	1,3-DCB	2.313	2.234	3.4	TM	
89	TM	1,4-DCB	2.392	2.292	4.2	TM	
90	TM	n-Butylbenzene	3.379	3.404	0.72	TM	
91	TM	1,2-DCB	2.259	2.138	5.4	TM	
92	TM	Hexachloroethane	0.7014	0.6918	1.4	TM	
93	TM	1,2-Dibromo-3-chloropropane	0.1831	0.1848	0.95	TM	
94	TML	1,2,4-Trichlorobenzene	1.404	1.421	1.2	TML	5.0
95	TM	Hexachlorobutadiene	0.8944	0.8844	1.1	TM	
96	TMQ	Naphthalene	1.403	1.388	1.1	TMQ	13
97	TML	1,2,3-Trichlorobenzene	0.8627	0.8939	3.6	TML	5.6
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			2.3		

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L17.D
Acq On : 27 Jan 15 16:17
Sample : 10ug /L Std 1-27-15(CCV)
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 10:00 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	862848	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	841088	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	499392	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	440099	22.13867 ppb	0.00
Spiked Amount 22.395			Recovery = 98.856%		
38) 1,2-DCA-D4(S)	5.42	65	400271	20.58616 ppb	0.00
Spiked Amount 21.127			Recovery = 97.442%		
58) Toluene-D8(S)	7.62	98	1558881	23.27151 ppb	0.00
Spiked Amount 23.536			Recovery = 98.879%		
66) 4-Bromofluorobenzene(S)	10.27	95	607737	25.32247 ppb	0.00
Spiked Amount 23.661			Recovery = 107.022%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	183242	10.37186 ppb	98
3) Freon 114	1.07	85	175615	10.17759 ppb	95
4) Chloromethane	1.10	50	206053	9.07946 ppb	94
5) Vinyl chloride	1.18	62	214319	9.50895 ppb	100
6) Bromomethane	1.40	94	147081	10.11438 ppb	99
7) Chloroethane	1.49	64	109335	9.57221 ppb	100
8) Dichlorofluoromethane	1.64	67	373326	9.60234 ppb	99
9) Trichlorofluoromethane	1.69	101	280163	9.97608 ppb	99
10) Acrolein	2.03	56	235490	129.16641 ppb	95
11) Acetone	2.18	43	40557	10.22457 ppb	97
12) Freon-113	2.13	101	174440	10.14854 ppb	97
13) 1,1-DCE	2.11	61	246997	10.02201 ppb	97
14) t-Butanol	2.78	59	63040	141.74630 ppb	99
15) Acetonitrile	2.44	41	194972	124.99285 ppb	97
16) Methyl Acetate	2.52	43	95880	9.55821 ppb	94
17) Iodomethane	2.24	142	62136	7.79863 ppb	98
18) Acrylonitrile	2.87	52	38898	9.82779 ppb	99
19) Methylene chloride	2.59	84	198605	9.57003 ppb	100
20) Carbon disulfide	2.29	76	459209	9.61030 ppb	99
21) Methyl t-butyl ether (MtBE	2.92	73	440884	9.99803 ppb	98
22) Trans-1,2-DCE	2.89	96	187318	9.89249 ppb	94
23) Diisopropyl Ether	3.60	45	496890	9.88046 ppb	99
24) 1,1-DCA	3.42	63	305737	9.87205 ppb	98
25) Hexane	3.26	57	181893	10.07484 ppb	99
26) Vinyl Acetate	3.57	43	102485	9.60127 ppb #	76
27) Ethyl tert Butyl Ether	4.17	59	465046	9.89911 ppb	96
28) MEK (2-Butanone)	4.38	43	52377	10.25802 ppb	99
29) Cis-1,2-DCE	4.31	96	204321	9.51807 ppb	95
30) 2,2-Dichloropropane	4.28	77	86459	9.77326 ppb	97
31) Chloroform	4.80	83	315750	9.27703 ppb	99
32) Bromochloromethane	4.64	128	102846	9.68818 ppb	100
34) 1,1,1-TCA	5.00	97	268817	9.90111 ppb	98
35) Cyclohexane	5.05	41	119261	9.41619 ppb	90
36) 1,1-Dichloropropene	5.23	75	230058	10.04094 ppb	96
37) 2,2,4-Trimethylpentane	5.63	57	490608	10.46856 ppb	98
39) Carbon Tetrachloride	5.21	117	240075	10.38829 ppb	97
40) Tert Amyl Methyl Ether	5.70	73	452224	10.25039 ppb	100
41) 1,2-DCA	5.52	62	216484	9.66668 ppb	99
42) Benzene	5.48	78	725650	9.56386 ppb	97

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L17.D
Acq On : 27 Jan 15 16:17
Sample : 10ug /L Std 1-27-15(CCV)
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 10:00 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) TCE	6.28	95	188599	9.22987	ppb		98
44) 2-Pentanone	6.54	43	1229360	134.04193	ppb		99
45) 1,2-Dichloropropane	6.53	63	186853	9.76416	ppb		99
46) Bromodichloromethane	6.86	83	223689	9.59456	ppb		99
47) Methyl Cyclohexane	6.48	83	266001	10.02430	ppb		100
48) Dibromomethane	6.65	93	110894	9.96953	ppb		98
49) 2-Chloroethyl vinyl ether	7.21	106	47	0.68772	ppb	#	1
50) MIBK (methyl isobutyl ket	7.55	43	114738	9.74938	ppb		98
51) 1-Bromo-2-chloroethane	7.17	63	136512	10.03941	ppb		100
52) Cis-1,3-Dichloropropene	7.35	75	268281	9.74582	ppb		98
53) Toluene	7.69	91	788045	9.69825	ppb		98
54) Trans-1,3-Dichloropropene	7.95	75	227595	9.79223	ppb		99
55) 1,1,2-TCA	8.13	83	130431	9.81639	ppb		99
56) 2-Hexanone	8.42	43	76695	10.45416	ppb		94
59) 1,2-EDB	8.60	107	155651	9.97634	ppb		100
60) Tetrachloroethene	8.25	166	227118	10.12108	ppb		95
61) 1-Chlorohexane	9.13	91	229892	10.14989	ppb		99
62) 1,1,1,2-Tetrachloroethane	9.21	131	196325	10.01497	ppb		98
63) m&p-Xylene	9.37	106	670692	19.81593	ppb		98
64) o-Xylene	9.76	106	316906	9.86022	ppb		97
65) Styrene	9.77	104	535602	10.41048	ppb		99
67) 1,3-Dichloropropane	8.29	76	261348	10.07797	ppb		100
68) Dibromochloromethane	8.51	129	176069	10.05261	ppb		96
69) Chlorobenzene	9.12	112	540693	9.80115	ppb		99
70) Ethylbenzene	9.25	91	853025	9.94566	ppb		99
71) Bromoform	9.93	173	120527	10.02693	ppb		93
73) Isopropylbenzene	10.14	105	808115	9.91562	ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	186757	9.80527	ppb		98
75) 1,2,3-Trichloropropane	10.46	110	58677	10.24582	ppb		94
76) t-1,4-Dichloro-2-Butene	10.50	53	36551	10.12975	ppb		94
77) Bromobenzene	10.40	156	239483	9.50555	ppb		96
78) n-Propylbenzene	10.54	91	970190	10.22005	ppb		99
79) 4-Ethyltoluene	10.66	105	825861	10.32330	ppb		100
80) 2-Chlorotoluene	10.61	91	580745	9.82848	ppb		97
81) 1,3,5-Trimethylbenzene	10.73	105	727714	10.29061	ppb		100
82) 4-Chlorotoluene	10.72	91	672112	9.98090	ppb		100
83) Tert-Butylbenzene	11.04	119	613404	10.18985	ppb		99
84) 1,2,4-Trimethylbenzene	11.09	105	722441	10.20724	ppb		98
85) Sec-Butylbenzene	11.26	105	886953	10.30105	ppb		100
86) p-Isopropyltoluene	11.42	119	757981	10.16093	ppb		100
87) Benzyl Chloride	11.58	91	230088	9.63852	ppb		97
88) 1,3-DCB	11.34	146	446299	9.65733	ppb		98
89) 1,4-DCB	11.43	146	457841	9.58010	ppb		99
90) n-Butylbenzene	11.82	91	679901	10.07171	ppb		100
91) 1,2-DCB	11.79	146	427086	9.46462	ppb		99
92) Hexachloroethane	12.05	117	138193	9.86307	ppb		98
93) 1,2-Dibromo-3-chloropropan	12.56	157	36915	10.09456	ppb		97
94) 1,2,4-Trichlorobenzene	13.39	180	283852	9.49973	ppb		98
95) Hexachlorobutadiene	13.58	225	176673	9.88869	ppb		93
96) Naphthalene	13.62	128	277184	8.68682	ppb		100
97) 1,2,3-Trichlorobenzene	13.87	180	178560	9.44422	ppb		97

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

Quantitation Report

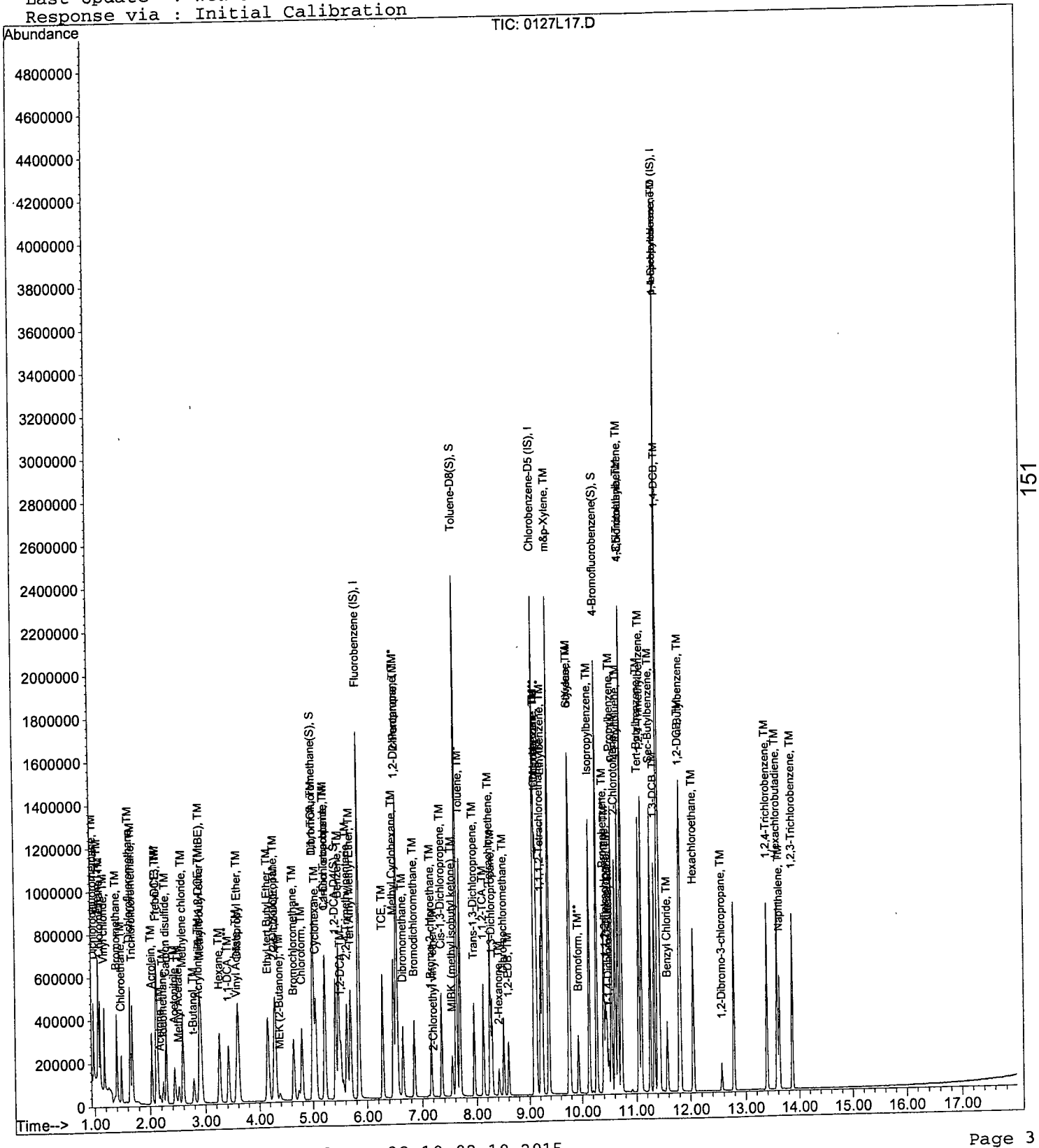
Data File : M:\LOKI\DATA\150127\0127L17.D
Acq On : 27 Jan 15 16:17
Sample : 10ug /L Std 1-27-15(CCV)
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

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

Quant Time: Jan 28 10:00 2015

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
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: 01/27/15
Instrument: Loki
Initial Cal. Date: 01/27/15
Data File: 0127L18.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Fluorobenzene (IS)	ISTD			I	
2	TM	Dichlorodifluoromethane	0.5119	0.5480	7.1	TM	
3	TM	Freon 114	0.4999	0.5136	2.7	TM	
4	TM**	Chloromethane	0.6575	0.6139	6.6	TM**	
5	TM*	Vinyl chloride	0.6530	0.6386	2.2	TM*	
6	TM	Bromomethane	0.4213	0.3945	6.4	TM	
7	TM	Chloroethane	0.3309	0.3357	1.4	TM	
8	TM	Dichlorofluoromethane	1.126	1.110	1.4	TM	
9	TM	Trichlorofluoromethane	0.8137	0.8360	2.7	TM	
10	TM	Acrolein	0.0528	0.0547	3.5	TM	
11	TML	Acetone	0.1869	0.1229	34	TML	7.6
12	TM	Freon-113	0.4980	0.5080	2.0	TM	
13	TM*	1,1-DCE	0.7141	0.7138	0.04	TM*	
14	TM	t-Butanol	0.0129	0.0135	4.7	TM	
15	TM	Acetonitrile	0.0452	0.0475	5.0	TM	
16	TM	Methyl Acetate	0.2906	0.2763	4.9	TM	
17	TML	Iodomethane	0.2471	0.2132	14	TML	8.6
18	TM	Acrylonitrile	0.1147	0.1139	0.72	TM	
19	TM	Methylene chloride	0.6013	0.5837	2.9	TM	
20	TM	Carbon disulfide	1.384	1.347	2.7	TM	
21	TM	Methyl t-butyl ether (MtBE)	1.278	1.320	3.3	TM	
22	TM	Trans-1,2-DCE	0.5486	0.5491	0.09	TM	
23	TM	Diisopropyl Ether	1.457	1.477	1.3	TM	
24	TM**	1,1-DCA	0.8973	0.8955	0.20	TM**	
25	TM	Hexane	0.5231	0.5292	1.2	TM	
26	TM	Vinyl Acetate	0.3093	0.3066	0.85	TM	
27	TM	Ethyl tert Butyl Ether	1.361	1.392	2.2	TM	
28	TML	MEK (2-Butanone)	0.1612	0.1516	6.0	TML	2.5
29	TM	Cis-1,2-DCE	0.6220	0.6201	0.30	TM	
30	TM	2,2-Dichloropropane	0.2563	0.2505	2.3	TM	
31	TM*	Chloroform	0.9861	0.9265	6.1	TM*	
32	TM	Bromochloromethane	0.3076	0.2959	3.8	TM	
33	S	Dibromofluoromethane(S)	0.5760	0.5299	8.0	S	
34	TM	1,1,1-TCA	0.7866	0.7980	1.4	TM	
35	TM	Cyclohexane	0.3670	0.3618	1.4	TM	
36	TM	1,1-Dichloropropene	0.6638	0.6813	2.6	TM	
37	TM	2,2,4-Trimethylpentane	1.358	1.442	6.2	TM	
38	S	1,2-DCA-D4(S)	0.5634	0.4938	12	S	
39	TM	Carbon Tetrachloride	0.6696	0.6991	4.4	TM	
40	TM	Tert Amyl Methyl Ether	1.278	1.323	3.5	TM	
		Average			4.4		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/27/15
Instrument: Loki
Cal. Date: 01/27/15
Data File: 0127L18.D

		Compound	MEAN	CCRF	%D	%Drift	
41	TM	1,2-DCA	0.6489	0.6418	1.1	TM	
42	TM	Benzene	2.198	2.109	4.0	TM	
43	TM	TCE	0.5920	0.5421	8.4	TM	
44	TM	2-Pentanone	0.2657	0.2848	7.2	TM	
45	TM*	1,2-Dichloropropane	0.5545	0.5461	1.5	TM*	
46	TM	Bromodichloromethane	0.6755	0.6616	2.1	TM	
47	TM	Methyl Cyclohexane	0.7688	0.7998	4.0	TM	
48	TM	Dibromomethane	0.3223	0.3152	2.2	TM	
49	TMQ	2-Chloroethyl vinyl ether	0.0180	0.0116	36	TMQ	34 nt
50	TM	MIBK (methyl isobutyl ketone)	0.3410	0.3482	2.1	TM	
51	TM	1-Bromo-2-chloroethane	0.3940	0.4146	5.2	TM	
52	TM	Cis-1,3-Dichloropropene	0.7976	0.7886	1.1	TM	
53	TM*	Toluene	2.354	2.300	2.3	TM*	
54	TM	Trans-1,3-Dichloropropene	0.6734	0.6729	0.08	TM	
55	TM	1,1,2-TCA	0.3850	0.3827	0.58	TM	
56	TM	2-Hexanone	0.2126	0.2098	1.3	TM	
57	I	Chlorobenzene-D5 (IS)	ISTD			I	
58	S	Toluene-D8(S)	1.991	1.869	6.1	S	
59	TM	1,2-EDB	0.4637	0.4581	1.2	TM	
60	TML	Tetrachloroethene	0.7307	0.6814	6.7	TML	2.2
61	TM	1-Chlorohexane	0.6732	0.6796	0.95	TM	
62	TM	1,1,1,2-Tetrachloroethane	0.5827	0.5792	0.59	TM	
63	TML	m&p-Xylene	1.106	0.9893	11	TML	1.7
64	TM	o-Xylene	0.9553	0.9530	0.24	TM	
65	TM	Styrene	1.529	1.586	3.7	TM	
66	S	4-Bromofluorobenzene(S)	0.7134	0.7173	0.55	S	
67	TM	1,3-Dichloropropane	0.7708	0.7748	0.52	TM	
68	TM	Dibromochloromethane	0.5206	0.5332	2.4	TM	
69	TM**	Chlorobenzene	1.640	1.616	1.4	TM**	
70	TM*	Ethylbenzene	2.549	2.547	0.10	TM*	
71	TM**	Bromoform	0.3573	0.3570	0.08	TM**	
72	I	1,4-Dichlorobenzene-D (IS)	ISTD			I	
73	TM	Isopropylbenzene	4.080	4.126	1.1	TM	
74	TM**	1,1,2,2-Tetrachloroethane	0.9535	0.9710	1.8	TM**	
75	TM	1,2,3-Trichloropropane	0.2867	0.2945	2.7	TM	
76	TM	t-1,4-Dichloro-2-Butene	0.1806	0.1874	3.8	TM	
77	TM	Bromobenzene	1.261	1.239	1.8	TM	
78	TM	n-Propylbenzene	4.752	4.905	3.2	TM	
79	TM	4-Ethyltoluene	4.005	4.259	6.4	TM	
80	TM	2-Chlorotoluene	2.958	3.007	1.7	TM	
		Average			3.6		

VOLATILE ORGANIC ANALYSIS BY
EPA METHOD 8260B

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: 0

SDG No:
Date Analyzed: 01/27/15
Instrument: Loki
Cal. Date: 01/27/15
Data File: 0127L18.D

		Compound	MEAN	CCRF	%D		%Drift
81	TM	1,3,5-Trimethylbenzene	3.540	3.750	5.9	TM	
82	TM	4-Chlorotoluene	3.371	3.510	4.1	TM	
83	TM	Tert-Butylbenzene	3.014	3.134	4.0	TM	
84	TM	1,2,4-Trimethylbenzene	3.543	3.678	3.8	TM	
85	TM	Sec-Butylbenzene	4.310	4.602	6.8	TM	
86	TM	p-Isopropyltoluene	3.734	3.882	4.0	TM	
87	TM	Benzyl Chloride	1.195	1.158	3.1	TM	
88	TM	1,3-DCB	2.313	2.329	0.69	TM	
89	TM	1,4-DCB	2.392	2.371	0.88	TM	
90	TM	n-Butylbenzene	3.379	3.505	3.7	TM	
91	TM	1,2-DCB	2.259	2.179	3.5	TM	
92	TM	Hexachloroethane	0.7014	0.7095	1.1	TM	
93	TM	1,2-Dibromo-3-chloropropane	0.1831	0.1952	6.6	TM	
94	TML	1,2,4-Trichlorobenzene	1.404	1.498	6.7	TML	0.56
95	TM	Hexachlorobutadiene	0.8944	0.9198	2.8	TM	
96	TMQ	Naphthalene	1.403	1.516	8.0	TMQ	6.3
97	TML	1,2,3-Trichlorobenzene	0.8627	0.9419	9.2	TML	1.2
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							
		Average			4.4		

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L18.D
Acq On : 27 Jan 15 16:45
Sample : 10ug /L Std 1-27-15(SS)
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 17
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 10:00 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

$\frac{214896 \times 25}{841216 \times 0.0530} = 9.78$

SV 1/28/15

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	841216	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	835840	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	483776	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	445755	22.99981 ppb	0.00
Spiked Amount 22.395			Recovery	= 102.701%	
38) 1,2-DCA-D4(S)	5.42	65	415433	21.91538 ppb	0.00
Spiked Amount 21.127			Recovery	= 103.732%	
58) Toluene-D8(S)	7.62	98	1562480	23.47169 ppb	0.00
Spiked Amount 23.536			Recovery	= 99.729%	
66) 4-Bromofluorobenzene(S)	10.27	95	599559	25.13857 ppb	0.00
Spiked Amount 23.661			Recovery	= 106.249%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	184403	10.70598 ppb	99
3) Freon 114	1.07	85	172824	10.27340 ppb	97
4) Chloromethane	1.10	50	206581	9.33681 ppb	98
5) Vinyl chloride	1.18	62	214896	9.77974 ppb	99
6) Bromomethane	1.40	94	132738	9.36278 ppb	99
7) Chloroethane	1.49	64	112944	10.14245 ppb	99
8) Dichlorofluoromethane	1.64	67	373567	9.85563 ppb	98
9) Trichlorofluoromethane	1.69	101	281297	10.27403 ppb	99
10) Acrolein	2.03	56	230009	129.40431 ppb #	98
11) Acetone	2.18	43	41368	10.75761 ppb	98
12) Freon-113	2.13	101	170927	10.19988 ppb	98
13) 1,1-DCE	2.11	61	240188	9.99635 ppb	97
14) t-Butanol	2.79	59	56736	130.85220 ppb	100
15) Acetonitrile	2.44	41	199582	131.23844 ppb	98
16) Methyl Acetate	2.52	43	92959	9.50532 ppb	100
17) Iodomethane	2.24	142	71744	9.13729 ppb	98
18) Acrylonitrile	2.87	52	38311	9.92839 ppb	96
19) Methylene chloride	2.59	84	196397	9.70700 ppb	99
20) Carbon disulfide	2.29	76	453167	9.72773 ppb	99
21) Methyl t-butyl ether (MtBE	2.92	73	444089	10.32968 ppb	98
22) Trans-1,2-DCE	2.89	96	184765	10.00858 ppb	98
23) Diisopropyl Ether	3.60	45	496907	10.13488 ppb	98
24) 1,1-DCA	3.42	63	301328	9.97988 ppb	99
25) Hexane	3.26	57	178074	10.11695 ppb	99
26) Vinyl Acetate	3.59	43	103178	9.91476 ppb	99
27) Ethyl tert Butyl Ether	4.16	59	468231	10.22321 ppb	96
28) MEK (2-Butanone)	4.38	43	51016	10.24845 ppb	95
29) Cis-1,2-DCE	4.31	96	208654	9.96987 ppb	97
30) 2,2-Dichloropropane	4.28	77	84280	9.77193 ppb	100
31) Chloroform	4.80	83	311742	9.39481 ppb	100
32) Bromochloromethane	4.64	128	99563	9.62010 ppb	94
34) 1,1,1-TCA	4.99	97	268530	10.14487 ppb	99
35) Cyclohexane	5.05	41	121751	9.85998 ppb	97
36) 1,1-Dichloropropene	5.23	75	229241	10.26256 ppb	97
37) 2,2,4-Trimethylpentane	5.63	57	485315	10.62192 ppb	98
39) Carbon Tetrachloride	5.22	117	235223	10.44008 ppb	97
40) Tert Amyl Methyl Ether	5.70	73	445208	10.35086 ppb	99
41) 1,2-DCA	5.52	62	215958	9.89117 ppb	99
42) Benzene	5.48	78	709807	9.59563 ppb	99

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\Q127L18.D
Acq On : 27 Jan 15 16:45
Sample : 10ug /L Std 1-27-15(SS)
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 17
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 10:00 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43)	TCE	6.28	95	182422	9.15714	ppb		98
44)	2-Pentanone	6.54	43	1197780	133.95700	ppb		98
45)	1,2-Dichloropropane	6.52	63	183765	9.84973	ppb		98
46)	Bromodichloromethane	6.86	83	222627	9.79457	ppb		98
47)	Methyl Cyclohexane	6.48	83	269113	10.40237	ppb		99
48)	Dibromomethane	6.65	93	106067	9.78079	ppb		99
49)	2-Chloroethyl vinyl ether	7.17	106	3889	6.61147	ppb	#	1
50)	MIBK (methyl isobutyl ket	7.55	43	117181	10.21301	ppb		99
51)	1-Bromo-2-chloroethane	7.17	63	139520	10.52448	ppb		99
52)	Cis-1,3-Dichloropropene	7.35	75	265365	9.88778	ppb		98
53)	Toluene	7.69	91	774000	9.77035	ppb		99
54)	Trans-1,3-Dichloropropene	7.95	75	226414	9.99192	ppb		99
55)	1,1,2-TCA	8.13	83	128789	9.94206	ppb		98
56)	2-Hexanone	8.42	43	70585	9.86873	ppb		97
59)	1,2-EDB	8.60	107	153143	9.87723	ppb		100
60)	Tetrachloroethene	8.25	166	227810	10.21796	ppb		97
61)	1-Chlorohexane	9.13	91	227214	10.09465	ppb		98
62)	1,1,1,2-Tetrachloroethane	9.21	131	193663	9.94120	ppb		98
63)	m&p-Xylene	9.37	106	661537	19.66986	ppb		98
64)	o-Xylene	9.76	106	318616	9.97567	ppb		98
65)	Styrene	9.78	104	530422	10.37453	ppb		99
67)	1,3-Dichloropropane	8.29	76	259050	10.05208	ppb		99
68)	Dibromochloromethane	8.51	129	178277	10.24259	ppb		95
69)	Chlorobenzene	9.12	112	540294	9.85542	ppb		97
70)	Ethylbenzene	9.25	91	851519	9.99044	ppb		100
71)	Bromoform	9.93	173	119356	9.99186	ppb		99
73)	Isopropylbenzene	10.14	105	798407	10.11273	ppb		97
74)	1,1,2,2-Tetrachloroethane	10.44	83	187901	10.18378	ppb		99
75)	1,2,3-Trichloropropane	10.46	110	56987	10.27193	ppb		96
76)	t-1,4-Dichloro-2-Butene	10.50	53	36273	10.37720	ppb		98
77)	Bromobenzene	10.40	156	239726	9.82234	ppb		96
78)	n-Propylbenzene	10.54	91	949121	10.32084	ppb		99
79)	4-Ethyltoluene	10.66	105	824212	10.63525	ppb		100
80)	2-Chlorotoluene	10.61	91	581973	10.16719	ppb		100
81)	1,3,5-Trimethylbenzene	10.73	105	725598	10.59189	ppb		99
82)	4-Chlorotoluene	10.72	91	679288	10.41308	ppb		97
83)	Tert-Butylbenzene	11.04	119	606489	10.40020	ppb		99
84)	1,2,4-Trimethylbenzene	11.09	105	711637	10.37915	ppb		100
85)	Sec-Butylbenzene	11.26	105	890598	10.67726	ppb		100
86)	p-Isopropyltoluene	11.41	119	751220	10.39536	ppb		99
87)	Benzyl Chloride	11.58	91	224011	9.68685	ppb		95
88)	1,3-DCB	11.34	146	450780	10.06915	ppb		100
89)	1,4-DCB	11.43	146	458880	9.91178	ppb		99
90)	n-Butylbenzene	11.82	91	678285	10.37211	ppb		100
91)	1,2-DCB	11.79	146	421707	9.64708	ppb		98
92)	Hexachloroethane	12.05	117	137287	10.11470	ppb		95
93)	1,2-Dibromo-3-chloropropan	12.56	157	37766	10.66062	ppb		94
94)	1,2,4-Trichlorobenzene	13.39	180	289892	9.94445	ppb		97
95)	Hexachlorobutadiene	13.58	225	177983	10.28358	ppb		94
96)	Naphthalene	13.62	128	293312	9.36571	ppb		99
97)	1,2,3-Trichlorobenzene	13.86	180	182272	9.88170	ppb		99

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

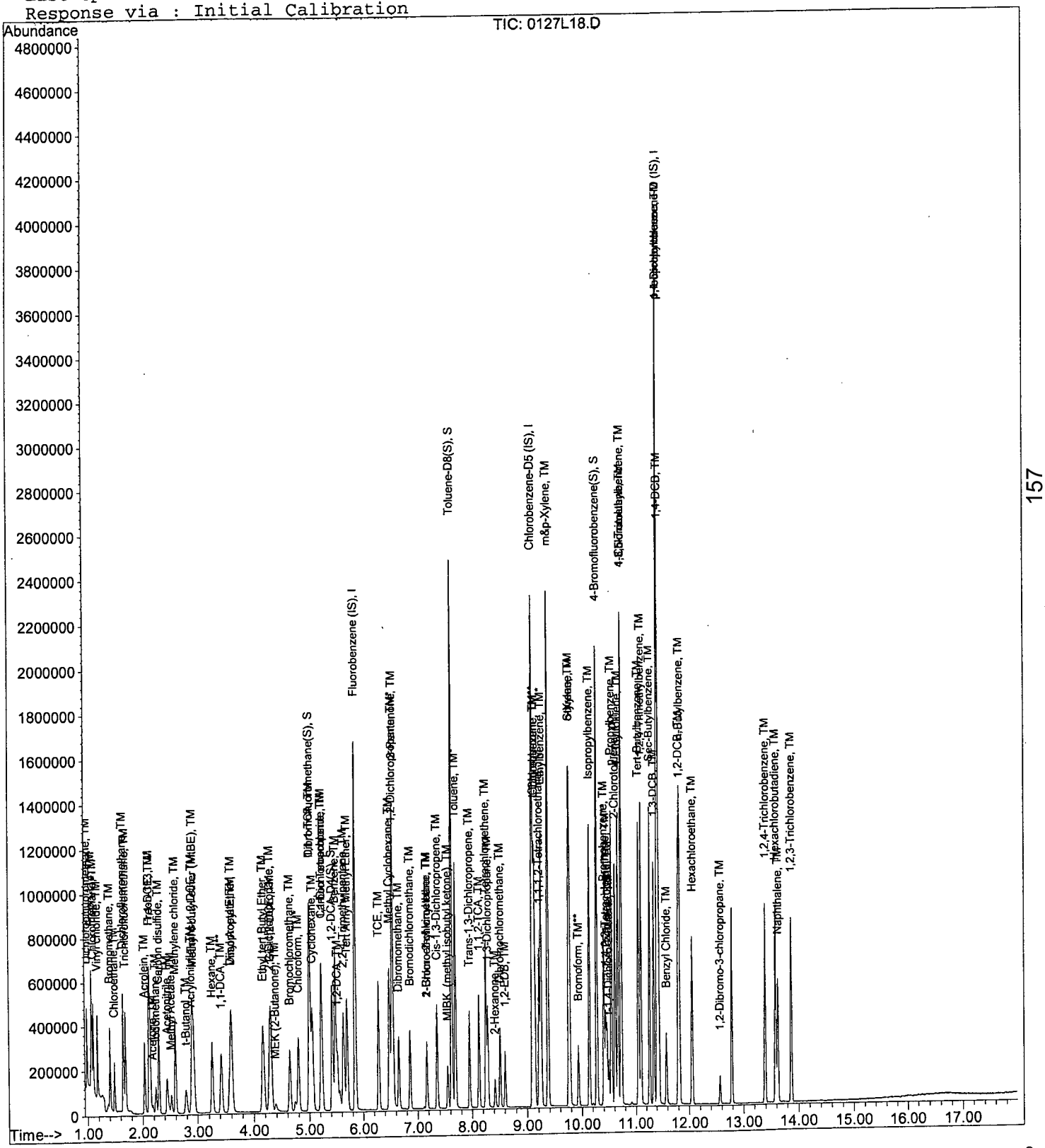
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L18.D
Acq On : 27 Jan 15 16:45
Sample : 1Qug /L Std 1-27-15(SS)
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 17
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 10:00 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
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: **150127W-10128 - 193850**
Batch ID: #86CRE-150127AL

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	01/27/15	01/27/15
BLANK	1,1,1-TRICHLOROETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
BLANK	1,1,2,2-TETRACHLOROETHANE	0.30 U	1.0	0.30	0.10	ug/L	01/27/15	01/27/15
BLANK	1,1,2-TRICHLOROETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
BLANK	1,1-DICHLOROETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	1,1-DICHLOROETHENE	0.50 U	1.0	0.50	0.30	ug/L	01/27/15	01/27/15
BLANK	1,2,3-TRICHLOROPROPANE	1.00 U	2.0	1.00	0.39	ug/L	01/27/15	01/27/15
BLANK	1,2,4-TRICHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
BLANK	1,2-DIBROMO-3-CHLOROPROPA	1.00 U	2.0	1.00	0.76	ug/L	01/27/15	01/27/15
BLANK	1,2-DIBROMOETHANE	0.50 U	1.0	0.50	0.20	ug/L	01/27/15	01/27/15
BLANK	1,2-DICHLOROBENZENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
BLANK	1,2-DICHLOROETHANE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
BLANK	1,2-DICHLOROPROPANE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
BLANK	1,3-DICHLOROBENZENE	0.30 U	1.0	0.30	0.11	ug/L	01/27/15	01/27/15
BLANK	1,3-DICHLOROPROPENE (TOTA	0.30 U	1.0	0.30	0.18	ug/L	01/27/15	01/27/15
BLANK	1,4-DICHLOROBENZENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	2-BUTANONE	2.00 U	10.0	2.00	0.60	ug/L	01/27/15	01/27/15
BLANK	4-METHYL-2-PENTANONE	5.00 U	10.0	5.00	1.90	ug/L	01/27/15	01/27/15
BLANK	ACETONE	2.00 U	10.0	2.00	0.95	ug/L	01/27/15	01/27/15
BLANK	BENZENE	0.200 U	0.20	0.200	0.060	ug/L	01/27/15	01/27/15
BLANK	BROMODICHLOROMETHANE	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
BLANK	BROMOFORM	0.30 U	1.0	0.30	0.14	ug/L	01/27/15	01/27/15
BLANK	BROMOMETHANE	0.50 U	2.0	0.50	0.24	ug/L	01/27/15	01/27/15
BLANK	CARBON TETRACHLORIDE	0.100 U	0.10	0.100	0.030	ug/L	01/27/15	01/27/15
BLANK	CHLOROBENZENE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
BLANK	CHLOROETHANE	0.50 U	1.0	0.50	0.21	ug/L	01/27/15	01/27/15
BLANK	CHLOROFORM	0.20 U	0.2	0.20	0.06	ug/L	01/27/15	01/27/15
BLANK	CHLOROMETHANE	0.50 U	1.0	0.50	0.31	ug/L	01/27/15	01/27/15
BLANK	CIS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
BLANK	DIBROMOCHLOROMETHANE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	ETHYLBENZENE	0.50 U	1.0	0.50	0.23	ug/L	01/27/15	01/27/15
BLANK	HEXACHLOROBUTADIENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	METHYL TERT-BUTYL ETHER	0.52 U	1.0	0.52	0.26	ug/L	01/27/15	01/27/15
BLANK	METHYLENE CHLORIDE	1.00 U	5.0	1.00	0.35	ug/L	01/27/15	01/27/15

Quant Method: LCREDW.M
Run #: 0127L24
Instrument: Loki
Sequence: 150127
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/28/15 12:04:47 PM

Method Blank
EPA 8260C WATER

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **150127W-10128 - 193850**
Batch ID: #86CRE-150127AL

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	01/27/15	01/27/15
BLANK	TETRACHLOROETHENE	0.30 U	0.3	0.30	0.08	ug/L	01/27/15	01/27/15
BLANK	TOLUENE	0.30 U	1.0	0.30	0.17	ug/L	01/27/15	01/27/15
BLANK	TRANS-1,2-DICHLOROETHENE	0.30 U	1.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	TRICHLOROETHENE	0.30 U	1.0	0.30	0.16	ug/L	01/27/15	01/27/15
BLANK	VINYL CHLORIDE	0.10 U	0.1	0.10	0.03	ug/L	01/27/15	01/27/15
BLANK	XYLENES (TOTAL)	0.30 U	2.0	0.30	0.19	ug/L	01/27/15	01/27/15
BLANK	SURROGATE: 1,2-DICHLOROET	98.9	70-120			%	01/27/15	01/27/15
BLANK	SURROGATE: 4-BROMOFLUOR	99.0	75-120			%	01/27/15	01/27/15
BLANK	SURROGATE: DIBROMOFLUOR	98.4	85-115			%	01/27/15	01/27/15
BLANK	SURROGATE: TOLUENE-D8 (S)	98.4	85-120			%	01/27/15	01/27/15

Quant Method: LCREDW.M
Run #: 0127L24
Instrument: Loki
Sequence: 150127
Initials: SV

GC SC-Blank-REG MDLs
Printed: 01/28/15 12:04:47 PM

Quantitation Report (QT Reviewed)

Data File : M:\LOKI\DATA\150127\0127L24.D
Acq On : 27 Jan 15 19:34
Sample : 150127A BLK-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 23
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:36 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	816704	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	803072	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.42	152	431936	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	419503	22.02863 ppb	0.00
Spiked Amount 22.395			Recovery	= 98.365%	
38) 1,2-DCA-D4(S)	5.42	65	387035	20.90309 ppb	0.00
Spiked Amount 21.127			Recovery	= 98.942%	
58) Toluene-D8(S)	7.62	98	1484549	23.16878 ppb	0.00
Spiked Amount 23.536			Recovery	= 98.442%	
66) 4-Bromofluorobenzene(S)	10.27	95	538314	23.41437 ppb	0.00
Spiked Amount 23.661			Recovery	= 98.958%	

Target Compounds Qvalue

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

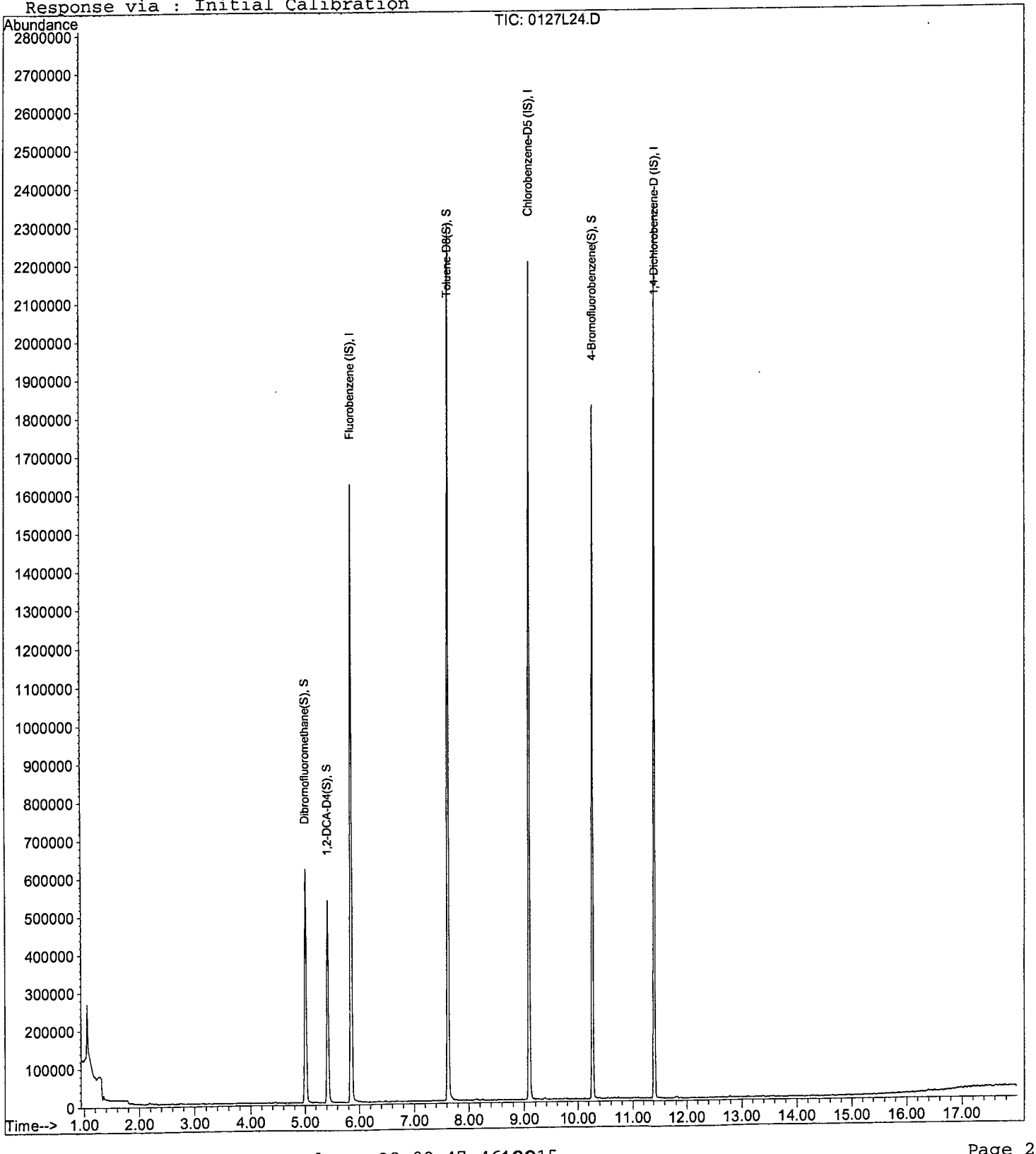
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L24.D
Acq On : 27 Jan 15 19:34
Sample : 150127A BLK-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 23
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 9:36 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



Laboratory Control Spike Recovery
EPA 8260C WATER

APPL ID: **150127W-10128 LCS - 193850**
Batch ID: #86CRE-150127AL

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	9.66	96.6	80-130
1,1,1-TRICHLOROETHANE	10.00	9.45	94.5	65-130
1,1,2,2-TETRACHLOROETHANE	10.00	9.67	96.7	65-130
1,1,2-TRICHLOROETHANE	10.00	9.90	99.0	75-125
1,1-DICHLOROETHANE	10.00	9.68	96.8	70-135
1,1-DICHLOROETHENE	10.00	9.51	95.1	70-130
1,2,3-TRICHLOROPROPANE	10.00	10.3	103	75-125
1,2,4-TRICHLOROBENZENE	10.00	9.62	96.2	65-135
1,2-DIBROMO-3-CHLOROPROPANE	10.00	10.4	104	50-130
1,2-DIBROMOETHANE	10.00	9.81	98.1	80-120
1,2-DICHLOROBENZENE	10.00	9.39	93.9	70-120
1,2-DICHLOROETHANE	10.00	9.76	97.6	70-130
1,2-DICHLOROPROPANE	10.00	9.75	97.5	75-125
1,3-DICHLOROBENZENE	10.00	9.50	95.0	75-125
1,3-DICHLOROPROPENE (TOTAL)	20.0	19.9	99.5	55-140
1,4-DICHLOROBENZENE	10.00	9.28	92.8	75-125
2-BUTANONE	10.00	10.6	106	30-150
4-METHYL-2-PENTANONE	10.00	9.81	98.1	60-135
ACETONE	10.00	10.7	107	40-140
BENZENE	10.00	9.29	92.9	80-120
BROMODICHLOROMETHANE	10.00	9.80	98.0	75-120
BROMOFORM	10.00	10.0	100	70-130
BROMOMETHANE	10.00	9.34	93.4	30-145
CARBON TETRACHLORIDE	10.00	9.87	98.7	65-140
CHLOROBENZENE	10.00	9.53	95.3	80-120
CHLOROETHANE	10.00	9.79	97.9	60-135
CHLOROFORM	10.00	9.14	91.4	65-135
CHLOROMETHANE	10.00	8.99	89.9	40-125
CIS-1,2-DICHLOROETHENE	10.00	9.51	95.1	70-125
DIBROMOCHLOROMETHANE	10.00	10.3	103	60-135
ETHYLBENZENE	10.00	9.62	96.2	75-125

Primary	SPK
Quant Method :	LCREDW.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	Loki
Run :	0127L19
Initials :	SV

Comments: _____

Printed: 01/28/15 12:04:51 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 8260C WATER

APPL ID: **150127W-10128 LCS - 193850**
Batch ID: #86CRE-150127AL

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	9.41	94.1	50-140
METHYL TERT-BUTYL ETHER	10.00	9.99	99.9	65-125
METHYLENE CHLORIDE	10.00	9.52	95.2	55-140
STYRENE	10.00	10.1	101	65-135
TETRACHLOROETHENE	10.00	9.73	97.3	45-150
TOLUENE	10.00	9.44	94.4	75-120
TRANS-1,2-DICHLOROETHENE	10.00	9.46	94.6	60-140
TRICHLOROETHENE	10.00	9.23	92.3	70-125
VINYL CHLORIDE	10.00	9.21	92.1	50-145
XYLENES (TOTAL)	30.0	28.6	95.3	75-130
SURROGATE: 1,2-DICHLOROETHANE-	21.1	20.9	98.9	70-120
SURROGATE: 4-BROMOFLUOROBENZ	23.7	25.0	106	75-120
SURROGATE: DIBROMOFLUOROMETH	22.4	22.1	98.7	85-115
SURROGATE: TOLUENE-D8 (S)	23.5	23.0	97.7	85-120

Comments: _____

Primary	SPK
Quant Method :	LCREDW.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	Loki
Run :	0127L19
Initials :	SV

Printed: 01/28/15 12:04:51 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L19.D
Acq On : 27 Jan 15 17:13
Sample : 150127A LCS-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 18
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 10:00 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	854080	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	847680	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	504768	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	434885	22.10097 ppb	0.00
Spiked Amount 22.395			Recovery	= 98.686%	
38) 1,2-DCA-D4(S)	5.42	65	402180	20.89669 ppb	0.00
Spiked Amount 21.127			Recovery	= 98.914%	
58) Toluene-D8(S)	7.62	98	1553116	23.00514 ppb	0.00
Spiked Amount 23.536			Recovery	= 97.745%	
66) 4-Bromofluorobenzene(S)	10.27	95	605736	25.04282 ppb	0.00
Spiked Amount 23.661			Recovery	= 105.843%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	175126	10.01424 ppb	100
3) Freon 114	1.07	85	167241	9.79179 ppb	96
4) Chloromethane	1.10	50	201948	8.98993 ppb	98
5) Vinyl chloride	1.18	62	205425	9.20791 ppb	99
6) Bromomethane	1.40	94	134379	9.33577 ppb	96
7) Chloroethane	1.49	64	110691	9.79041 ppb	99
8) Dichlorofluoromethane	1.64	67	355452	9.23646 ppb	99
9) Trichlorofluoromethane	1.69	101	272873	9.81624 ppb	100
10) Acrolein	2.03	56	228298	126.50712 ppb	98
11) Acetone	2.18	43	41879	10.72268 ppb	96
12) Freon-113	2.13	101	167223	9.82855 ppb	91
13) 1,1-DCE	2.11	61	231920	9.50686 ppb	97
14) t-Butanol	2.79	59	59696	135.60525 ppb	96
15) Acetonitrile	2.44	41	200134	129.61926 ppb	99
16) Methyl Acetate	2.52	43	96602	9.72905 ppb	96
17) Iodomethane	2.24	142	68496	8.62420 ppb	99
18) Acrylonitrile	2.87	52	39470	10.07469 ppb	99
19) Methylene chloride	2.59	84	195651	9.52448 ppb	100
20) Carbon disulfide	2.29	76	442641	9.35866 ppb	98
21) Methyl t-butyl ether (MtBE	2.92	73	435960	9.98786 ppb	99
22) Trans-1,2-DCE	2.89	96	177332	9.46126 ppb	98
23) Diisopropyl Ether	3.60	45	497936	10.00290 ppb	99
24) 1,1-DCA	3.42	63	296641	9.67667 ppb	99
25) Hexane	3.26	57	171454	9.59413 ppb	98
26) Vinyl Acetate	3.59	43	100119	9.47590 ppb	100
27) Ethyl tert Butyl Ether	4.16	59	468137	10.06721 ppb	97
28) MEK (2-Butanone)	4.38	43	53770	10.63674 ppb	98
29) Cis-1,2-DCE	4.31	96	202141	9.51319 ppb	97
30) 2,2-Dichloropropane	4.28	77	81256	9.27941 ppb	99
31) Chloroform	4.80	83	308015	9.14268 ppb	99
32) Bromochloromethane	4.64	128	100606	9.57447 ppb	98
34) 1,1,1-TCA	4.99	97	253972	9.45037 ppb	99
35) Cyclohexane	5.05	41	117785	9.39512 ppb	91
36) 1,1-Dichloropropene	5.23	75	219415	9.67473 ppb	98
37) 2,2,4-Trimethylpentane	5.63	57	463274	9.98680 ppb #	89
39) Carbon Tetrachloride	5.21	117	225703	9.86666 ppb	97
40) Tert Amyl Methyl Ether	5.70	73	450186	10.30895 ppb	100
41) 1,2-DCA	5.52	62	216409	9.76253 ppb	98
42) Benzene	5.48	78	697704	9.28995 ppb	99

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L19.D
Acq On : 27 Jan 15 17:13
Sample : 150127A LCS-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 18
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 10:00 2015

Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43) TCE	6.28	95	186777	9.23454	ppb		99
44) 2-Pentanone	6.54	43	1213806	133.70468	ppb		100
45) 1,2-Dichloropropane	6.52	63	184777	9.75480	ppb		99
46) Bromodichloromethane	6.86	83	226151	9.79975	ppb		98
47) Methyl Cyclohexane	6.48	83	253260	9.64213	ppb		94
48) Dibromomethane	6.65	93	109860	9.97797	ppb		98
49) 2-Chloroethyl vinyl ether	7.17	106	3761	6.33475	ppb	#	1
50) MIBK (methyl isobutyl ket	7.55	43	114294	9.81135	ppb		98
51) 1-Bromo-2-chloroethane	7.17	63	132992	9.88095	ppb		99
52) Cis-1,3-Dichloropropene	7.35	75	270784	9.93773	ppb		99
53) Toluene	7.69	91	759344	9.44097	ppb		100
54) Trans-1,3-Dichloropropene	7.95	75	228901	9.94952	ppb		99
55) 1,1,2-TCA	8.13	83	130264	9.90447	ppb		99
56) 2-Hexanone	8.42	43	74411	10.24695	ppb		99
59) 1,2-EDB	8.60	107	154301	9.81291	ppb		100
60) Tetrachloroethene	8.25	166	220292	9.73129	ppb		99
61) 1-Chlorohexane	9.13	91	223741	9.80150	ppb		97
62) 1,1,1,2-Tetrachloroethane	9.21	131	190948	9.66493	ppb		97
63) m&p-Xylene	9.37	106	652119	19.12536	ppb		100
64) o-Xylene	9.76	106	308168	9.51379	ppb		97
65) Styrene	9.78	104	521453	10.05665	ppb		99
67) 1,3-Dichloropropane	8.29	76	258232	9.88038	ppb		100
68) Dibromochloromethane	8.51	129	181547	10.28477	ppb		99
69) Chlorobenzene	9.12	112	530096	9.53434	ppb		99
70) Ethylbenzene	9.25	91	831276	9.61671	ppb		100
71) Bromoform	9.93	173	121743	10.04933	ppb		100
73) Isopropylbenzene	10.14	105	783444	9.51053	ppb		99
74) 1,1,2,2-Tetrachloroethane	10.44	83	186256	9.67482	ppb		99
75) 1,2,3-Trichloropropane	10.46	110	59561	10.28941	ppb		100
76) t-1,4-Dichloro-2-Butene	10.50	53	36484	10.00350	ppb		96
77) Bromobenzene	10.40	156	241158	9.47009	ppb		97
78) n-Propylbenzene	10.54	91	926483	9.65569	ppb		100
79) 4-Ethyltoluene	10.66	105	797824	9.86662	ppb		98
80) 2-Chlorotoluene	10.61	91	573092	9.59566	ppb		99
81) 1,3,5-Trimethylbenzene	10.73	105	712653	9.97030	ppb		100
82) 4-Chlorotoluene	10.72	91	670437	9.84999	ppb		99
83) Tert-Butylbenzene	11.04	119	589566	9.68955	ppb		99
84) 1,2,4-Trimethylbenzene	11.09	105	703521	9.83406	ppb		99
85) Sec-Butylbenzene	11.26	105	862549	9.91093	ppb		100
86) p-Isopropyltoluene	11.41	119	737675	9.78340	ppb		100
87) Benzyl Chloride	11.58	91	227271	9.41911	ppb		97
88) 1,3-DCB	11.34	146	443760	9.50012	ppb		99
89) 1,4-DCB	11.43	146	448151	9.27747	ppb		98
90) n-Butylbenzene	11.82	91	657007	9.62892	ppb		99
91) 1,2-DCB	11.79	146	428271	9.38980	ppb		99
92) Hexachloroethane	12.05	117	134865	9.52303	ppb		97
93) 1,2-Dibromo-3-chloropropan	12.56	157	38576	10.43641	ppb		95
94) 1,2,4-Trichlorobenzene	13.39	180	291190	9.62210	ppb		100
95) Hexachlorobutadiene	13.58	225	169898	9.40820	ppb		97
96) Naphthalene	13.62	128	300736	9.22668	ppb		98
97) 1,2,3-Trichlorobenzene	13.86	180	175808	9.23338	ppb		97

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

Quantitation Report

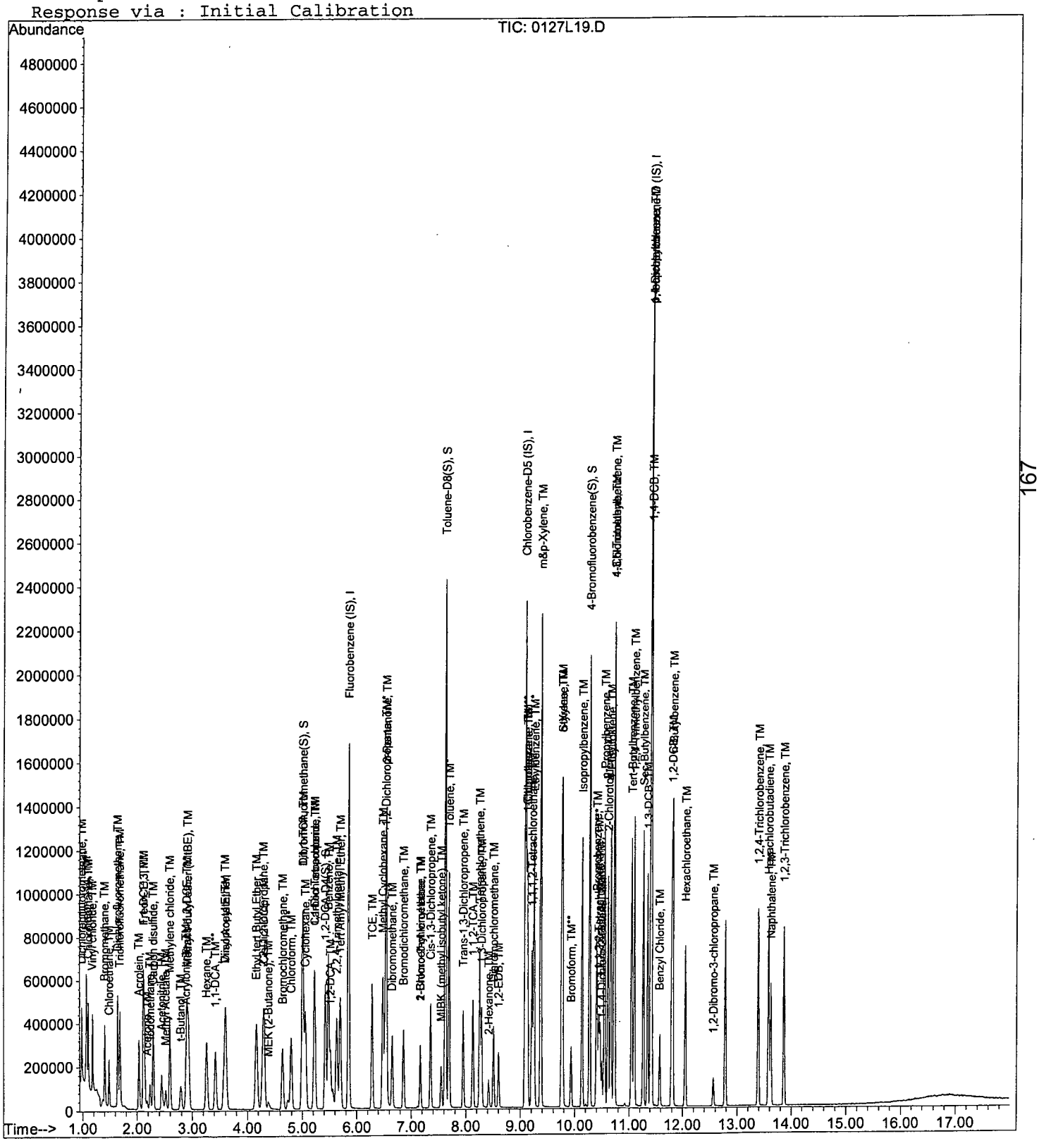
Data File : M:\LOKI\DATA\150127\0127L19.D
Acq On : 27 Jan 15 17:13
Sample : 150127A LCS-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 18
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 10:00 2015

Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



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Matrix Spike Recoveries

EPA 8260C WATER

APPL ID: **150128W-10128 MS - 193850**
Batch ID: #86CRE-150127AL
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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	8.21	7.94	82.1	79.4 #	80-130	3.3	30
1,1,1-TRICHLOROETHANE	10.00	ND	8.07	7.77	80.7	77.7	65-130	3.8	30
1,1,2,2-TETRACHLOROETHANE	10.00	ND	7.43	7.29	74.3	72.9	65-130	1.9	30
1,1,2-TRICHLOROETHANE	10.00	ND	7.57	7.54	75.7	75.4	75-125	0.40	30
1,1-DICHLOROETHANE	10.00	ND	7.95	7.79	79.5	77.9	70-135	2.0	30
1,1-DICHLOROETHENE	10.00	ND	8.24	7.84	82.4	78.4	70-130	5.0	30
1,2,3-TRICHLOROPROPANE	10.00	ND	7.35	7.28	73.5 #	72.8 #	75-125	0.96	30
1,2,4-TRICHLOROBENZENE	10.00	ND	7.38	7.40	73.8	74.0	65-135	0.27	30
1,2-DIBROMO-3-CHLOROPROPANE	10.00	ND	7.01	7.12	70.1	71.2	50-130	1.6	30
1,2-DIBROMOETHANE	10.00	ND	7.46	7.55	74.6 #	75.5 #	80-120	1.2	30
1,2-DICHLOROBENZENE	10.00	ND	7.56	7.56	75.6	75.6	70-120	0.0	30
1,2-DICHLOROETHANE	10.00	ND	7.79	7.36	77.9	73.6	70-130	5.7	30
1,2-DICHLOROPROPANE	10.00	ND	8.09	7.68	80.9	76.8	75-125	5.2	30
1,3-DICHLOROBENZENE	10.00	ND	7.86	7.71	78.6	77.1	75-125	1.9	30
1,3-DICHLOROPROPENE (TOTAL)	20.0	ND	15.6	14.9	78.0	74.5	55-140	4.6	30
1,4-DICHLOROBENZENE	10.00	ND	7.73	7.72	77.3	77.2	75-125	0.13	30
2-BUTANONE	10.00	ND	9.34	9.30	93.4	93.0	30-150	0.43	30
4-METHYL-2-PENTANONE	10.00	ND	8.32	8.48	83.2	84.8	60-135	1.9	30
ACETONE	10.00	ND	8.51	8.27	85.1	82.7	40-140	2.9	30
BENZENE	10.00	ND	7.82	7.48	78.2 #	74.8 #	80-120	4.4	30
BROMODICHLOROMETHANE	10.00	ND	7.81	7.63	78.1	76.3	75-120	2.3	30
BROMOFORM	10.00	ND	7.52	7.49	75.2	74.9	70-130	0.40	30
BROMOMETHANE	10.00	ND	9.00	8.47	90.0	84.7	30-145	6.1	30
CARBON TETRACHLORIDE	10.00	ND	8.64	8.38	86.4	83.8	65-140	3.1	30
CHLOROBENZENE	10.00	ND	8.10	7.79	81.0	77.9 #	80-120	3.9	30
CHLOROETHANE	10.00	ND	10.1	9.54	101	95.4	60-135	5.7	30
CHLOROFORM	10.00	ND	8.96	8.54	89.6	85.4	65-135	4.8	30
CHLOROMETHANE	10.00	ND	9.16	8.64	91.6	86.4	40-125	5.8	30
CIS-1,2-DICHLOROETHENE	10.00	ND	7.92	7.62	79.2	76.2	70-125	3.9	30
DIBROMOCHLOROMETHANE	10.00	ND	8.24	7.95	82.4	79.5	60-135	3.6	30

= Recovery is outside QC limits.

Primary	SPK	DUP
Quant Method :	LCREDW.M	LCREDW.M
Extraction Date :	01/28/15	01/28/15
Analysis Date :	01/28/15	01/28/15
Instrument :	Loki	Loki
Run :	0127L38	0127L39
Initials :	SV	

Comments: _____

Printed: 01/28/15 12:04:55 PM
APPL MSD SCII

Matrix Spike Recoveries

EPA 8260C WATER

APPL ID: **150128W-10128 MS - 193850**
Batch ID: #86CRE-150127AL
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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
ETHYLBENZENE	10.00	ND	8.18	7.87	81.8	78.7	75-125	3.9	30
HEXACHLOROBUTADIENE	10.00	ND	7.74	7.53	77.4	75.3	50-140	2.8	30
METHYL TERT-BUTYL ETHER	10.00	ND	7.63	7.48	76.3	74.8	65-125	2.0	30
METHYLENE CHLORIDE	10.00	ND	8.37	7.81	83.7	78.1	55-140	6.9	30
STYRENE	10.00	ND	8.42	8.22	84.2	82.2	65-135	2.4	30
TETRACHLOROETHENE	10.00	ND	8.22	8.01	82.2	80.1	45-150	2.6	30
TOLUENE	10.00	ND	8.04	7.83	80.4	78.3	75-120	2.6	30
TRANS-1,2-DICHLOROETHENE	10.00	ND	8.06	7.57	80.6	75.7	60-140	6.3	30
TRICHLOROETHENE	10.00	ND	7.54	7.13	75.4	71.3	70-125	5.6	30
VINYL CHLORIDE	10.00	ND	9.92	9.50	99.2	95.0	50-145	4.3	30
XYLENES (TOTAL)	30.0	ND	24.6	23.8	82.0	79.3	75-130	3.3	30
SURROGATE: 1,2-DICHLOROETHANE-D	21.1	NA	20.5	19.9	97.0	94.2	70-120		
SURROGATE: 4-BROMOFLUOROBENZ	23.7	NA	25.0	24.2	106	102	75-120		
SURROGATE: DIBROMOFLUOROMETH	22.4	NA	22.5	21.7	100	96.9	85-115		
SURROGATE: TOLUENE-D8 (S)	23.5	NA	23.4	23.0	99.4	97.7	85-120		

= Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Quant Method :	LCREDW.M	LCREDW.M
Extraction Date :	01/28/15	01/28/15
Analysis Date :	01/28/15	01/28/15
Instrument :	Loki	Loki
Run :	0127L38	0127L39
Initials :	SV	

Printed: 01/28/15 12:04:55 PM
APPL MSD SCII

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L38.D
Acq On : 28 Jan 15 2:06
Sample : AZ10128W456 MS-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 37
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:39 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	790336	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	787328	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	468800	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.00	111	414083	22.46947 ppb	0.00
Spiked Amount 22.395			Recovery	= 100.330%	
38) 1,2-DCA-D4(S)	5.42	65	367970	20.53646 ppb	0.00
Spiked Amount 21.127			Recovery	= 97.205%	
58) Toluene-D8(S)	7.62	98	1470400	23.40685 ppb	0.00
Spiked Amount 23.536			Recovery	= 99.453%	
66) 4-Bromofluorobenzene(S)	10.27	95	563600	25.00441 ppb	0.00
Spiked Amount 23.661			Recovery	= 105.678%	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.98	85	174446	10.77781 ppb	99
3) Freon 114	1.07	85	140423	9.03519 ppb	100
4) Chloromethane	1.10	50	190419	9.16039 ppb	100
5) Vinyl chloride	1.18	62	203681	9.92095 ppb	99
6) Bromomethane	1.41	94	123344	9.00200 ppb	99
7) Chloroethane	1.49	64	107556	10.12608 ppb	97
8) Dichlorofluoromethane	1.64	67	289396	8.07784 ppb	99
9) Trichlorofluoromethane	1.69	101	263231	10.31170 ppb	99
10) Acrolein	2.03	56	173876	99.38828 ppb	97
11) Acetone	2.18	43	31630	8.51151 ppb	94
12) Freon-113	2.13	101	132102	8.39976 ppb	99
13) 1,1-DCE	2.11	61	186474	8.23908 ppb	97
14) t-Butanol	2.78	59	43688	104.55274 ppb	95
15) Acetonitrile	2.44	41	157528	110.25371 ppb	97
16) Methyl Acetate	2.52	43	68853	7.49366 ppb	95
17) Iodomethane	2.24	142	58040	7.83878 ppb	98
18) Acrylonitrile	2.88	52	27545	7.54239 ppb	93
19) Methylene chloride	2.59	84	159163	8.37313 ppb	100
20) Carbon disulfide	2.29	76	355143	8.03271 ppb	100
21) Methyl t-butyl ether (MtBE	2.92	73	305712	7.63190 ppb	98
22) Trans-1,2-DCE	2.90	96	141524	8.06417 ppb	95
23) Diisopropyl Ether	3.60	45	374072	8.13022 ppb	98
24) 1,1-DCA	3.42	63	229455	7.95345 ppb	97
25) Hexane	3.26	57	126439	7.77475 ppb	99
26) Vinyl Acetate	3.59	43	76905	7.68160 ppb	99
27) Ethyl tert Butyl Ether	4.17	59	332255	7.81741 ppb	96
28) MEK (2-Butanone)	4.38	43	43634	9.33513 ppb	96
29) Cis-1,2-DCE	4.31	96	156820	7.92212 ppb	93
30) 2,2-Dichloropropane	4.28	77	55992	6.92520 ppb	99
31) Chloroform	4.80	83	279193	8.95556 ppb	96
32) Bromochloromethane	4.64	128	77141	7.92645 ppb	100
34) 1,1,1-TCA	4.99	97	201785	8.06884 ppb	98
35) Cyclohexane	5.05	41	93631	8.02052 ppb	97
36) 1,1-Dichloropropene	5.23	75	175747	8.45371 ppb	98
37) 2,2,4-Trimethylpentane	5.63	57	347685	8.16382 ppb	98
39) Carbon Tetrachloride	5.21	117	181739	8.63728 ppb	98
40) Tert Amyl Methyl Ether	5.69	73	316964	7.97468 ppb	99
41) 1,2-DCA	5.52	62	159143	7.79438 ppb	98
42) Benzene	5.48	78	545991	7.81637 ppb	99

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L38.D
Acq On : 28 Jan 15 2:06
Sample : AZ10128W456 MS-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 37
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:39 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
43) TCE	6.28	95	141552	7.54467 ppb	98
44) 2-Pentanone	6.54	43	859944	102.36566 ppb	100
45) 1,2-Dichloropropane	6.52	63	141930	8.09375 ppb	98
46) Bromodichloromethane	6.86	83	168945	7.81387 ppb	98
47) Methyl Cyclohexane	6.48	83	206351	8.60461 ppb	98
48) Dibromomethane	6.65	93	80305	7.96226 ppb	97
49) 2-Chloroethyl vinyl ether	7.23	106	4624	8.14546 ppb	84
50) MIBK (methyl isobutyl ket	7.55	43	89686	8.31988 ppb	99
51) 1-Bromo-2-chloroethane	7.16	63	100320	8.18901 ppb	99
52) Cis-1,3-Dichloropropene	7.35	75	198398	7.97526 ppb	97
53) Toluene	7.69	91	593510	8.03849 ppb	99
54) Trans-1,3-Dichloropropene	7.95	75	159279	7.62724 ppb	99
55) 1,1,2-TCA	8.12	83	92227	7.57289 ppb	91
56) 2-Hexanone	8.42	43	58874	8.62278 ppb	99
59) 1,2-EDB	8.60	107	109126	7.46237 ppb	99
60) Tetrachloroethene	8.25	166	172995	8.22079 ppb	95
61) 1-Chlorohexane	9.13	91	174961	8.37418 ppb	97
62) 1,1,1,2-Tetrachloroethane	9.21	131	148785	8.21268 ppb	96
63) m&p-Xylene	9.37	106	512532	16.19561 ppb	97
64) o-Xylene	9.76	106	247572	8.41119 ppb	98
65) Styrene	9.77	104	396075	8.42343 ppb	98
67) 1,3-Dichloropropane	8.29	76	189410	7.79352 ppb	98
68) Dibromochloromethane	8.51	129	135156	8.23637 ppb	99
69) Chlorobenzene	9.12	112	418729	8.10416 ppb	97
70) Ethylbenzene	9.25	91	655619	8.17826 ppb	99
71) Bromoform	9.93	173	84682	7.52146 ppb	98
73) Isopropylbenzene	10.14	105	622933	8.12611 ppb	99
74) 1,1,2,2-Tetrachloroethane	10.44	83	134928	7.43327 ppb	99
75) 1,2,3-Trichloropropane	10.46	110	40492	7.34918 ppb	87
76) t-1,4-Dichloro-2-Butene	10.50	53	22121	6.53068 ppb	100
77) Bromobenzene	10.40	156	186786	7.92094 ppb	99
78) n-Propylbenzene	10.54	91	727767	8.23215 ppb	99
79) 4-Ethyltoluene	10.66	105	623638	8.40879 ppb	99
80) 2-Chlorotoluene	10.61	91	439044	7.78730 ppb	100
81) 1,3,5-Trimethylbenzene	10.73	105	557066	8.48954 ppb	99
82) 4-Chlorotoluene	10.72	91	513536	8.17022 ppb	98
83) Tert-Butylbenzene	11.04	119	468187	8.36551 ppb	97
84) 1,2,4-Trimethylbenzene	11.09	105	545630	8.27205 ppb	99
85) Sec-Butylbenzene	11.26	105	684740	8.58693 ppb	97
86) p-Isopropyltoluene	11.41	119	569568	8.21231 ppb	99
87) Benzyl Chloride	11.58	91	134344	6.02615 ppb	97
88) 1,3-DCB	11.34	146	344189	7.86119 ppb	99
89) 1,4-DCB	11.43	146	350538	7.73247 ppb	99
90) n-Butylbenzene	11.81	91	499781	7.95634 ppb	100
91) 1,2-DCB	11.79	146	318404	7.55718 ppb	97
92) Hexachloroethane	12.05	117	129638	9.70362 ppb	97
93) 1,2-Dibromo-3-chloropropan	12.56	157	24292	7.01086 ppb	97
94) 1,2,4-Trichlorobenzene	13.39	180	197612	7.38138 ppb	99
95) Hexachlorobutadiene	13.58	225	131147	7.74059 ppb	96
96) Naphthalene	13.62	128	175296	6.09776 ppb	100
97) 1,2,3-Trichlorobenzene	13.87	180	115744	6.73516 ppb	97

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

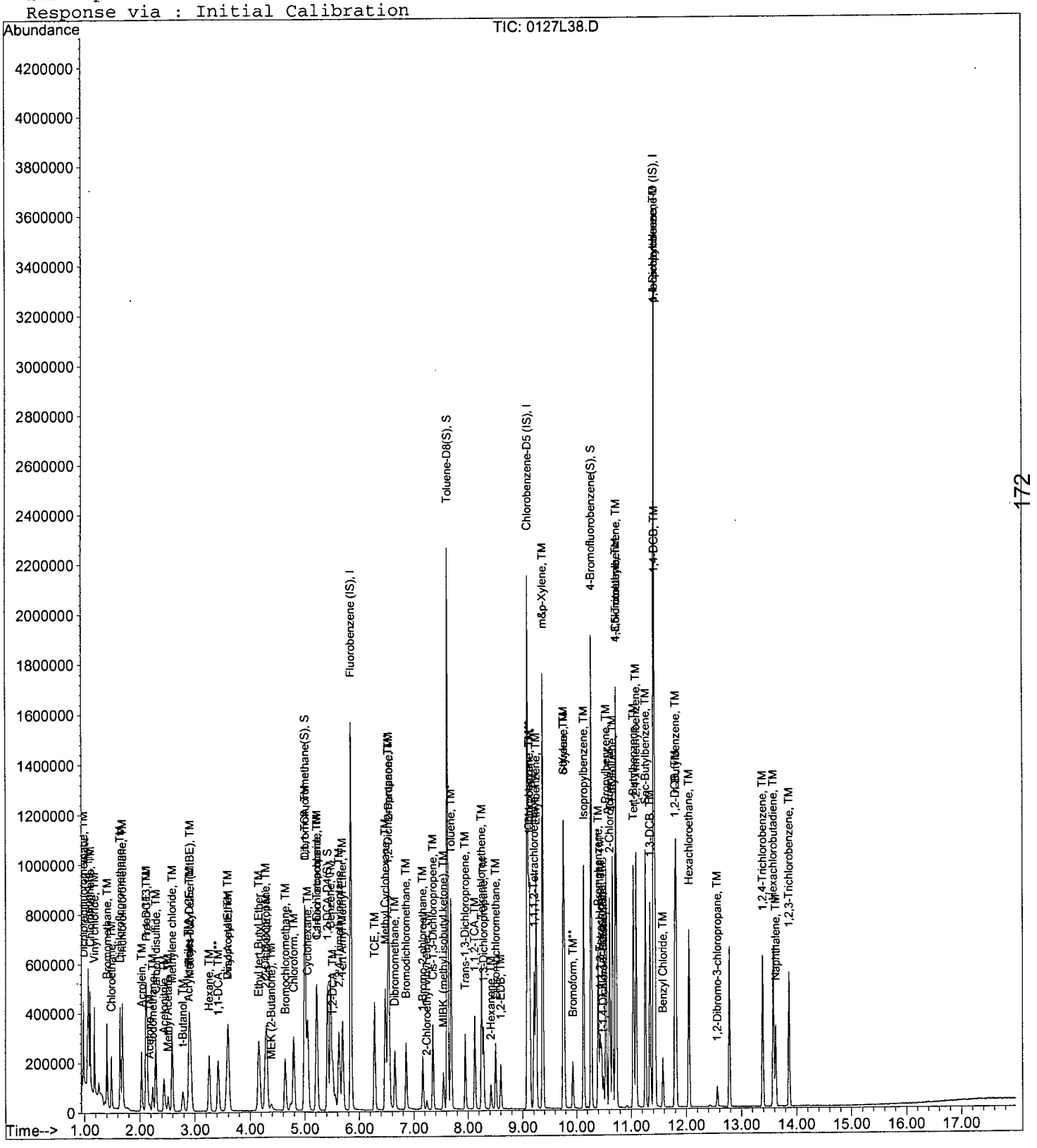
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L38.D
Acq On : 28 Jan 15 2:06
Sample : AZ10128W456 MS-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 37
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:39 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



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Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L39.D
Acq On : 28 Jan 15 2:34
Sample : AZ10128W456 MSD-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 38
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:39 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene (IS)	5.85	96	804992	25.00000 ppb	0.00
57) Chlorobenzene-D5 (IS)	9.09	117	794368	25.00000 ppb	0.00
72) 1,4-Dichlorobenzene-D (IS)	11.41	152	464128	25.00000 ppb	0.00
System Monitoring Compounds					
33) Dibromofluoromethane(S)	5.01	111	406697	21.66689 ppb	0.00
Spiked Amount 22.395			Recovery	= 96.748%	
38) 1,2-DCA-D4(S)	5.42	65	363703	19.92876 ppb	0.00
Spiked Amount 21.127			Recovery	= 94.332%	
58) Toluene-D8(S)	7.62	98	1456676	22.98288 ppb	0.00
Spiked Amount 23.536			Recovery	= 97.651%	
66) 4-Bromofluorobenzene(S)	10.27	95	550785	24.21930 ppb	0.00
Spiked Amount 23.661			Recovery	= 102.360%	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.98	85	167244	10.14473 ppb		100
3) Freon 114	1.07	85	134421	8.49154 ppb		99
4) Chloromethane	1.10	50	183012	8.64378 ppb		98
5) Vinyl chloride	1.18	62	198756	9.50481 ppb		99
6) Bromomethane	1.40	94	118156	8.46636 ppb		99
7) Chloroethane	1.49	64	103163	9.53567 ppb		100
8) Dichlorofluoromethane	1.64	67	282846	7.75127 ppb		98
9) Trichlorofluoromethane	1.69	101	254947	9.80536 ppb		100
10) Acrolein	2.03	56	168886	94.77840 ppb	#	92
11) Acetone	2.18	43	31408	8.26510 ppb		90
12) Freon-113	2.13	101	129144	8.06217 ppb		97
13) 1,1-DCE	2.11	61	180840	7.84468 ppb		99
14) t-Butanol	2.78	59	45432	106.74691 ppb		98
15) Acetonitrile	2.44	41	172121	118.27406 ppb		95
16) Methyl Acetate	2.52	43	66618	7.11840 ppb		96
17) Iodomethane	2.24	142	62056	8.20770 ppb		100
18) Acrylonitrile	2.88	52	25429	6.83621 ppb		99
19) Methylene chloride	2.59	84	151242	7.81157 ppb		100
20) Carbon disulfide	2.29	76	341297	7.57899 ppb		100
21) Methyl t-butyl ether (MtBE	2.92	73	304988	7.47521 ppb		99
22) Trans-1,2-DCE	2.90	96	135341	7.57145 ppb		99
23) Diisopropyl Ether	3.60	45	364338	7.77449 ppb		99
24) 1,1-DCA	3.42	63	229039	7.79449 ppb		97
25) Hexane	3.26	57	119727	7.22800 ppb		99
26) Vinyl Acetate	3.59	43	74823	7.33757 ppb	#	97
27) Ethyl tert Butyl Ether	4.16	59	338388	7.81675 ppb		99
28) MEK (2-Butanone)	4.38	43	44258	9.29649 ppb		90
29) Cis-1,2-DCE	4.31	96	153592	7.61779 ppb		96
30) 2,2-Dichloropropane	4.28	77	52048	6.32020 ppb		98
31) Chloroform	4.79	83	271036	8.53563 ppb		99
32) Bromochloromethane	4.64	128	76362	7.70356 ppb		95
34) 1,1,1-TCA	4.99	97	197847	7.76733 ppb		99
35) Cyclohexane	5.05	41	91721	7.71386 ppb		95
36) 1,1-Dichloropropene	5.23	75	171826	8.11463 ppb		96
37) 2,2,4-Trimethylpentane	5.63	57	324251	7.47496 ppb		99
39) Carbon Tetrachloride	5.21	117	179599	8.38017 ppb		97
40) Tert Amyl Methyl Ether	5.69	73	314671	7.77284 ppb		98
41) 1,2-DCA	5.52	62	152963	7.35531 ppb		99
42) Benzene	5.48	78	532350	7.48234 ppb		99

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

Quantitation Report (Not Reviewed)

Data File : M:\LOKI\DATA\150127\0127L39.D
Acq On : 28 Jan 15 2:34
Sample : AZ10128W456 MSD-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 38
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:39 2015 Quant Results File: LCREDW.RES

Quant Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:36:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260_BETA

Compound	R.T.	QIon	Response	Conc Unit		Qvalue
43) TCE	6.28	95	136326	7.13383	ppb	97
44) 2-Pentanone	6.54	43	850270	99.37135	ppb	99
45) 1,2-Dichloropropane	6.52	63	137178	7.68034	ppb	100
46) Bromodichloromethane	6.86	83	167955	7.62666	ppb	96
47) Methyl Cyclohexane	6.48	83	195268	7.99422	ppb	100
48) Dibromomethane	6.65	93	79438	7.73289	ppb	97
49) 2-Chloroethyl vinyl ether	7.24	106	4596	7.97005	ppb	94
50) MIBK (methyl isobutyl ket	7.55	43	93060	8.47570	ppb	97
51) 1-Bromo-2-chloroethane	7.16	63	96592	7.74114	ppb	99
52) Cis-1,3-Dichloropropene	7.35	75	194588	7.67969	ppb	99
53) Toluene	7.69	91	588583	7.82662	ppb	99
54) Trans-1,3-Dichloropropene	7.95	75	153455	7.21456	ppb	99
55) 1,1,2-TCA	8.12	83	93580	7.54409	ppb	98
56) 2-Hexanone	8.42	43	54323	7.81138	ppb	97
59) 1,2-EDB	8.60	107	111368	7.54819	ppb	97
60) Tetrachloroethene	8.25	166	170232	8.01259	ppb	95
61) 1-Chlorohexane	9.13	91	166869	7.91609	ppb	97
62) 1,1,1,2-Tetrachloroethane	9.21	131	145206	7.94409	ppb	99
63) m&p-Xylene	9.37	106	497403	15.58591	ppb	99
64) o-Xylene	9.76	106	244106	8.21993	ppb	100
65) Styrene	9.78	104	389951	8.21969	ppb	99
67) 1,3-Dichloropropane	8.29	76	183097	7.46699	ppb	96
68) Dibromochloromethane	8.51	129	131568	7.94666	ppb	97
69) Chlorobenzene	9.11	112	406329	7.79447	ppb	99
70) Ethylbenzene	9.25	91	636403	7.86821	ppb	99
71) Bromoform	9.93	173	85080	7.48984	ppb	98
73) Isopropylbenzene	10.14	105	605136	7.97342	ppb	97
74) 1,1,2,2-Tetrachloroethane	10.44	83	130980	7.28841	ppb	98
75) 1,2,3-Trichloropropane	10.46	110	39730	7.28347	ppb	95
76) t-1,4-Dichloro-2-Butene	10.50	53	26169	7.80352	ppb	95
77) Bromobenzene	10.40	156	177769	7.61444	ppb	95
78) n-Propylbenzene	10.54	91	706176	8.06833	ppb	99
79) 4-Ethyltoluene	10.66	105	611327	8.32577	ppb	99
80) 2-Chlorotoluene	10.61	91	429489	7.69451	ppb	100
81) 1,3,5-Trimethylbenzene	10.73	105	540929	8.32660	ppb	98
82) 4-Chlorotoluene	10.72	91	505032	8.11581	ppb	100
83) Tert-Butylbenzene	11.04	119	458900	8.28211	ppb	99
84) 1,2,4-Trimethylbenzene	11.09	105	534266	8.18130	ppb	99
85) Sec-Butylbenzene	11.26	105	668662	8.46971	ppb	97
86) p-Isopropyltoluene	11.41	119	559229	8.14440	ppb	99
87) Benzyl Chloride	11.58	91	132950	6.02365	ppb	99
88) 1,3-DCB	11.34	146	334267	7.71142	ppb	98
89) 1,4-DCB	11.43	146	346399	7.71808	ppb	99
90) n-Butylbenzene	11.81	91	487636	7.84114	ppb	100
91) 1,2-DCB	11.79	146	315242	7.55744	ppb	98
92) Hexachloroethane	12.05	117	124379	9.40370	ppb	99
93) 1,2-Dibromo-3-chloropropan	12.56	157	24414	7.11700	ppb	93
94) 1,2,4-Trichlorobenzene	13.39	180	196151	7.39718	ppb	99
95) Hexachlorobutadiene	13.58	225	126302	7.52966	ppb	94
96) Naphthalene	13.62	128	164352	5.82903	ppb	100
97) 1,2,3-Trichlorobenzene	13.86	180	120128	7.00763	ppb	98

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

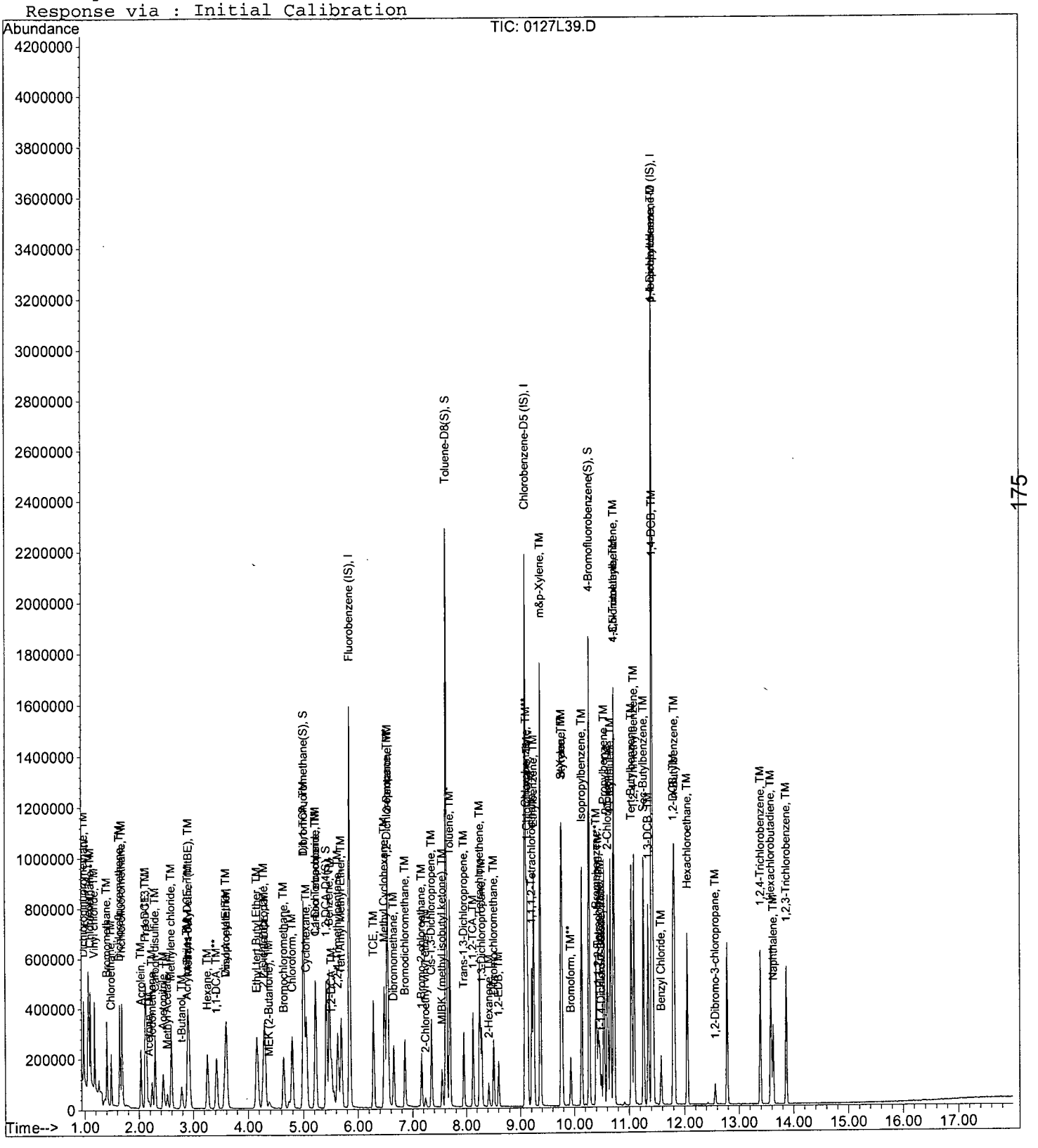
Quantitation Report

Data File : M:\LOKI\DATA\150127\0127L39.D
Acq On : 28 Jan 15 2:34
Sample : AZ10128W456 MSD-1WL
Misc : 10mL w/5uL IS&S:01/14/15,10-06-14

Vial: 38
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Quant Time: Jan 28 8:39 2015 Quant Results File: LCREDW.RES

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B
Last Update : Wed Jan 28 08:58:36 2015
Response via : Initial Calibration



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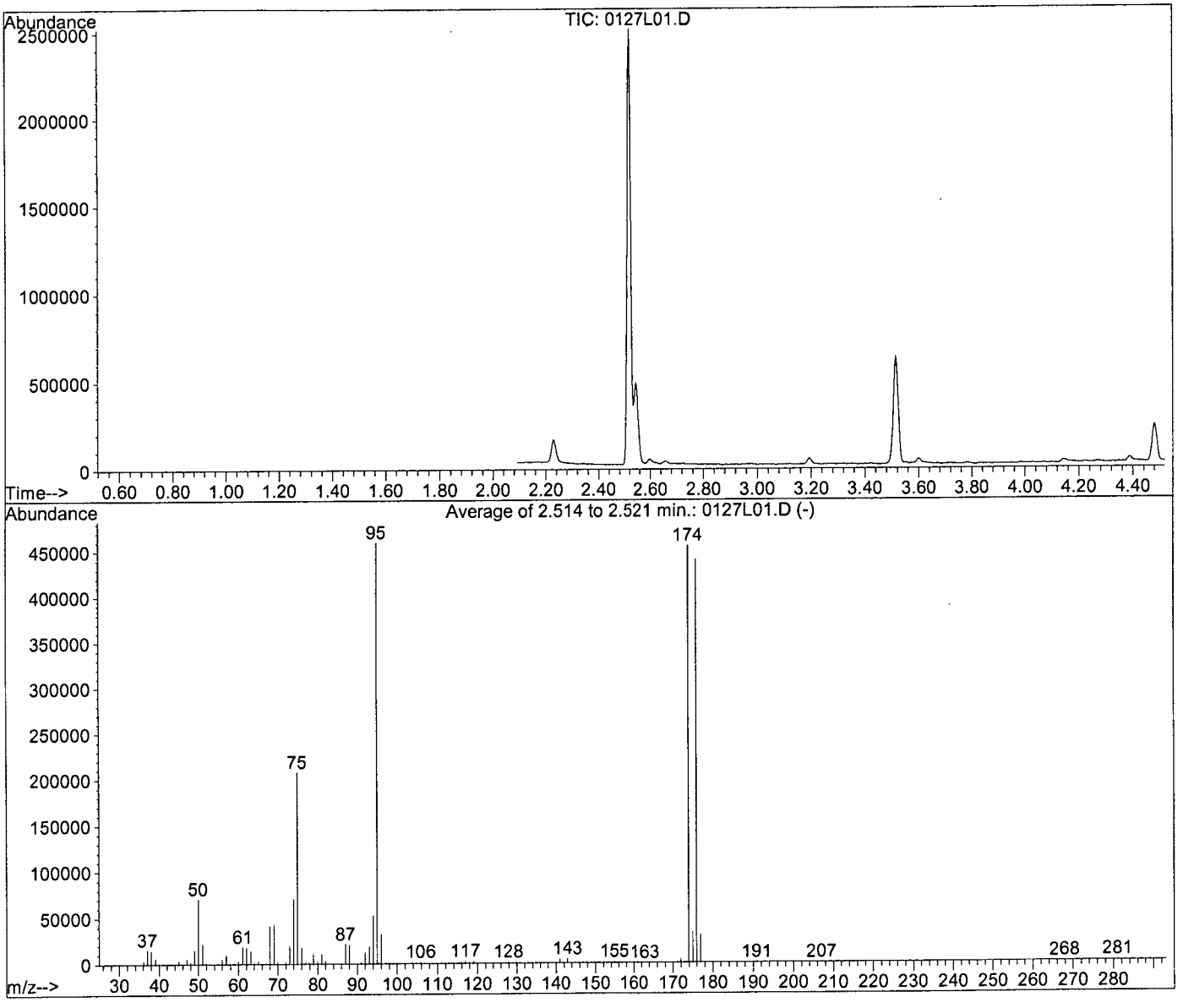
BFB

Data File : M:\LOKI\DATA\150127\0127L01.D
Acq On : 27 Jan 15 8:52
Sample : 25ug/mL BFB Std 01-09-15
Misc : 2uL

Vial: 1
Operator: DG,SV,RS
Inst : Loki
Multiplr: 1.00

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B



AutoFind: Scans 132, 133, 134; Background Corrected with Scan 120

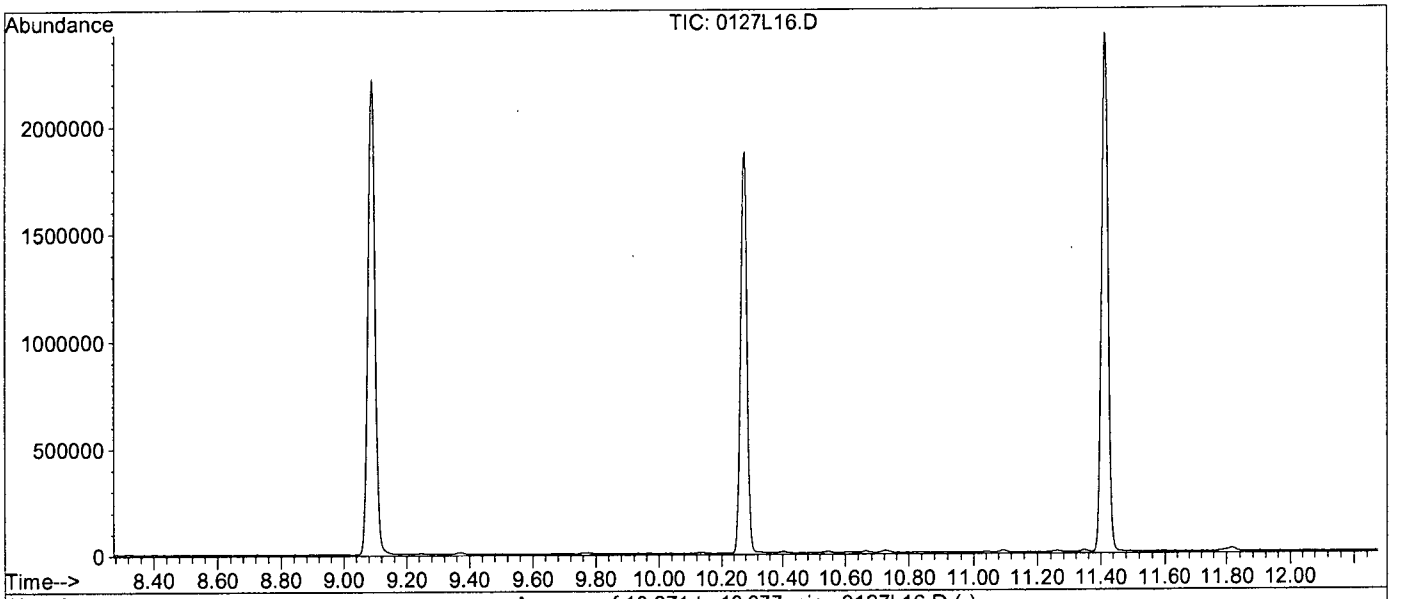
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.3	70491	PASS
75	95	30	60	45.2	207900	PASS
95	95	100	100	100.0	460053	PASS
96	95	5	9	6.9	31911	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	99.1	455957	PASS
175	174	5	9	7.3	33272	PASS
176	174	95	101	96.5	440128	PASS
177	176	5	9	6.8	29850	PASS

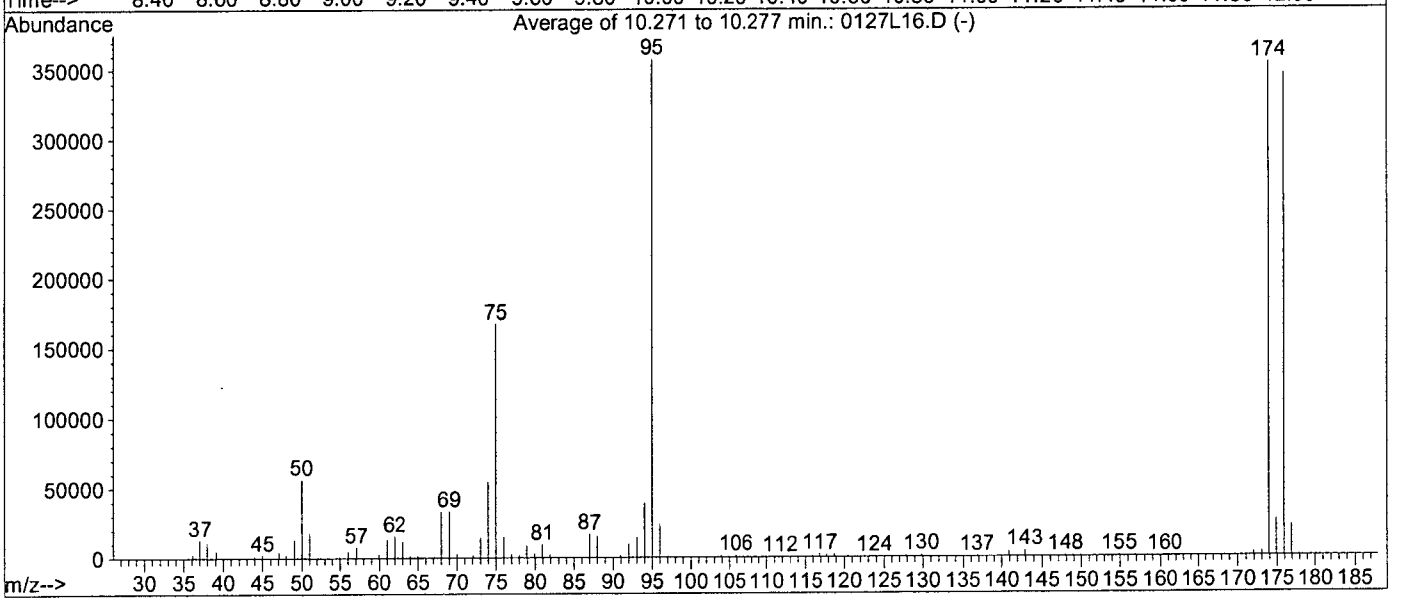
BFB

Data File : M:\LOKI\DATA\150127\0127L16.D
Acq On : 27 Jan 15 15:49
Sample : 25ug/L BFB Std 01-26-15
Misc : 2ul

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

Method : M:\LOKI\DATA\150127\LCREDW.M (RTE Integrator)
Title : METHOD 8260B





AutoFind: Scans 2902, 2903, 2904; Background Corrected with Scan 2888

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.7	56261	PASS
75	95	30	60	46.7	166997	PASS
95	95	100	100	100.0	357632	PASS
96	95	5	9	6.6	23707	PASS
173	174	0.00	2	0.9	3073	PASS
174	95	50	100	99.1	354389	PASS
175	174	5	9	7.3	25928	PASS
176	174	95	101	97.7	346091	PASS
177	176	5	9	6.4	22037	PASS

RS 1/20/15

Volatile Standard Curve Preparation for 10mL Purge (8260 water) ~~LOW~~ MAX												
Exp: Date:	01/20/15	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.	01-19-15R	01-19-15S	01-19-15T	01-19-15V	01-19-15N	01-19-15P	01-19-15O	01-19-15Q	01-19-15U	01-19-15W	w/P&T H2O
Date/code	µg/L	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	Exp:02-19-15	mL
01-19-15I	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-19-15J	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-19-15K	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-19-15L	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-19-15M	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-19-15N	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-19-15O	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-13-15P	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/19/15 RS

Gasoline
Lot #: LC01901 - 34327
Rec: 11/25/14 MFR exp. 7/31/16

Gasoline
Lot: LC01901 EXP: JUL/2016 STORAGE: ROOM TEMP. 1 x 1ml

47516-U

DATE RECEIVED:

SUPELCO
Solutions within.
595 North Harrison Road • Bellefonte, PA
16823-0048 USA • Phone 814-359-3441

STANDARD TRANSFER LABEL

Date of Preparation:
Reference Number:
Description:
Exp. Date: EXP: JUL/2016
Storage: ROOM TEMP.

1/23/15 A- RS

01-23-15B					
2000ug/ml Gasoline					
Supplier	ID #		ug/ml	Lot #	uL
Supelco	47516-U	Gasoline	20,000	LC01901-34327	200
J&T Brand		Purge & Trap MeOH		62345-00777	1800

1/23/15 RS

1/23/15 RS

Gasoline Curve Preparation for 100mL Purge (water)-THOR			
Exp Date:	01/24/15	2000ug/ml	
		Gasoline	Final Vol
	Conc.	01-23-15B	w/P&T H2O
Date/code	µg/L	Exp.02-23-15	mL
01-23-15C	20	1	100
01-23-15D	50	2.5	100
01-23-15E	100	5	100
01-23-15F	300	15	100
01-23-15G	600	30	100
01-23-15H	800	40	100
01-23-15I	1000	50	100

1/20/15 A- RS

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 - 33662
Rec: 6/3/14 MFR exp. 5/29/16

RS

GCMS STANDARD PREPARATION BOOK # 64 PAGE #

RS

01/25/15B							
50ug/ml Vol Work Std #7							
Exp:02/25/15					Date	Exp.	
			Conc.				
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	120016-03	Gas Mix	2000	231710-33820	01/17/15A	07/06/17	100
02SI	020049-02	HEXACHLOROETHANE	1000	234821-33993	01/05/15B	08/24/16	200
02SI	020228-02	Benzyl Chloride	1000	227320-33832	01/05/15C	04/28/16	200
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3500
01/25/15C							
50ug/ml Vol Work Std #1							
Exp:02/25/15					Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	020145-02-02	2-CEVE	2000	229586-33693	01/17/15B	06/03/17	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	1950
01/25/15D							
50ug/ml Vol Work Std #8							
Exp:02/25/15					Date	Exp.	
			Conc.				
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
02SI	122039-02	Volatile Mix, 20-29	2000	212173-32730	01/17/15C	07/22/15	100
02SI	120023-03	VOC'S-54 COMP	2000	216122-32915	01/17/15D	10/11/15	100
02SI	020232-02	Vinyl Acetate	2000	240463-34361	01/17/15E	02/18/15	100
02SI	020620-02	n-Hexane	1000	236597-34363	01/17/15G	09/09/17	200
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3500
01/25/15E							
50ug/ml Vol Work Std #2							
Exp:02/25/15							
Supplier	ID #	ID	ug/ml				
02SI	121020-05	HSL'S-Ketone Solution	2000	232379-33873	01/17/15H	07/14/15	100
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3900
		01/25/15F					
		5ug/ml Vol Work Std #9					
		SOURCES	**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml Vol Work Std #7		**01/25/15B**	02/25/15	200	
		50ug/ml Vol Work Std #8		**01/25/15D**	02/25/15	200	
		J&T Brand		01/12/15	07/09/18	1600	
		01/25/15G					
		5ug/ml Vol Work Std #10					
		SOURCES	**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml Vol Work Std #1		**01/25/15C**	02/25/15	200	
		J&T Brand		01/12/15	07/09/18	1800	
		01/25/15H					
		5ug/ml Vol Work Std #12					
		SOURCES	**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml Vol Work Std #2		**01/25/15E**	02/25/15	200	
		J&T Brand		01/12/15	07/09/18	1800	
01/25/15I							
50ug/ml 8260 Surrogate					Date	Exp.	
			Conc.				
Exp:02/25/15			ug/ml	Lot #	Code	Date	uL
O2SI	120002-01	8260B Surr Solution	2000	229269-33847	01/15/15A	05/26/17	100
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3900
01/25/15J							
5.0ug/ml 8260 Surrogate			**Lot**	**APPL Code**	**APPL Exp Date**	ul	
		50ug/ml 8260 Surrogate		**01/17/15U**	02/25/15	200	
J&T Brand		Purge & Trap MeOH		01/12/15	07/09/18	1800	
01/25/15K							
250ug/ml TBA/IBA/Acetonitrile/Cyclohexanone/Acrolein/2-P							
Exp:02/25/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
02SI	120166-01	Volatile Mix 4-3	2000	229587-33662	01/25/15A	05/29/16	500
02SI	020229-09	Acrolein	10000	242699-34577	01/17/15J	02/17/15	100
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	3400

1/26/15
RS

RS

01/25/15L							
50ug/ml VOC Std#5							
Exp:02/25/15			Conc.		Date	Exp.	
Supplier	ID #	ID	ug/ml	Lot #	Code	Date	ul
O2SI	120016-03-SS	8260 Gases(SS)	2000	239850-34549	01/17/15K	11/14/17	50
O2SI	020145-02-02-S	2-CEVE	2000	219465-33220	12/03/14N	12/16/15	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	1900
01/25/15M							
50ug/ml VOC Std#6							
Exp:02/25/15							
	ID #	ID	ug/ml	Lot #	Code	Date	ul
O2SI	120023-03-SS	VOC'S 54 COMP.	2000	208329-32738	12/03/14P	05/02/15	50
O2SI	120296-01-SS	Custom 8260 Solution	2000	240496-34383	01/17/15L	05/24/16	50
O2SI	020232-02-SS	Vinyl Acetate(SS)	2000	240484-34393	12/03/14Q	02/18/15	50
O2SI	020620-02-SS	n-Hexane	1000	205230-33679	12/03/14R	03/12/15	100
O2SI	020049-02-SS	HEXACHLOROETHANE	1000	226063-33536	12/03/14S	04/07/16	100
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	1650
01/25/15N							
250ug/ml TBA/IBA/Acetonitrile/Acrolein/2-P							
Exp:02/25/15			Conc.		Date	Exp.	
Supplier	ID #		ug/ml	Lot #	Code	Date	uL
O2SI	120166-01-SS	VOC Mix 4-3 (SS)	2000	189667-33306	12/03/14T	05/18/15	250
O2SI	020229-09-SS	Acrolein SOLUTION (SS)	10000	242700-34579	01/17/15M	02/17/15	50
J&T Brand		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	1700

1/25/15 RS

RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI												
Exp: Date:	01/26/15	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.	01-25-15F	01-25-15G	01-25-15H	01-2515J	01-25-15B	01-25-15D	01-25-15C	01-25-15E	01-25-15I	01-25-15K	w/P&T H2O
Date/code	µg/L	Exp:02-25-15	Exp.02-25-15	Exp:02-25-15	Exp 02-25-15	Exp.02-25-15	Exp 02-25-15	Exp:02-25-15	Exp 02-25-15	Exp:02-25-15	Exp:02-25-15	mL
01-25-15O	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-25-15P	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-25-15Q	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-25-15R	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-25-15S	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-25-15T	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-25-15U	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-25-15V	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/26/15 RS

RS

01/26/15A							
25ug/ml BFB STD			Conc.		Date	EXP:	
EXP:02/26/15			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		62345-00779	01/12/15	07/09/18	1980

1/26/15 RS.

RS

Thor 524							
01/26/15B							
10ug/ml THOR-524 Internal Standard w/ Surrogate			Conc.		Date	Exp.	
			ug/ml	Lot #	Code	Date	uL
O2SI	122450-02	524 Fortification Sol	1000	212292-32973	10-16-14A	07/23/15	150
J.T.Baker		Purge & Trap MeOH		62345-00779	01/12/15	07/09/18	14850

1/26/15 RS

RS

Volatile Standard Curve Preparation for 10mL Purge (524 water)-THOR							
Exp Date:	01/27/15	5µg/mL	5µg/mL	50µg/mL	50µg/mL	250µg/mL	
		Vol Std #9	Vol Std #12	Vol Std #7	Vol Std #8	Vol Std #2	TBA	Final Vol
	Conc.	01-25-15F	01-25-15H	01-25-15B	01-25-15D	01-25-15E	01-25-15K	w/P&T H2O
Date/code	µg/L	Exp:02-25-15	Exp:02-25-15	Exp:02-25-15	Exp:02-25-15	Exp:02-25-15	Exp:02-25-15	mL
01-26-15C	0.2	2	2	n/a	n/a	n/a	2	50
01-26-15D	0.5	5	5	n/a	n/a	n/a	5	50
01-26-15E	1	10	10	n/a	n/a	n/a	10	50
01-26-15F	5	n/a	n/a	5	5	5	20	50
01-26-15G	10	n/a	n/a	10	10	10	25	50
01-26-15H	10	n/a	n/a	20	20	20	30	50
01-26-15I	40	n/a	n/a	40	40	40	35	50
01-26-15J	100	n/a	n/a	100	100	100	40	50

1/26/15 RS

1/27/15 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-THOR												
Exp Date:	01/28/15	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.	01-25-15F	01-25-15G	01-25-15H	01-25-15J	01-25-15B	01-25-15D	01-25-15C	01-25-15E	01-25-15I	01-25-15K	w/P&T H2O
Date/code	µg/L	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp.02-25-15	Exp.02-25-15	Exp.02-25-15	mL
01-27-15A	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-27-15B	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-27-15C	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-27-15D	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-27-15E	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-27-15F	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-27-15G	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-27-15H	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/27/15 RS

Volatile Standard Curve Preparation for 10mL Purge (8260 water)-LOKI												
Exp Date:	01/28/15	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.	01-25-15F	01-25-15G	01-25-15H	01-25-15J	01-25-15B	01-25-15D	01-25-15C	01-25-15E	01-25-15I	01-25-15K	w/P&T H2O
Date/code	µg/L	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	Exp 02-25-15	mL
01-27-15I	0.1	1	1	1	2	n/a	n/a	n/a	n/a	n/a	1	50
01-27-15J	0.3	3	3	3	6	n/a	n/a	n/a	n/a	n/a	2	50
01-27-15K	0.5	5	5	5	10	n/a	n/a	n/a	n/a	n/a	5	50
01-27-15L	1	10	10	10	20	n/a	n/a	n/a	n/a	n/a	10	50
01-27-15M	5	n/a	n/a	n/a	n/a	5	5	5	5	10	20	50
01-27-15N	10	n/a	n/a	n/a	n/a	10	10	10	10	25	25	50
01-27-15O	20	n/a	n/a	n/a	n/a	20	20	20	20	40	30	50
01-27-15P	40	n/a	n/a	n/a	n/a	40	40	40	40	80	35	50
01-27-15Q	100	n/a	n/a	n/a	n/a	100	100	100	100	100	40	50

1/29/15 RS A-

Method 8260 Gases, 2000 mg/L, 2 x 0.6 ml
120016-03
Lot # Storage Expiry
231710 ≤ -10 °C 6/Jul/2017
Solv: P/T Methanol

Method 8260 Gases
Lot #: 231710 - 33821
Rec: 7/15/14 MFR exp. 7/6/17

RS

1/29/15 RS B-

Hexachloroethane Solution, 1000 mg/L, 1 mL
020049-03
Lot # Storage Expiry
234821 ≤ -10 Degrees 24/Aug/2016
Solv: P/T Methanol

Hexachloroethane
Lot #: 234821 - 33994
Rec: 8/27/14 MFR exp. 8/24/16

RS

1/29/15 RS C-

Benzyl Chloride Solution, 1000 mg/L, 1 mL
020218-03
Lot # Storage Expiry
227310 ≤ -10 Degrees C 28/Apr/2016
Solv: P/T Methanol

Benzyl Chloride
Lot #: 227320 - 33833
Rec: 7/15/14 MFR exp. 4/28/16

RS

1/29/15 RS D-

2-Chloroethyl Vinyl Ether Solution, 2,000 mg/L, 2 x 0.6 mL
028145-02-02
Lot # Storage Expiry
229586 ≤ -10 Degrees 3/Jun/2017
Solv: P/T Methanol

2-Chloroethyl vinyl ether
Lot #: 229586 - 33694
Rec: 6/3/14 MFR exp. 6/3/17

RS

Injection Log

Directory: M:\LOKI\DATA\150127\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0127L01.D	1	25ug/mL BFB Std 01-09-15	2uL	27 Jan 15 8:52
2	4	0127L05.D	1	0.1ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 10:39
3	6	0127L07.D	1	0.5ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 11:35
4	7	0127L08.D	1	1.0ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 12:03
5	8	0127L09.D	1	5.0ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 12:32
6	9	0127L10.D	1	10ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 13:00
7	10	0127L11.D	1	20ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 13:28
8	11	0127L12.D	1	40ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 13:56
9	12	0127L13.D	1	100ug /L Vol Std 01-27-15	10mL w/5uL IS&S:01/14/15,	27 Jan 15 14:24
10	15	0127L16.D	1	25ug/L BFB Std 01-26-15	2ul	27 Jan 15 15:49
11	16	0127L17.D	1	10ug /L Std 1-27-15(CCV)	10mL w/5uL IS&S:01/14/15,	27 Jan 15 16:17
12	17	0127L18.D	1	10ug /L Std 1-27-15(SS)	10mL w/5uL IS&S:01/14/15,	27 Jan 15 16:45
13	18	0127L19.D	1	150127A LCS-1WL	10mL w/5uL IS&S:01/14/15,	27 Jan 15 17:13
14	23	0127L24.D	1	150127A BLK-1WL	10mL w/5uL IS&S:01/14/15,	27 Jan 15 19:34
15	25	0127L26.D	1	AZ10129W01	10mL w/5uL IS&S:01/14/15,	27 Jan 15 20:30
16	32	0127L33.D	1	AZ10126W01	10mL w/5uL IS&S:01/14/15,	27 Jan 15 23:46
17	33	0127L34.D	1	AZ10127W01	10mL w/5uL IS&S:01/14/15,	28 Jan 15 00:14
18	34	0127L35.D	1	AZ10128W01	10mL w/5uL IS&S:01/14/15,	28 Jan 15 00:42
19	37	0127L38.D	1	AZ10128W456 MS-1WL	10mL w/5uL IS&S:01/14/15,	28 Jan 15 2:06
20	38	0127L39.D	1	AZ10128W456 MSD-1WL	10mL w/5uL IS&S:01/14/15,	28 Jan 15 2:34

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: **A15012W-10128 - 193866**
Batch ID: #RSK50-A150127a

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	01/27/15	01/27/15

Quant Method:RSK175Q.M
Run #:0127F003
Instrument:Frodo
Sequence:150126
Initials:MA

GC SC-Blank-REG MDLs
Printed: 01/28/15 3:17:58 PM

Laboratory Control Spike Recovery

MEE

APPL ID: **150127W-10128 LCS - 193866**
Batch ID: #RSK50-A150127a

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
METHANE	13.3	11.9	89.5	72-125

Comments: _____

Primary	SPK
Quant Method :	RSK175Q.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	Frodo
Run :	0127F002
Initials :	MA

Printed: 01/28/15 3:17:59 PM
APPL Standard LCS

Matrix Spike Recoveries

MEE

APPL ID: **150127W-10128 MS - 193866**
Batch ID: #RSK50-A150127a
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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
METHANE	13.3	ND	15.2	15.4	114	116	72-125	1.3	30

Comments: _____

Primary	SPK	DUP
Quant Method :	RSK175Q.M	RSK175Q.M
Extraction Date :	01/27/15	01/27/15
Analysis Date :	01/27/15	01/27/15
Instrument :	Frodo	Frodo
Run :	0127F010	0127F011
Initials :	MA	

Printed: 01/28/15 3:18:01 PM
APPL MSD SCII

RSK 175

Form 4

Blank Summary

Lab Name: APPL, Inc.
Case No: 75450
Matrix: WATER
Blank ID: A150127a-BLK

SDG No: 75450
Date Analyzed: 01/27/15
Instrument: Frodo
Time Analyzed: 1135

APPL ID.	Client Sample No.	File ID.	Date Analyzed
A150127a-LCS	Lab Control Spike	0127F002	01/27/15 1000
A150127a-BLK	Blank	0127F003	01/27/15 1135
AZ10126	RHMW07-GW-02	0127F004	01/27/15 1140
AZ10127	RHMW07-GW-02FD	0127F005	01/27/15 1144
AZ10128	RHMW06-GW-02	0127F006	01/27/15 1148
A150127a-MS	Matrix Spike	0127F010	01/27/15 1205
A150127a-MSD	Matrix SpikeD	0127F011	01/27/15 1209

Comments: Batch: #RSK50-A150127a

RSK 175

Form 4

LCS Summary

Lab Name: APPL, Inc.
Case No: 75450
Matrix: WATER
LCS ID: A150127a-LCS

SDG No: 75450
Date Analyzed: 01/27/15
Instrument: Frodo
Time Analyzed: 1000

APPL ID.	Client Sample No.	File ID.	Date Analyzed
A150127a-LCS	Lab Control Spike	0127F002	01/27/15 1000
A150127a-BLK	Blank	0127F003	01/27/15 1135
AZ10126	RHMW07-GW-02	0127F004	01/27/15 1140
AZ10127	RHMW07-GW-02FD	0127F005	01/27/15 1144
AZ10128	RHMW06-GW-02	0127F006	01/27/15 1148
A150127a-MS	Matrix Spike	0127F010	01/27/15 1205
A150127a-MSD	Matrix SpikeD	0127F011	01/27/15 1209

Comments: Batch: #RSK50-A150127a

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 Phase 1b
Sample ID: RHMW07-GW-02
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10126
QCG: #RSK50-A150127a-193866

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	01/27/15	01/27/15

Quant Method: RSK175Q.M
Run #: 0127F004
Instrument: Frodo
Sequence: 150126
Dilution Factor: 1
Initials: MA

Printed: 01/28/15 3:18:02 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\150126\0127F004.D Vial: 4
Acq On : 27 Jan 2015 11:40 Operator: SD
Sample : AZ10126W03 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 27 15:42 2015 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Jan 27 13:54:02 2015
Response via : Multiple Level Calibration

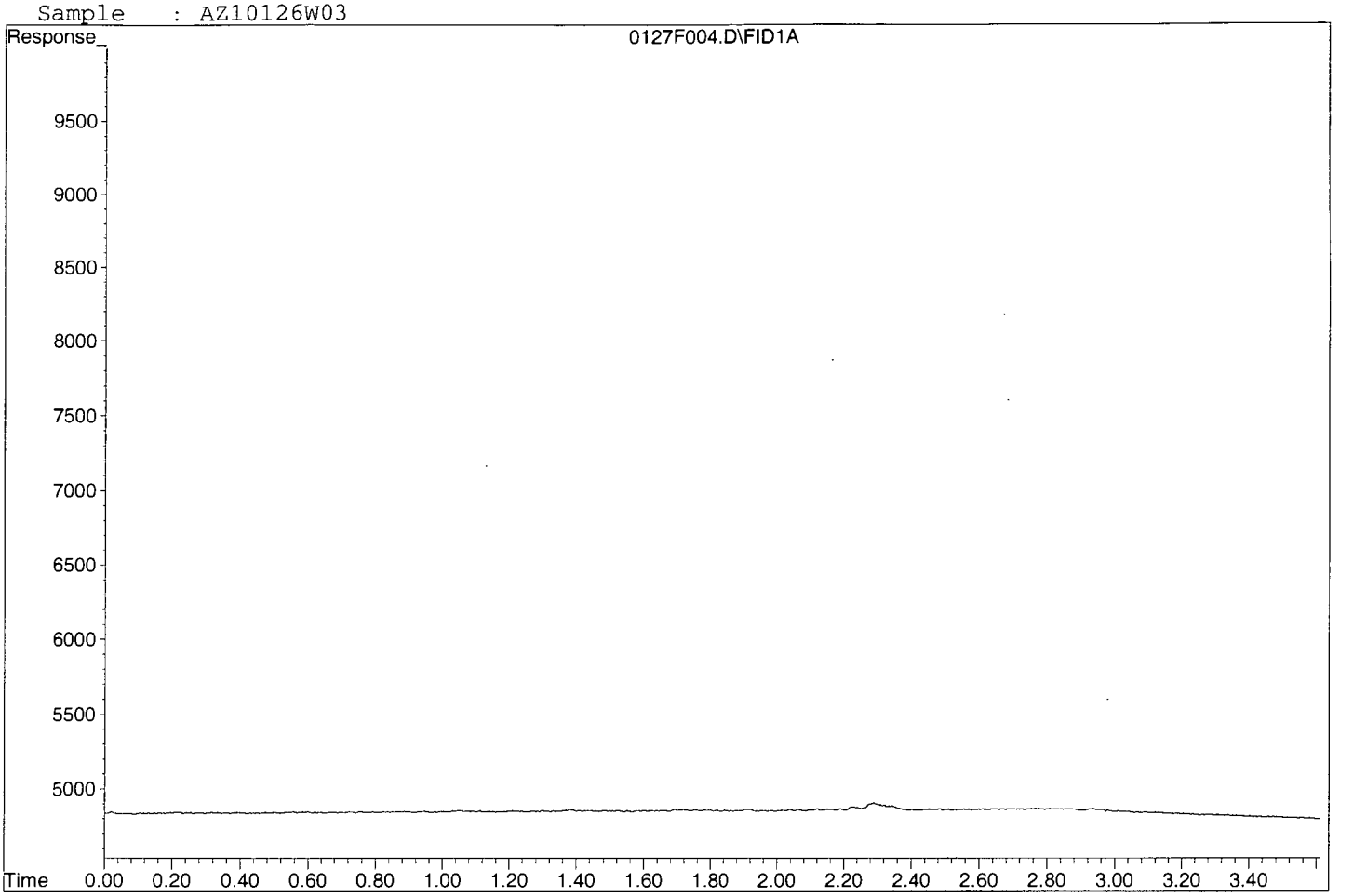
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Data File: V:\FRODO\DATA\150126\0127F004.D
Sample : AZ10126W03



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 Phase 1b
Sample ID: RHMW07-GW-02FD
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10127
QCG: #RSK50-A150127a-193866

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	01/27/15	01/27/15

Quant Method:	RSK175Q.M
Run #:	0127F005
Instrument:	Frodo
Sequence:	150126
Dilution Factor:	1
Initials:	MA

Printed: 01/28/15 3:18:02 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\150126\0127F005.D Vial: 5
Acq On : 27 Jan 2015 11:44 Operator: SD
Sample : AZ10127W03 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 27 15:42 2015 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Jan 27 13:54:02 2015
Response via : Multiple Level Calibration

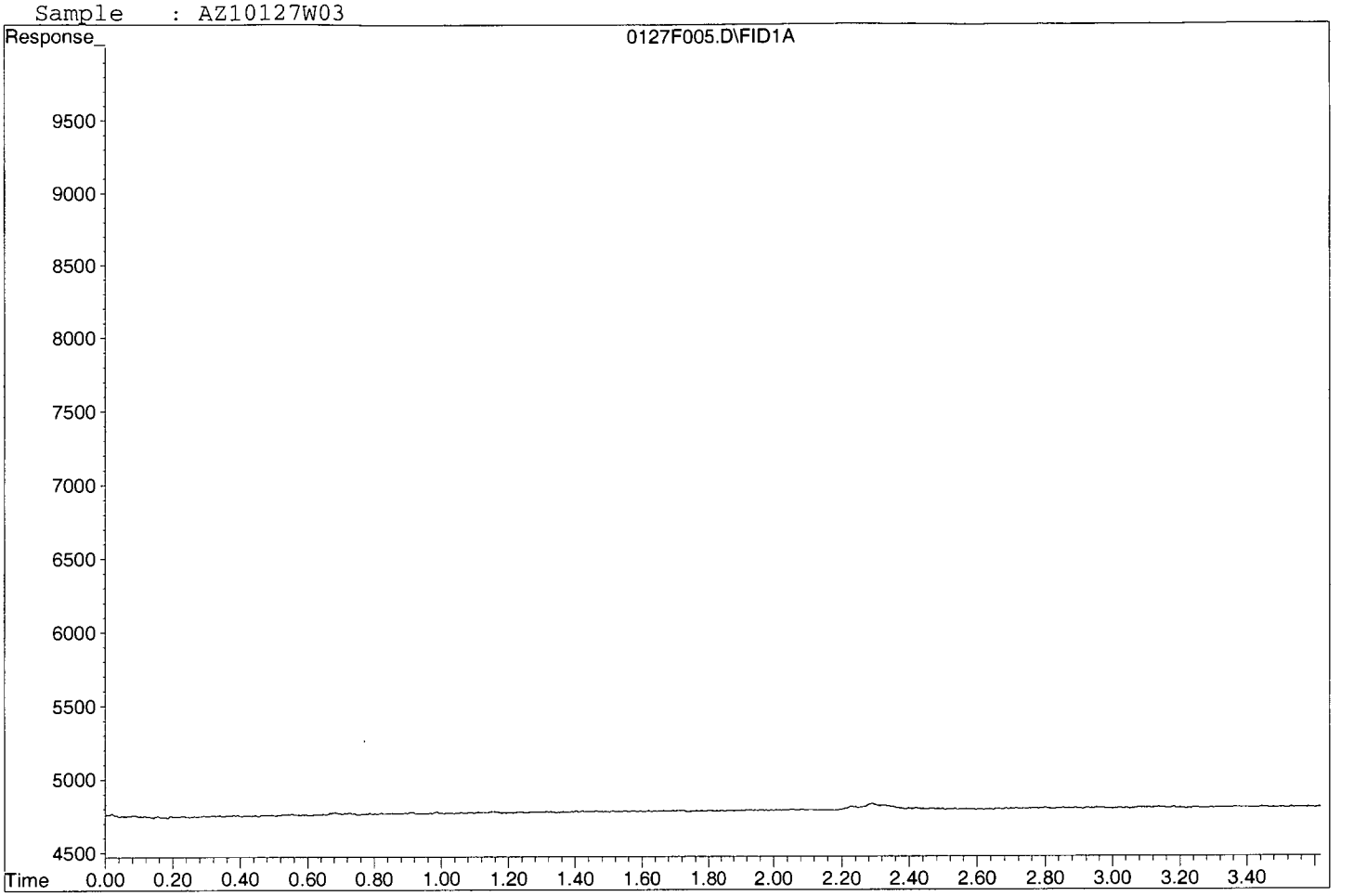
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.
0127F005.D RSK175Q.M Tue Jan 27 15:42:46 2015

Data File: V:\FRODO\DATA\150126\0127F005.D
Sample : AZ10127W03



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 Phase 1b
Sample ID: RHMW06-GW-02
Sample Collection Date: 01/23/15

ARF: 75450
APPL ID: AZ10128
QCG: #RSK50-A150127a-193866

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	01/27/15	01/27/15

Quant Method: RSK175Q.M
Run #: 0127F006
Instrument: Frodo
Sequence: 150126
Dilution Factor: 1
Initials: MA

Printed: 01/28/15 3:18:02 PM
APPL-F1-SC-NoMC-REG MDLs

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\150126\0127F006.D Vial: 6
Acq On : 27 Jan 2015 11:48 Operator: SD
Sample : AZ10128W03 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 27 15:43 2015 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Jan 27 13:54:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

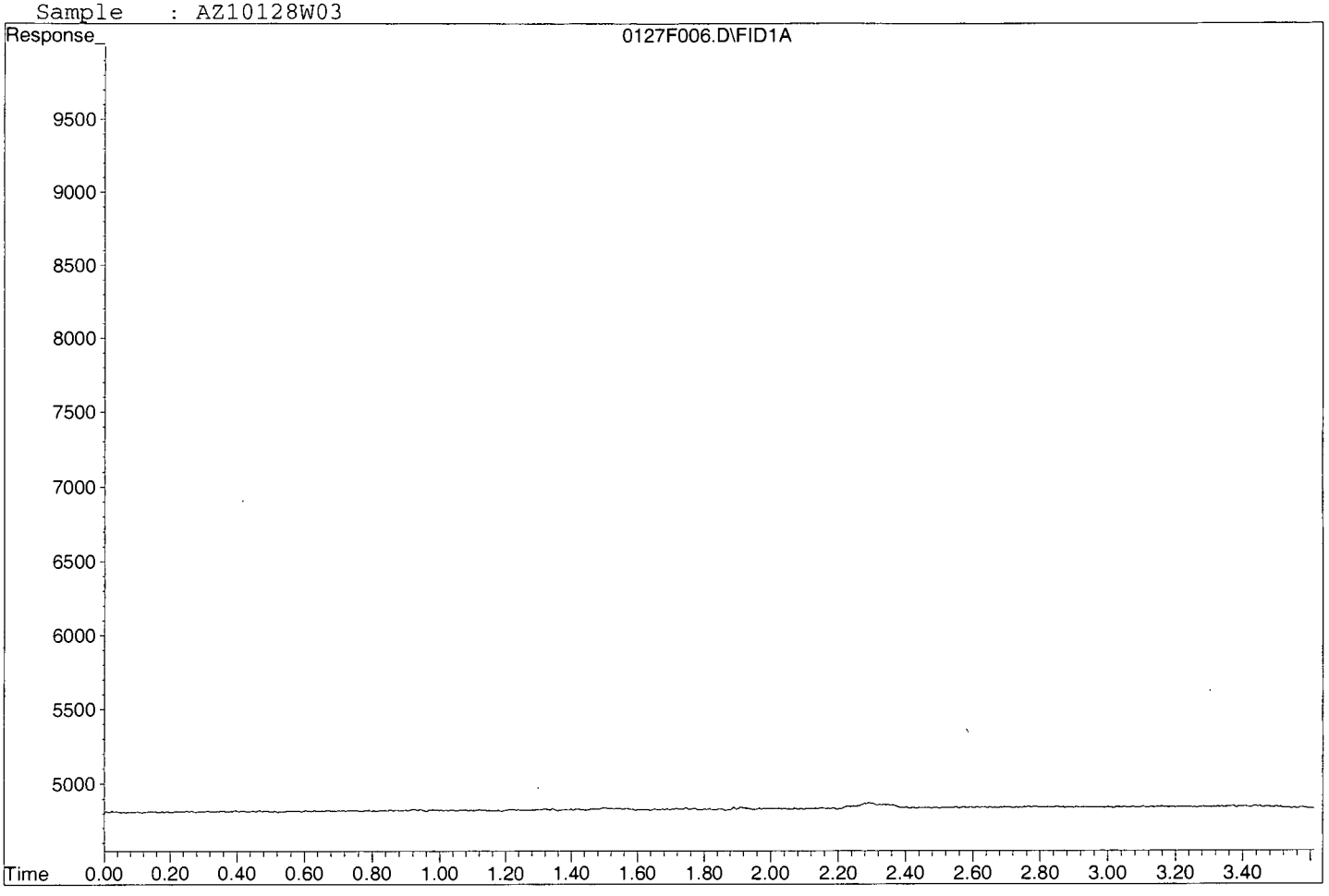
Compound	R.T.	Response	Conc	Units

Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\150126\0127F006.D
Sample : AZ10128W03



RSK-175
Calibration Data

APPL, INC.

Form 6
Initial Calibration

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

SDG No: 75450
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													
6													
7													
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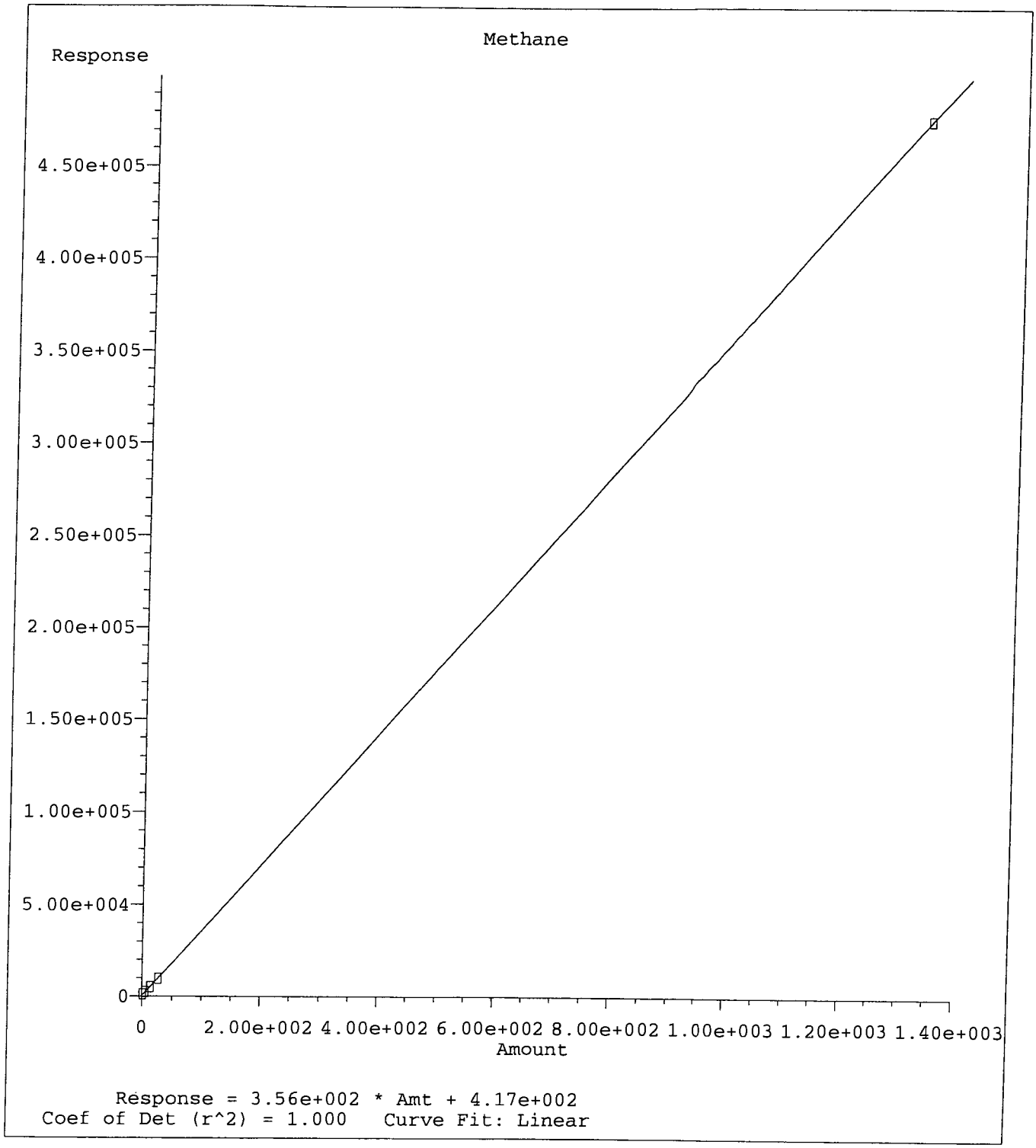
2.8108498



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	13.330	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
Acq On : 6 Mar 2013 10:46
Sample : RSK L-1 03-06-13 LF
Misc : Water
IntFile : events.e
Quant Time: Mar 7 13:31 2013 Quant Results File: RSK175Q.RES

Vial: 1
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

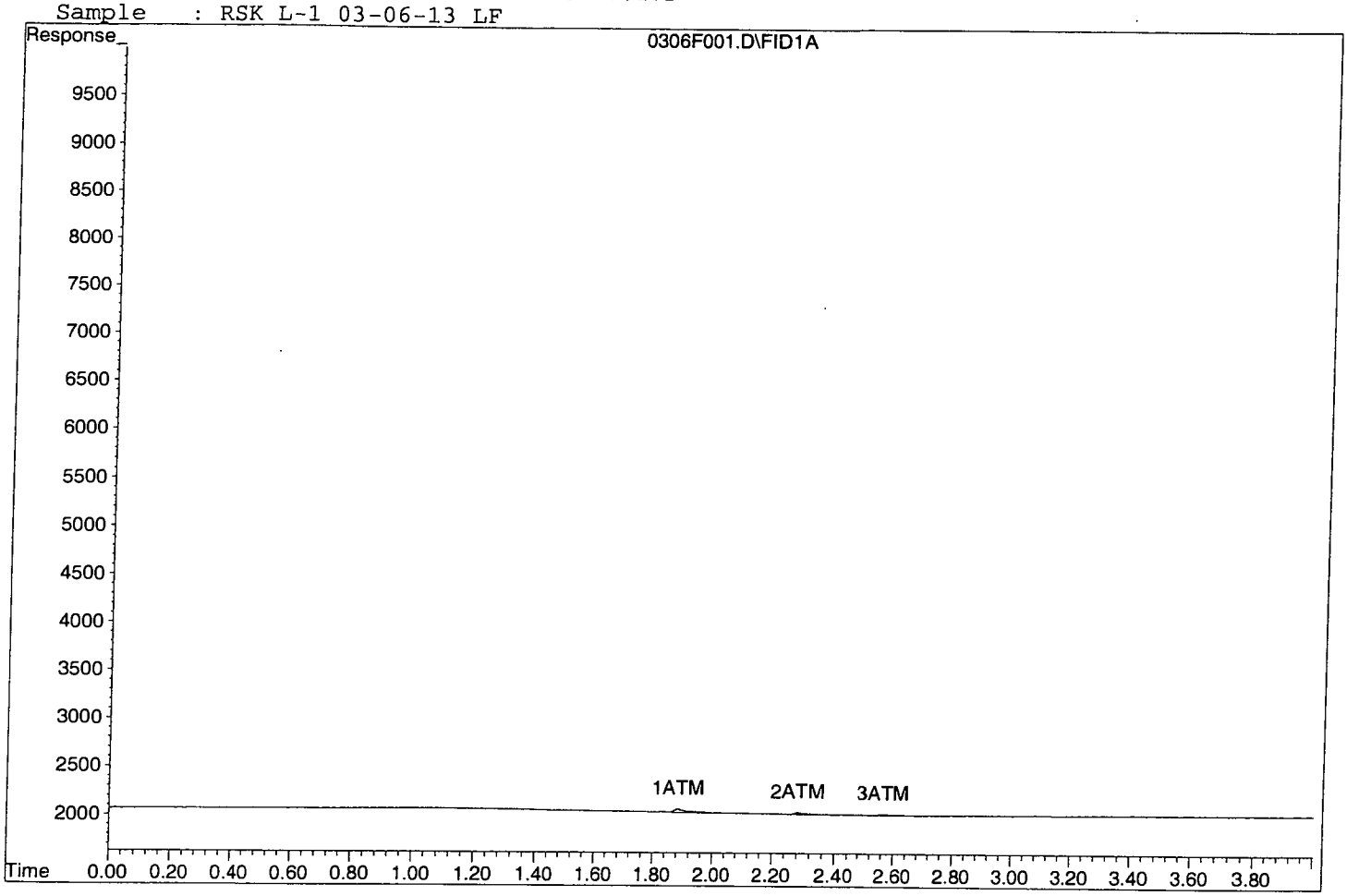
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	1.89	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
Acq On : 6 Mar 2013 10:55
Sample : RSK L-2 03-06-13 LF
Misc : Water
IntFile : events.e
Quant Time: Mar 6 11:00 2013 Quant Results File: RSK175Q.RES

Vial: 2
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

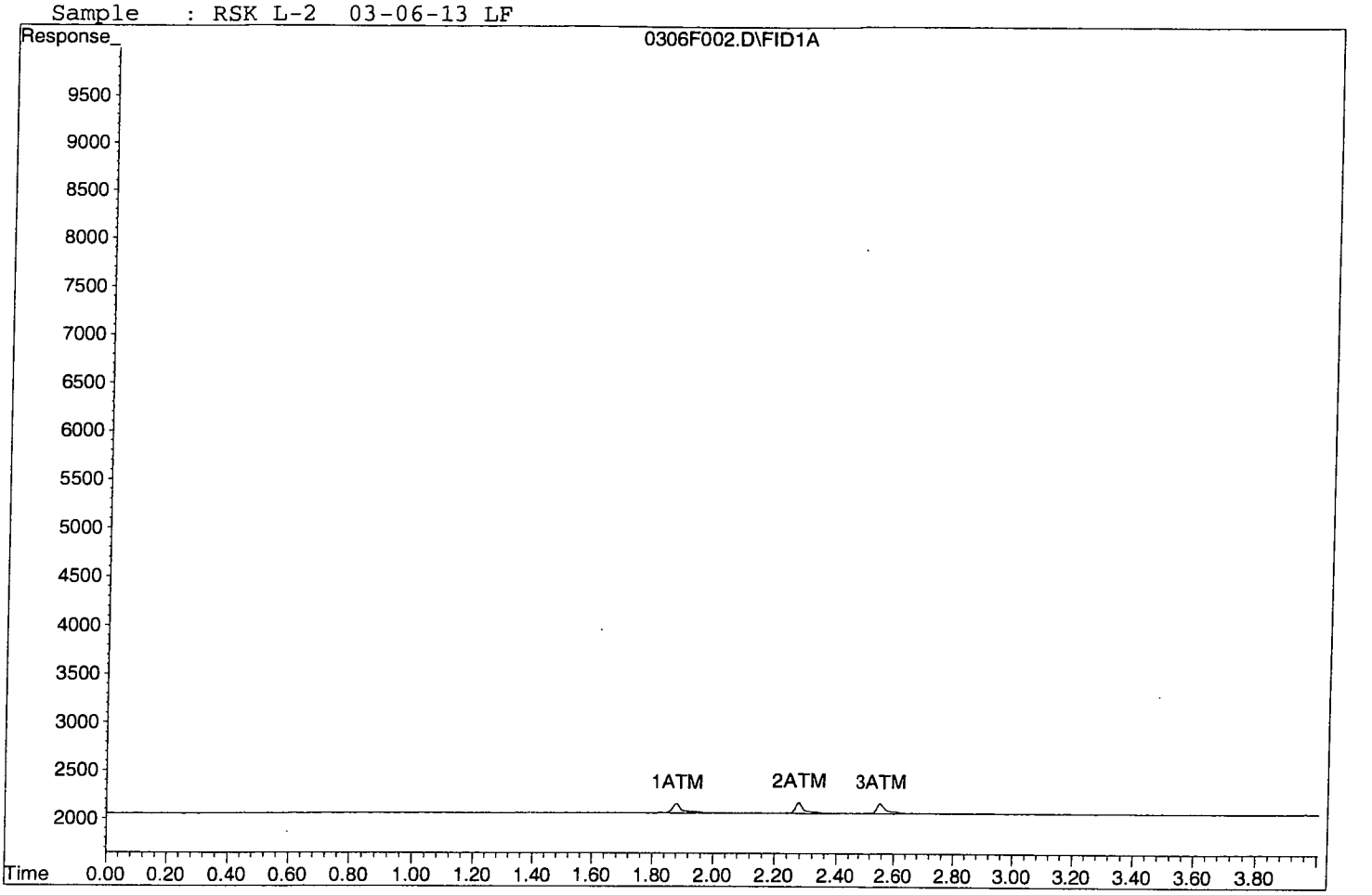
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	1.88	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



0306F002.D RSK175Q.M Mon Dec 01 13:28:04 2014

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 03-06-13 LF Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : events.e
Quant Time: Mar 6 11:05 2013 Quant Results File: RSK175Q.RES

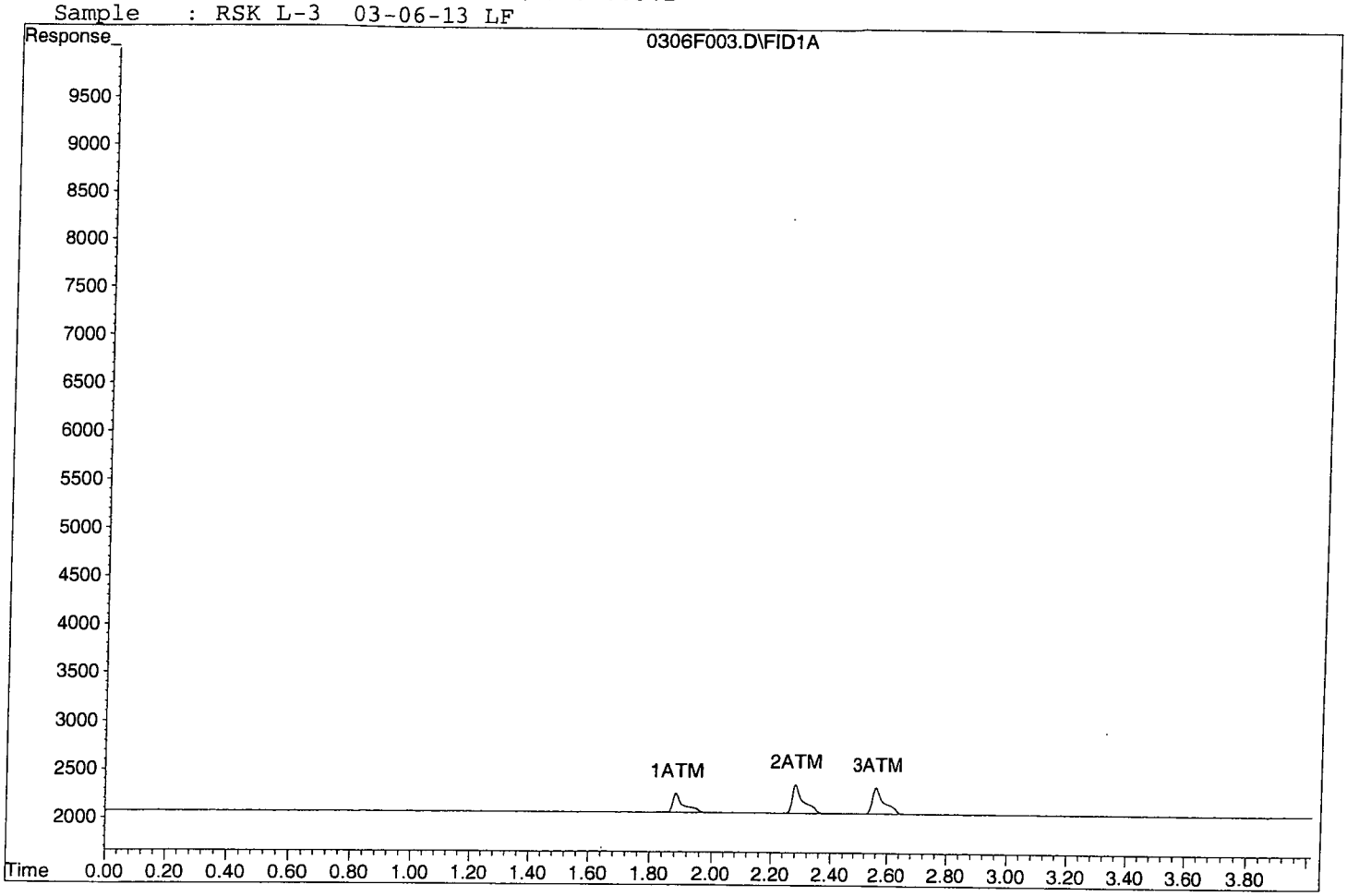
Method : V:\FRODO\DATA\130306\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

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

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
Acq On : 6 Mar 2013 11:05
Sample : RSK L-4 03-06-13 LF
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 : Mon Aug 25 21:41:08 2014
Response via : Multiple Level Calibration

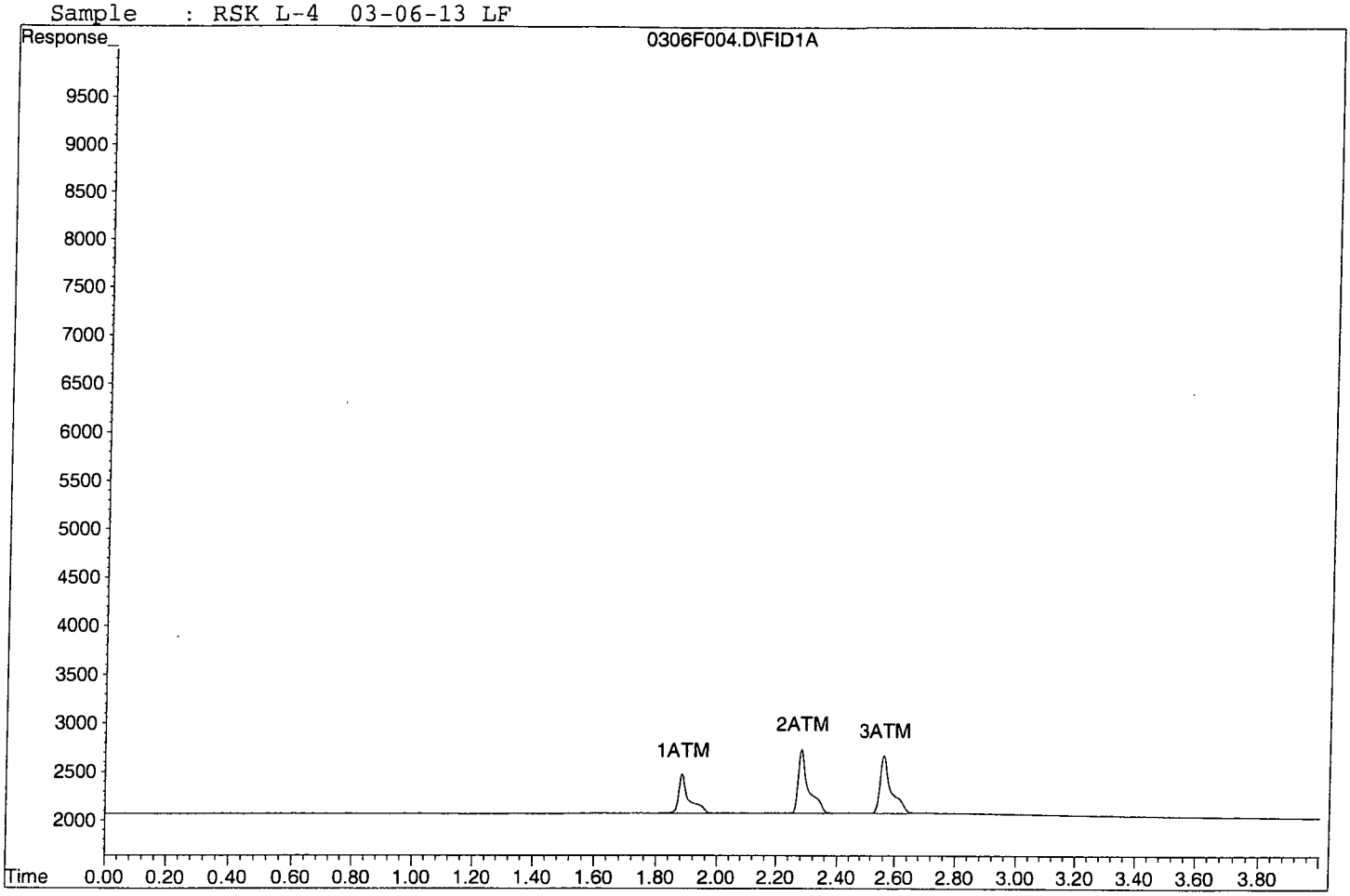
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

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
Acq On : 6 Mar 2013 11:09
Sample : RSK L-7 03-06-13 LF
Misc : Water
IntFile : events.e
Quant Time: Mar 6 11:15 2013 Quant Results File: RSK175Q.RES

Vial: 5
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

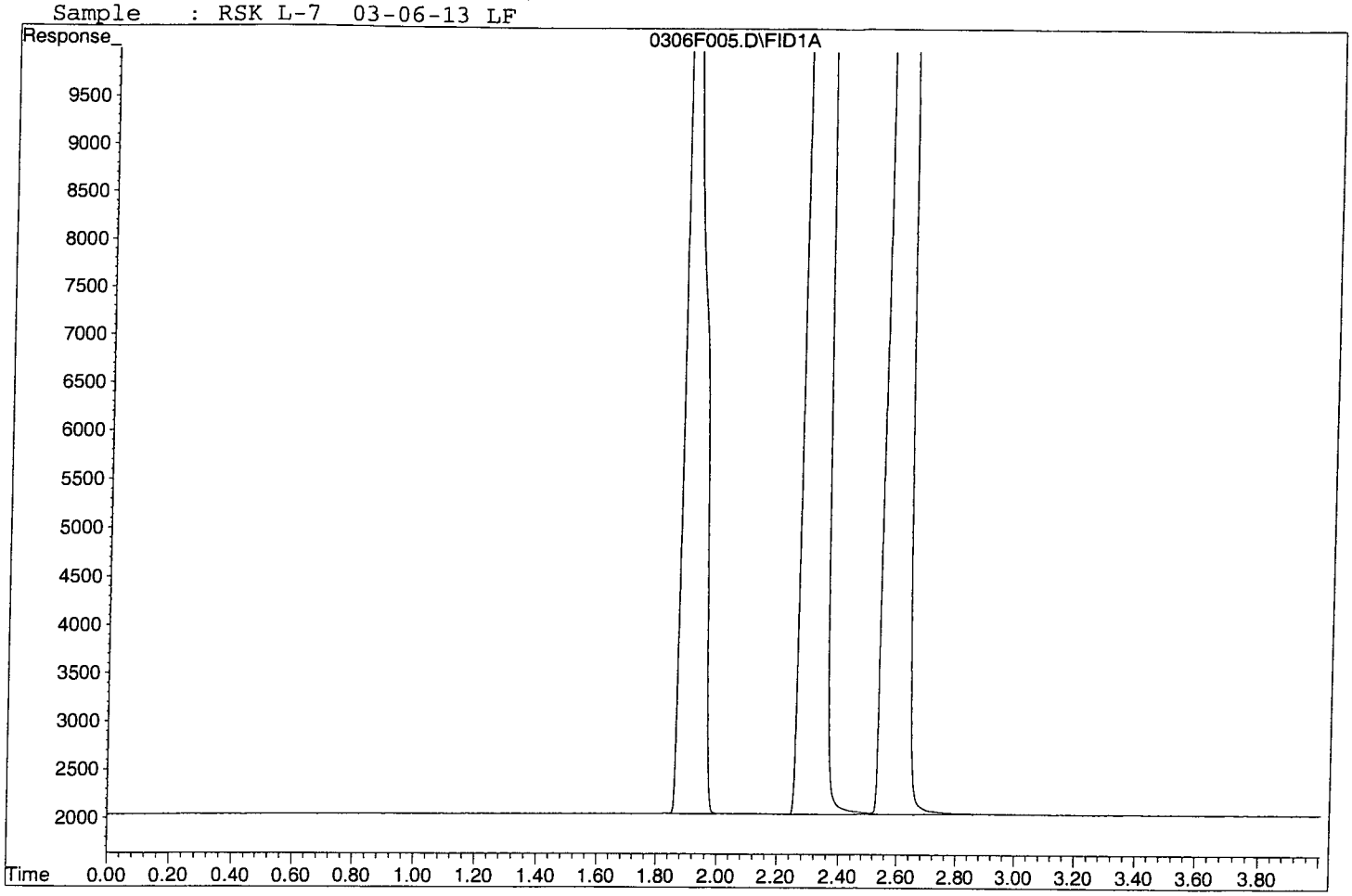
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	1.88	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: 75450
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							
5							
6							
7							
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40							
		Average			15.5		

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\130306\0306F008.D
Acq On : 6 Mar 2013 11:53
Sample : 130306A LCS-1 (SS)
Misc : Water
IntFile : events.e
Quant Time: Mar 7 13:33 2013 Quant Results File: RSK175Q.RES

Vial: 8
Operator: lsf
Inst : Frodo
Multiplr: 1.00

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

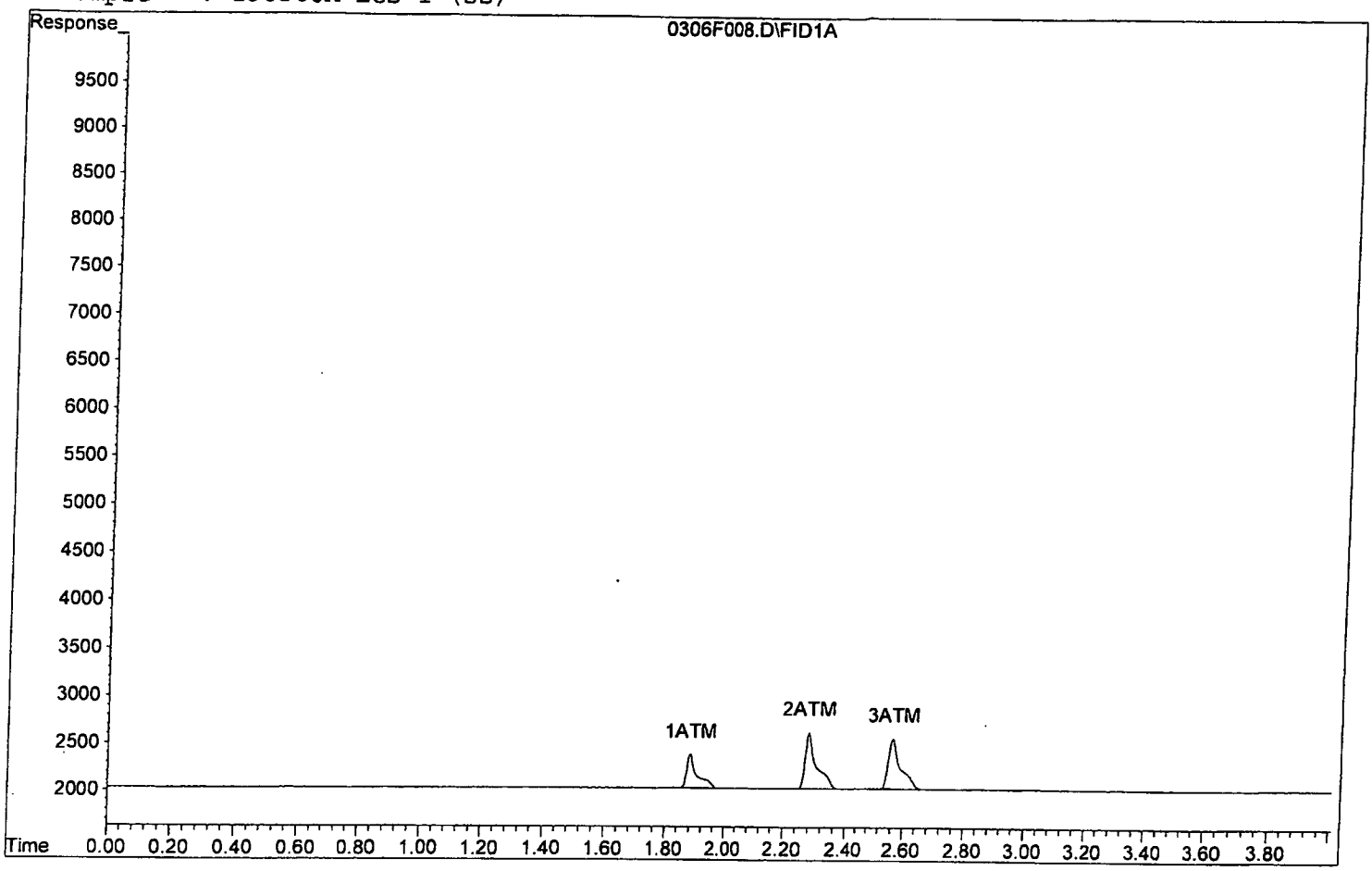
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

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: 75450
Date Analyzed: 01/27/15
Instrument: Frodo
Initial Cal. Date: 01/26/15
Data File: 0127F001.D

		Compound	MEAN	CCRF	%D	%Drift	
1	ATML	Methane	565	417	26	ATML	8.3
2	ATM	Ethane	312	320	2.7	ATM	
3	ATM	Ethene	328	323	1.5	ATM	
4							
5							
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40							
		Average			10.1		

Quantitation Report (Not Reviewed)

Data File : V:\FRODO\DATA\150126\0127F001.D Vial: 1
Acq On : 27 Jan 2015 08:47 Operator: SD
Sample : RSK CCV3 01/26/15 RS Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 27 8:53 2015 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Jan 26 17:04:45 2015
Response via : Multiple Level Calibration

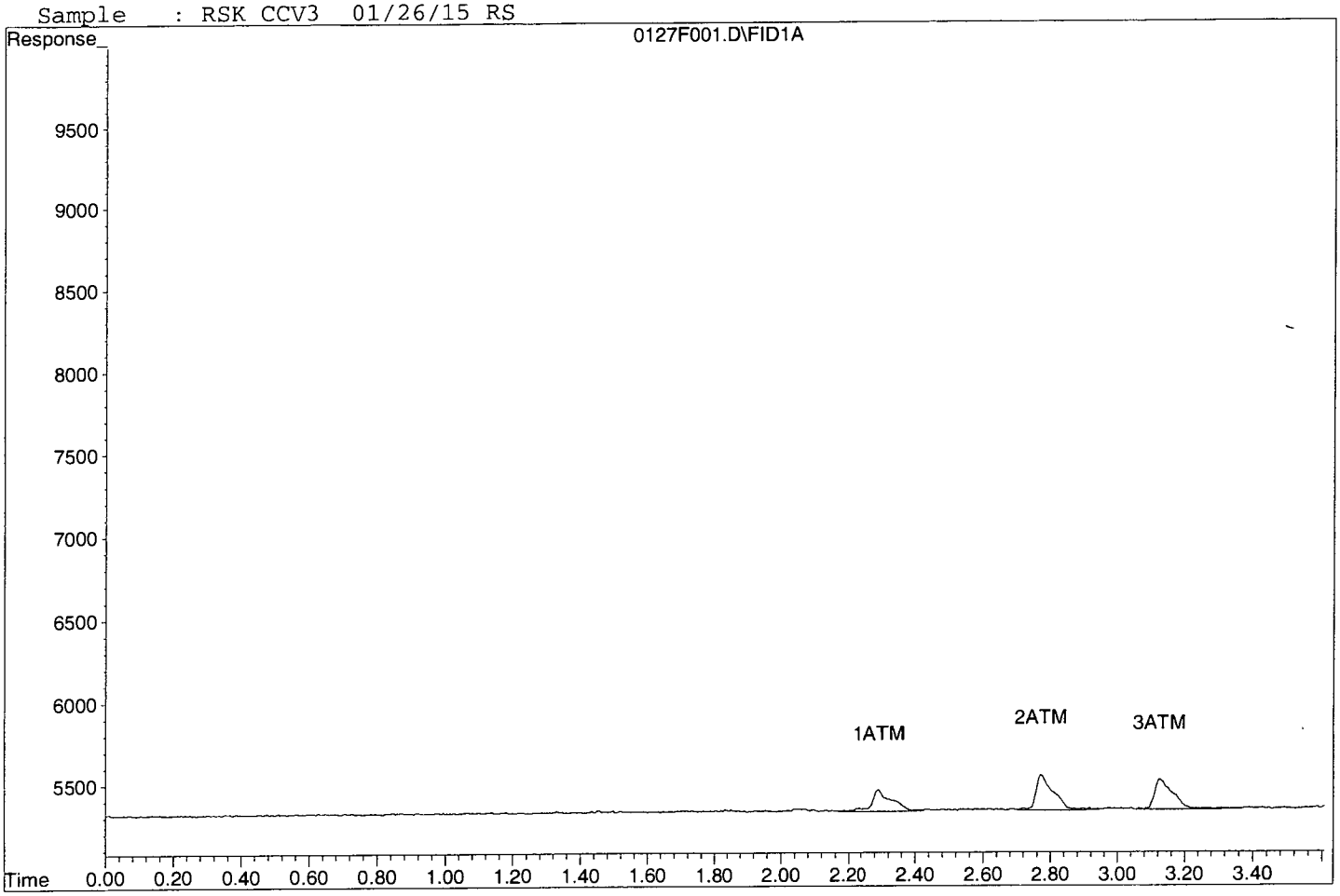
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	2.29f	5564	14.444 ppb
2) ATM Ethane	2.78f	8011	25.674 ppb
3) ATM Ethene	3.13f	7534	22.945 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File: V:\FRODO\DATA\150126\0127F001.D
Sample : RSK CCV3 01/26/15 RS



Form 7

Continuing Calibration

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

SDG No: 75450
Date Analyzed: 01/27/15
Instrument: Frodo
Initial Cal. Date: 01/26/15
Data File: 0127F014.D

		Compound	MEAN	CCRF	%D	%Drift	
1	ATML	Methane	565	455	20	ATML	19
2	ATM	Ethane	312	346	11	ATM	
3	ATM	Ethene	328	350	6.6	ATM	
4							
5							
6							
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		Average			12.5		

Quantitation Report (Not Reviewed)

Data File : V:\FRODO\DATA\150126\0127F014.D Vial: 14
Acq On : 27 Jan 2015 12:22 Operator: SD
Sample : RCK CCV3 01/27/15 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 27 12:29 2015 Quant Results File: RSK175Q.RES

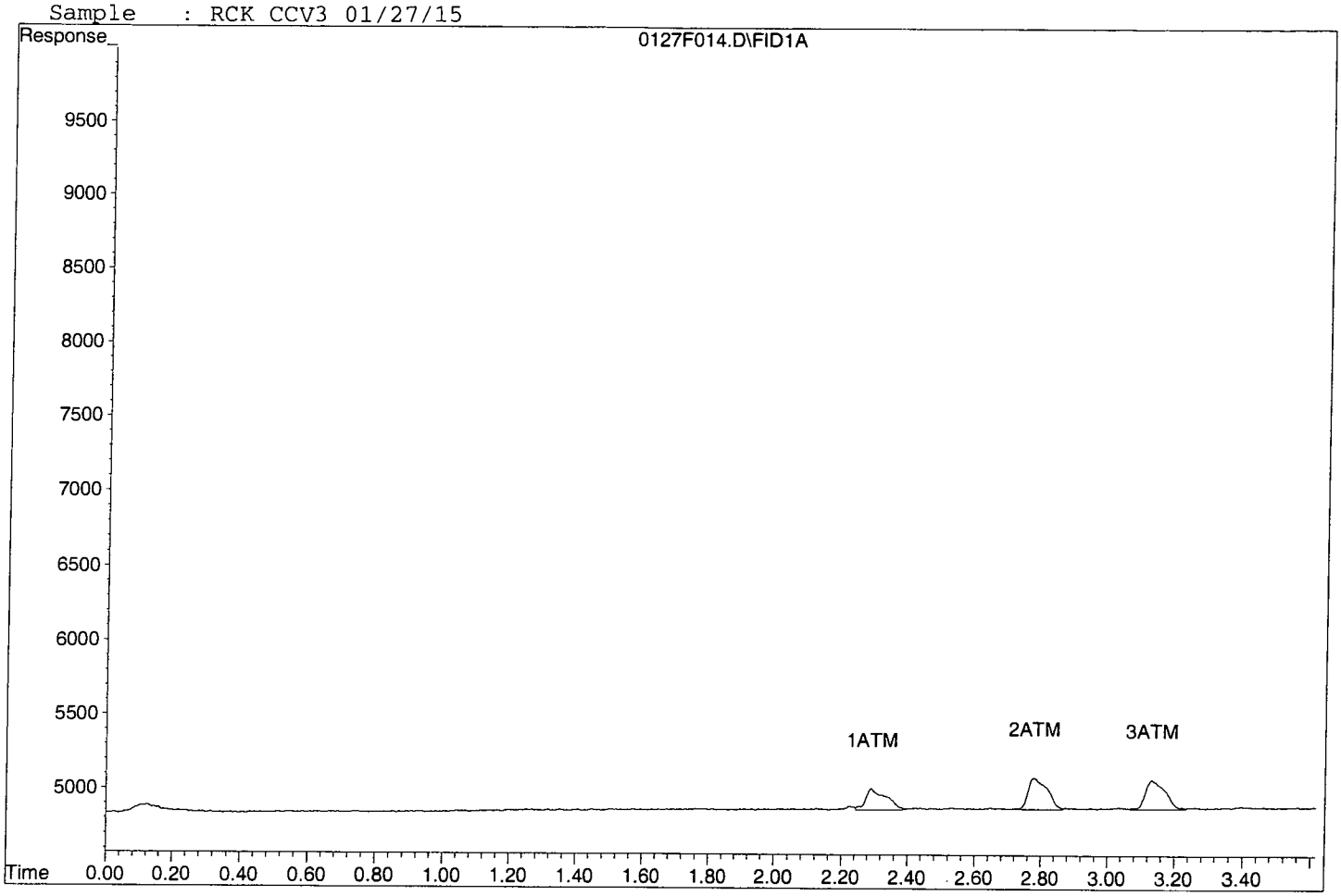
Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Mon Jan 26 17:04:45 2015
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	2.29f	6063	15.846 ppb
2) ATM Ethane	2.78f	8655	27.737 ppb
3) ATM Ethene	3.13	8155	24.837 ppb

Quantitation Report

Data File: V:\FRODO\DATA\150126\0127F014.D
Sample : RCK CCV3 01/27/15



RSK-175
Raw Data

APPL, INC.

Method Blank
MEE

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **A15012W-10128 - 193866**
Batch ID: #RSK50-A150127a

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	01/27/15	01/27/15

Quant Method:RSK175Q.M
Run #:0127F003
Instrument:Frodo
Sequence:150126
Initials:MA

GC SC-Blank-REG MDLs
Printed: 01/28/15 3:18:03 PM

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\150126\0127F003.D Vial: 3
Acq On : 27 Jan 2015 11:35 Operator: SD
Sample : 150127 BLK Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 27 15:41 2015 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Jan 27 13:54:02 2015
Response via : Multiple Level Calibration

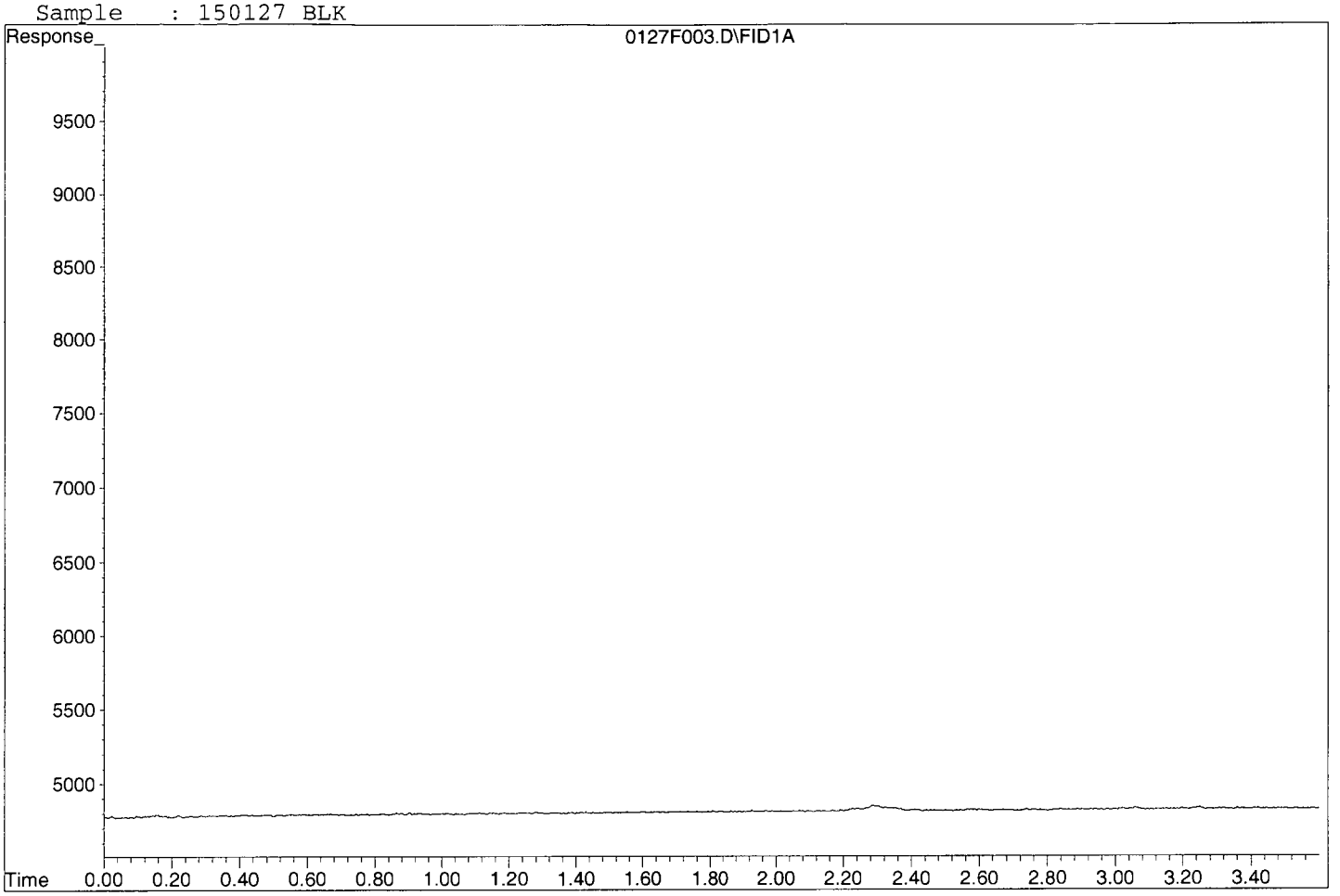
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds

(f)=RT Delta > 1/2 Window (m)=manual int.
0127F003.D RSK175Q.M Tue Jan 27 15:41:44 2015 Page 1

Data File: V:\FRODO\DATA\150126\0127F003.D
Sample : 150127 BLK



Laboratory Control Spike Recovery

MEE

APPL ID: **150127W-10128 LCS - 193866**
Batch ID: #RSK50-A150127a

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
METHANE	13.3	11.9	89.5	72-125

Comments: _____

Primary	SPK
Quant Method :	RSK175Q.M
Extraction Date :	01/27/15
Analysis Date :	01/27/15
Instrument :	Frodo
Run :	0127F002
Initials :	MA

Printed: 01/28/15 3:18:04 PM
APPL Standard LCS

Quantitation Report (Not Reviewed)

Data File : V:\FRODO\DATA\150126\0127F002.D Vial: 2
Acq On : 27 Jan 2015 10:00 Operator: SD
Sample : 150127 LCS Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 27 11:20 2015 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Jan 27 13:54:02 2015
Response via : Multiple Level Calibration

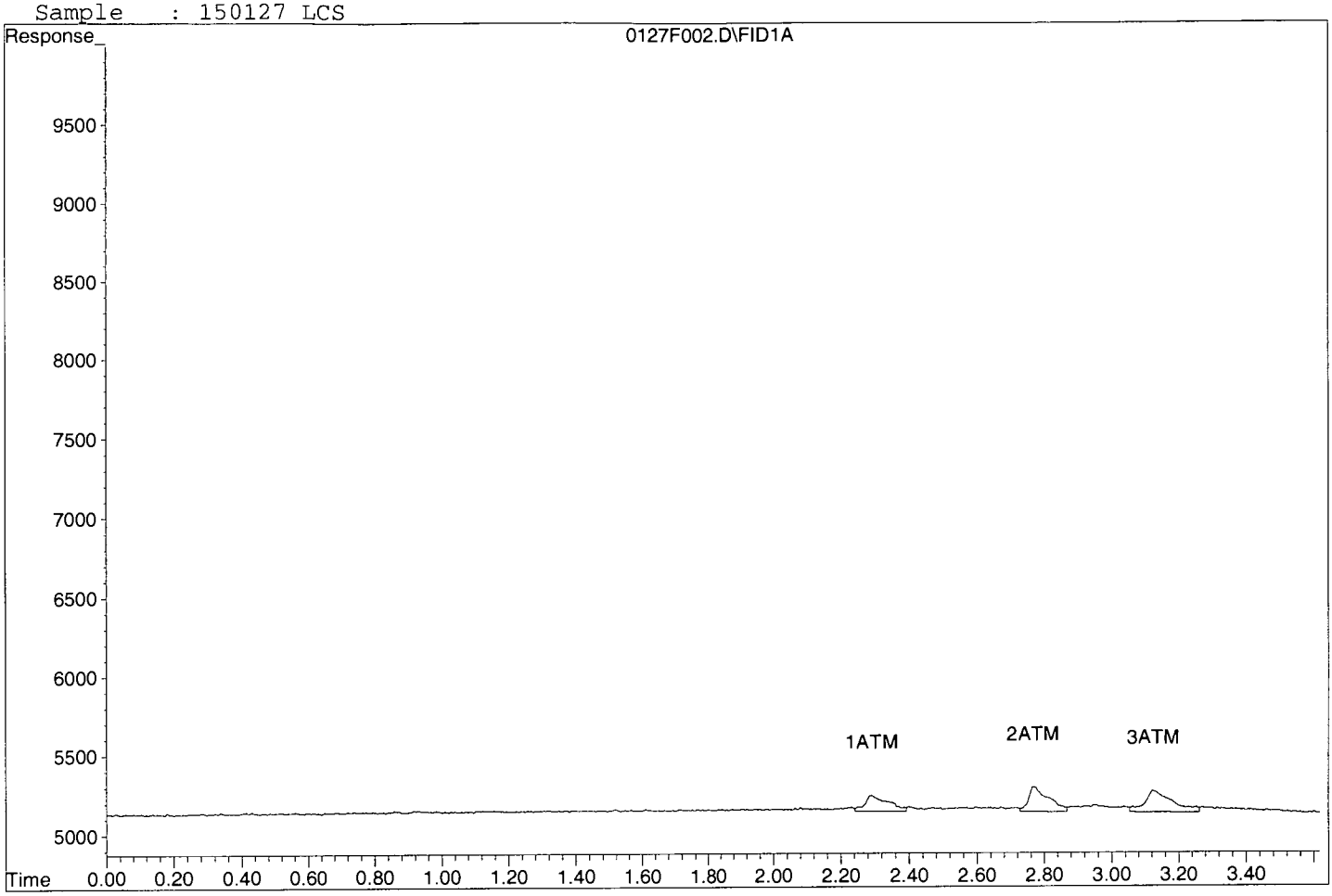
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	2.29f	4669	11.932 ppb
2) ATM Ethane	2.77	6525	20.910 ppb
3) ATM Ethene	3.13	7786	23.714 ppb

Algorithm = $\frac{6525}{312}$ = 20.91 HA 1/28/15

(f)=RT Delta > 1/2 Window (m)=manual int.
0127F002.D RSK175Q.M Wed Jan 28 10:49:07 2015 Page 1

Data File: V:\FRODO\DATA\150126\0127F002.D
Sample : 150127 LCS



Matrix Spike Recoveries

MEE

APPL ID: **150127W-10128 MS - 193866**
Batch ID: #RSK50-A150127a
Sample ID: AZ10128
Client ID: RHMW06-GW-02

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
METHANE	13.3	ND	15.2	15.4	114	116	72-125	1.3	30

Comments: _____

Primary	SPK	DUP
Quant Method :	RSK175Q.M	RSK175Q.M
Extraction Date :	01/27/15	01/27/15
Analysis Date :	01/27/15	01/27/15
Instrument :	Frodo	Frodo
Run :	0127F010	0127F011
Initials :	MA	

Printed: 01/28/15 3:18:06 PM
APPL MSD SCII

Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\150126\0127F010.D Vial: 10
Acq On : 27 Jan 2015 12:05 Operator: SD
Sample : AZ10128W03 MS-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 28 10:50 2015 Quant Results File: RSK175Q.RES

Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Jan 27 13:54:02 2015
Response via : Multiple Level Calibration

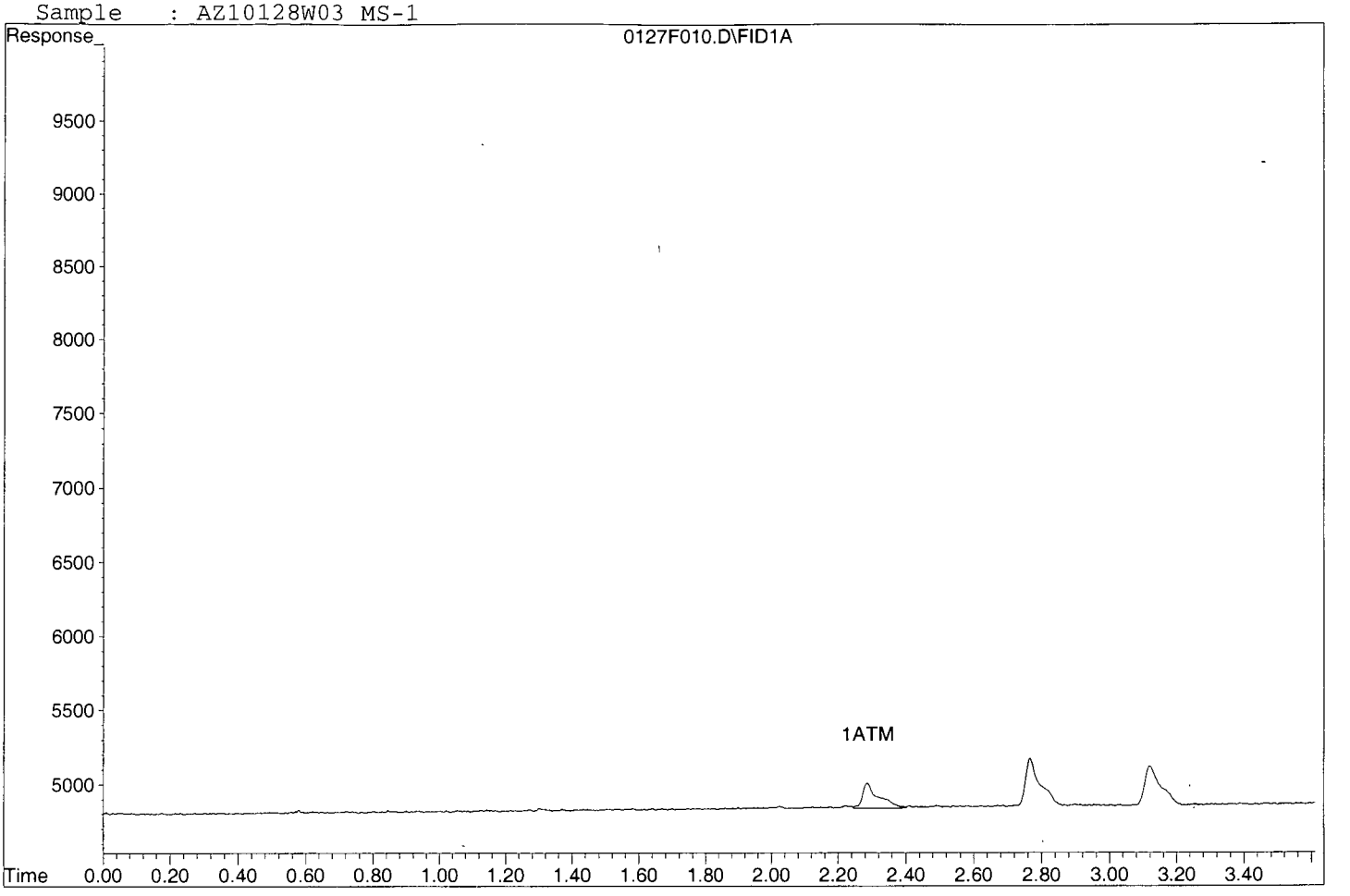
Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	2.29	5822	15.167 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
0127F010.D RSK175O.M Wed Jan 28 10:50:26 2015 Page 1

Quantitation Report

Data File: V:\FRODO\DATA\150126\0127F010.D
Sample : AZ10128W03 MS-1



Quantitation Report (QT Reviewed)

Data File : V:\FRODO\DATA\150126\0127F011.D Vial: 11
Acq On : 27 Jan 2015 12:09 Operator: SD
Sample : AZ10128W03 MSD-1 Inst : Frodo
Misc : Water Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 28 10:50 2015 Quant Results File: RSK175Q.RES

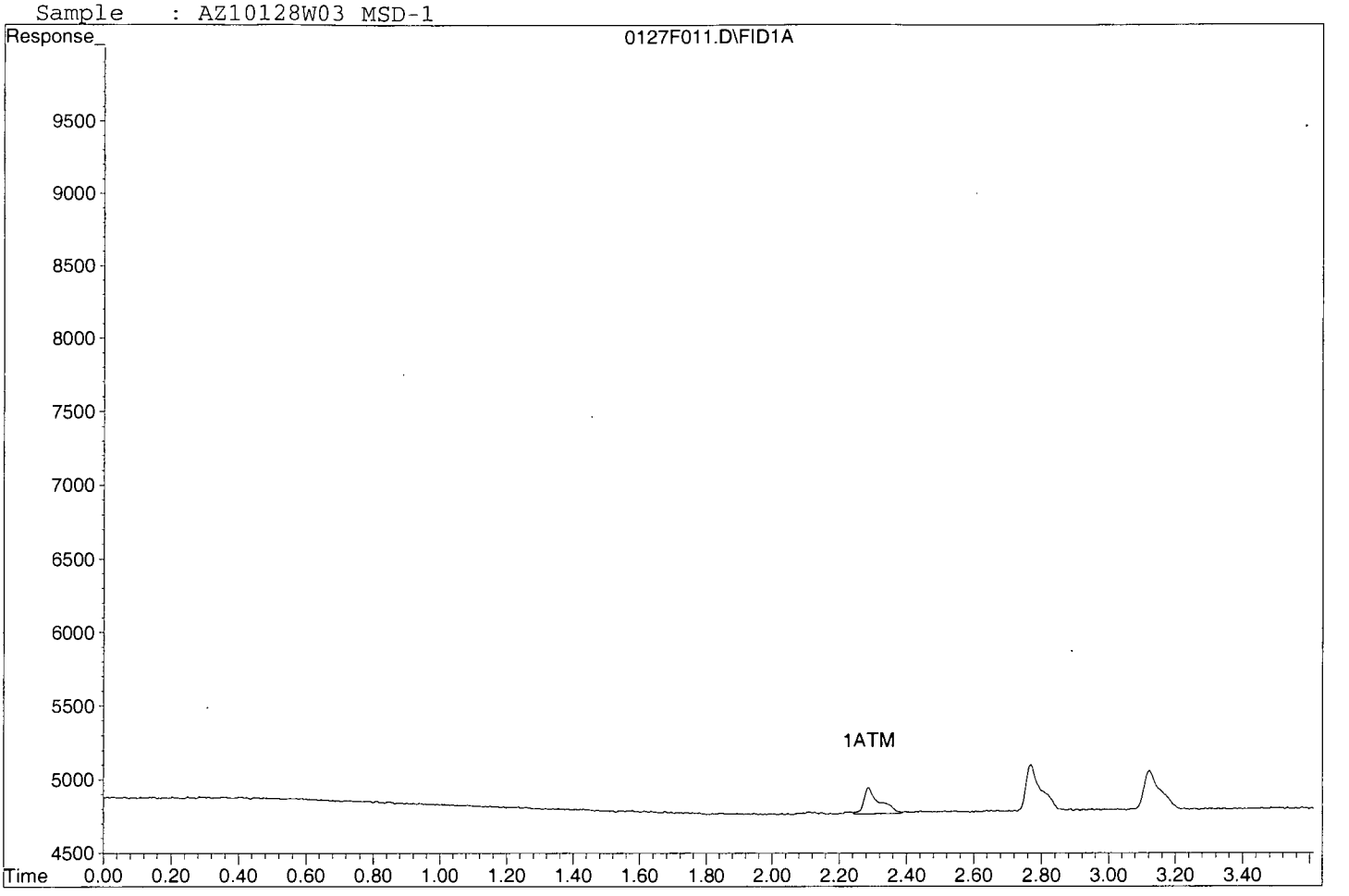
Method : V:\FRODO\DATA\150126\RSK175Q.M (Chemstation Integrator)
Title : RSK 175
Last Update : Tue Jan 27 13:54:02 2015
Response via : Multiple Level Calibration

Volume Inj. : 1ML
Signal Phase : CARBOPACK
Signal Info :

Compound	R.T.	Response	Conc Units
Target Compounds			
1) ATM Methane	2.29	5904	15.399 ppb

(f)=RT Delta > 1/2 Window (m)=manual int.
0127F011.D RSK175Q.M Wed Jan 28 10:50:41 2015 Page 1

Data File: V:\FRODO\DATA\150126\0127F011.D
Sample : AZ10128W03 MSD-1



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

UF

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

UF

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

UF

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 1/26/15A SD 1/26/15

1/26/15 A is prepared in a 1 L Tedlar bag. Add 990mL Helium and 10mL of 248PLU2SPC03L-31312 standard.
Expires 3/26/15

LCS 150126A SD 1/26/15

2mL of Intermediate cal stock 1/26/15A into 10mL P&T water
final conc:13.3ppb Methane, 25.0ppb Ethane, and 23.3ppb Ethene

CCV3 1/26/15 Expires 02/26/15 SD 1/26/15

2mL of Intermediate cal stock 1/26/15A into 10mL P&T water
final conc:13.3ppb Methane, 25.0ppb Ethane, and 23.3ppb Ethene

CCV4 1/26/15 Expires 02/26/15 SD 1/26/15

4mL of Intermediate cal stock 1/26/15A into 10mL P&T water
final conc:26.7ppb Methane, 50.0ppb Ethane, and 46.6ppb Ethene

LCS 150127A SD 1/27/15

2mL of Intermediate cal stock 1/26/15A into 10mL P&T water
final conc:13.3ppb Methane, 25.0ppb Ethane, and 23.3ppb Ethene

CCV3 1/27/15 Expires 02/27/15 SD 1/27/15

2mL of Intermediate cal stock 1/26/15A into 10mL P&T water
final conc:13.3ppb Methane, 25.0ppb Ethane, and 23.3ppb Ethene

CCV4 1/27/15 Expires 02/27/15 SD 1/27/15

4mL of Intermediate cal stock 1/26/15A into 10mL P&T water
final conc:26.7ppb Methane, 50.0ppb Ethane, and 46.6ppb Ethene

IDC - 1 through IDC-4

1mL of Intermediate cal stock 1/26/15A into 10mL P&T water sd 1/26/15
final conc:6.7ppb Methane, 12.5ppb Ethane, and 11.7ppb Ethene

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
1	1	0127F001.D	1	RSK CCV3 01/26/15 RS	Water	27 Jan 2015 08:47
2	2	0127F002.D	1	150127 LCS	Water	27 Jan 2015 10:00
3	3	0127F003.D	1	150127 BLK	Water	27 Jan 2015 11:35
4	4	0127F004.D	1	AZ10126W03	Water	27 Jan 2015 11:40
5	5	0127F005.D	1	AZ10127W03	Water	27 Jan 2015 11:44
6	6	0127F006.D	1	AZ10128W03	Water	27 Jan 2015 11:48
10	10	0127F010.D	1	AZ10128W03 MS-1	Water	27 Jan 2015 12:05
11	11	0127F011.D	1	AZ10128W03 MSD-1	Water	27 Jan 2015 12:09
14	14	0127F014.D	1	RCK CCV3 01/27/15	Water	27 Jan 2015 12:22

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	01/27/15	01/28/15	#62A14-150127A-AZ10128

Metals SC-Blank-REG MDLs
Printed: 02/09/15 9:55:08 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	46.2	92.4	80-120	01/27/15	01/28/15	#62A14-150127A-AZ10128

Comments: _____

Matrix Spike Recoveries

METALS

APPL ID: **150127W-10128 MS - 194042**

Sample ID: AZ10128

Client ID: RHMW06-GW-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	ND	42.8	42.9	85.6	85.8	0.2	20	80-120	01/27/15	01/28/15	01/27/15	01/28/15	194042	AZ10128

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 Phase 1b
Sample ID: RHMW07-GW-02
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10126

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB) (DISSOLVED)	0.40 U	3.0	0.40	0.19	ug/L	1	01/27/15	01/28/15

Printed: 02/09/15 9:55:20 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10126W12
Data File Name	006SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:02:19-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	-0.099	-0.110	-1.03	123	4.68	10000	
B	11	45	NoGas	128.411	142.679	1.35	586807	0.66	10000	
Na	23	45	He	109669.709	121855.232	0.83	140615537	0.53	1000000	
Mg	24	45	He	47692.061	52991.179	0.64	32716836	0.20	1000000	
Al	27	45	He	20.556	22.839	0.74	6013	1.46	1000000	
K	39	45	He	2874.473	3193.859	1.43	1634126	0.65	500000	
Ca	44	45	He	36775.314	40861.460	1.48	1142762	0.75	500000	
Ti	47	45	He	0.468	0.520	73.55	109	65.47	10000	
V	51	45	He	4.223	4.692	1.37	29764	0.59	10000	
Cr	52	45	He	0.061	0.068	24.34	1846	7.47	10000	
Mn	55	45	He	239.830	266.478	0.99	1141557	0.23	50000	
Fe	56	45	He	7.336	8.151	1.16	69360	1.02	1000000	
Co	59	45	He	0.291	0.324	4.43	4419	3.68	10000	
Ni	60	45	He	2.358	2.620	0.77	9080	0.37	10000	
Cu	63	45	He	-0.277	-0.308	-2.48	2752	2.03	10000	
Zn	66	115	He	9.561	10.623	1.61	17591	1.38	50000	
As	75	115	He	1.498	1.664	4.43	1672	3.71	2000	
Se	78	72	H2	0.564	0.626	3.18	203	2.40	10000	
Se	78	115	He	0.366	0.407	12.13	71	3.56	10000	
Sr	88	115	NoGas	311.013	345.570	1.21	16280995	1.26	50000	
Mo	95	115	NoGas	-0.093	-0.104	-33.08	7272	1.95	10000	
Ag	107	115	NoGas	-0.001	-0.001	-82.17	37	41.66	5000	
Cd	111	115	He	0.001	0.001	284.86	21	39.11	10000	
Sn	118	115	He	-0.031	-0.035	-23.01	466	7.89	10000	
Sn	118	115	NoGas	-0.017	-0.019	-17.05	1646	4.95	10000	
Sb	121	115	NoGas	-0.021	-0.023	-46.46	2707	9.85	10000	
Ba	137	165	NoGas	9.818	10.909	1.46	74380	0.44	50000	
Tl	205	165	NoGas	-0.005	-0.006	-48.51	490	24.06	5000	
Pb	208	165	NoGas	-0.096	-0.106	-1.73	3310	4.45	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	228398	0.63	195198	117.01	70	120	
Sc	45	H2	263182	0.94	275010	95.70	70	120	
Sc	45	He	88629	0.83	90637	97.78	70	120	
Sc	45	NoGas	1666173	0.33	1650351	100.96	70	120	
Ge	72	H2	65428	0.57	67975	96.25	70	120	
Ge	72	He	57537	0.68	59830	96.17	70	120	
Ge	72	NoGas	324863	2.02	348889	93.11	70	120	
In	115	H2	1538163	1.25	1679541	91.58	70	120	
In	115	He	532021	0.77	536823	99.11	70	120	
In	115	NoGas	2184189	2.24	2277482	95.90	70	120	
Tb	159	H2	2963233	1.47	3243898	91.35	70	120	
Tb	159	He	1815387	2.10	1782102	101.87	70	120	
Tb	159	NoGas	3004395	1.65	3021042	99.45	70	120	
Ho	165	H2	2886928	1.49	3096505	93.23	70	120	
Ho	165	He	1792163	1.28	1755286	102.10	70	120	
Ho	165	NoGas	2887386	1.35	2897681	99.64	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 Phase 1b
Sample ID: RHMW07-GW-02FD
Sample Collection Date: 01/22/15

ARF: 75450
APPL ID: AZ10127

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB) (DISSOLVED)	0.40 U	3.0	0.40	0.19	ug/L	1	01/27/15	01/28/15

Printed: 02/09/15 9:55:20 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10127W12
Data File Name	007SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:08:21-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	-0.102	-0.114	-6.24	110	31.49	10000	
B	11	45	NoGas	122.735	136.372	3.96	582873	0.35	10000	
Na	23	45	He	109833.558	122037.287	1.48	142963959	0.52	1000000	
Mg	24	45	He	48423.443	53803.826	1.01	33724412	0.66	1000000	
Al	27	45	He	18.512	20.569	5.73	5543	4.46	1000000	
K	39	45	He	2843.490	3159.434	0.41	1641833	0.98	500000	
Ca	44	45	He	37163.144	41292.382	1.04	1172439	0.57	500000	
Ti	47	45	He	0.306	0.340	50.43	77	41.93	10000	
V	51	45	He	4.317	4.797	0.29	30877	0.90	10000	
Cr	52	45	He	0.061	0.068	20.42	1868	4.91	10000	
Mn	55	45	He	239.690	266.322	1.80	1158211	0.86	50000	
Fe	56	45	He	7.366	8.184	1.42	70639	0.63	1000000	
Co	59	45	He	0.342	0.380	2.64	5185	1.95	10000	
Ni	60	45	He	2.359	2.621	2.57	9221	1.71	10000	
Cu	63	45	He	-0.299	-0.332	-4.46	2574	5.77	10000	
Zn	66	115	He	9.879	10.977	2.04	18165	1.65	50000	
As	75	115	He	1.481	1.646	3.76	1658	3.90	2000	
Se	78	72	H2	0.508	0.564	10.60	184	9.39	10000	
Se	78	115	He	0.475	0.528	14.57	78	5.90	10000	
Sr	88	115	NoGas	322.455	358.283	1.81	16639704	1.41	50000	
Mo	95	115	NoGas	-0.093	-0.104	-57.21	7168	6.35	10000	
Ag	107	115	NoGas	0.001	0.001	69.54	83	24.98	5000	
Cd	111	115	He	0.012	0.014	31.36	47	19.33	10000	
Sn	118	115	He	-0.019	-0.021	-39.17	527	7.30	10000	
Sn	118	115	NoGas	-0.017	-0.018	-25.24	1626	3.41	10000	
Sb	121	115	NoGas	-0.055	-0.062	-6.11	1944	4.44	10000	
Ba	137	165	NoGas	10.001	11.112	1.20	75615	0.76	50000	
Tl	205	165	NoGas	-0.003	-0.004	-97.12	577	23.54	5000	
Pb	208	165	NoGas	0.015	0.016	39.51	10252	3.36	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	232447	1.11	195198	119.08	70	120	
Sc	45	H2	268520	0.95	275010	97.64	70	120	
Sc	45	He	89981	1.18	90637	99.28	70	120	
Sc	45	NoGas	1711532	2.82	1650351	103.71	70	120	
Ge	72	H2	65586	0.87	67975	96.49	70	120	
Ge	72	He	58307	0.19	59830	97.45	70	120	
Ge	72	NoGas	328990	0.48	348889	94.30	70	120	
In	115	H2	1541478	0.85	1679541	91.78	70	120	
In	115	He	533220	0.28	536823	99.33	70	120	
In	115	NoGas	2152927	1.06	2277482	94.53	70	120	
Tb	159	H2	2993383	1.64	3243898	92.28	70	120	
Tb	159	He	1791903	0.99	1782102	100.55	70	120	
Tb	159	NoGas	2997572	0.44	3021042	99.22	70	120	
Ho	165	H2	2901495	1.30	3096505	93.70	70	120	
Ho	165	He	1809946	1.26	1755286	103.11	70	120	
Ho	165	NoGas	2881498	1.19	2897681	99.44	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 Phase 1b
Sample ID: RHMW06-GW-02
Sample Collection Date: 01/23/15

ARF: 75450
APPL ID: AZ10128

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
6020A/3015^	LEAD (PB) (DISSOLVED)	0.40 U	3.0	0.40	0.19	ug/L	1	01/27/15	01/28/15

Printed: 02/09/15 9:55:20 AM
APPL-F1-SC-NoMC-REG MDLs

Sample Report

Sample Table

Sample Name	AZ10128W36
Data File Name	008SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:14:21-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	-0.096	-0.107	-2.17	147	10.41	10000	
B	11	45	NoGas	84.808	94.232	4.68	458865	0.45	10000	
Na	23	45	He	149871.595	166523.995	1.14	196486823	0.94	1000000	
Mg	24	45	He	58034.592	64482.881	2.13	40711872	1.19	1000000	
Al	27	45	He	25.004	27.782	4.35	7375	2.92	1000000	
K	39	45	He	2530.488	2811.654	1.47	1477650	1.54	500000	
Ca	44	45	He	41603.851	46226.501	1.08	1322313	2.02	500000	
Ti	47	45	He	0.474	0.527	3.10	112	1.72	10000	
V	51	45	He	12.991	14.435	1.36	91942	1.00	10000	
Cr	52	45	He	1.377	1.530	2.59	13077	1.16	10000	
Mn	55	45	He	2.317	2.575	4.09	11628	3.74	50000	
Fe	56	45	He	16.499	18.333	0.91	139454	0.41	1000000	
Co	59	45	He	0.060	0.067	12.02	1275	7.10	10000	
Ni	60	45	He	1.596	1.774	2.51	6487	2.99	10000	
Cu	63	45	He	-0.321	-0.356	-4.39	2372	6.25	10000	
Zn	66	115	He	21.954	24.393	0.84	38018	1.31	50000	
As	75	115	He	0.928	1.031	0.49	1043	0.68	2000	
Se	78	72	H2	0.206	0.229	13.05	83	10.79	10000	
Se	78	115	He	0.326	0.362	24.99	67	8.95	10000	
Sr	88	115	NoGas	344.416	382.685	1.74	17982849	1.70	50000	
Mo	95	115	NoGas	-0.249	-0.277	-12.37	5731	3.32	10000	
Ag	107	115	NoGas	0.001	0.001	185.84	70	42.86	5000	
Cd	111	115	He	0.007	0.008	87.71	35	42.53	10000	
Sn	118	115	He	0.092	0.102	18.06	1070	7.29	10000	
Sn	118	115	NoGas	0.102	0.114	7.70	3461	1.54	10000	
Sb	121	115	NoGas	0.008	0.009	98.42	3304	3.15	10000	
Ba	137	165	NoGas	11.827	13.142	2.59	88633	1.19	50000	
Tl	205	165	NoGas	-0.004	-0.005	-22.84	517	6.80	5000	
Pb	208	165	NoGas	-0.103	-0.114	-5.46	2844	10.70	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	230402	0.89	195198	118.03	70	120	
Sc	45	H2	269720	0.20	275010	98.08	70	120	
Sc	45	He	90643	1.15	90637	100.01	70	120	
Sc	45	NoGas	1737771	2.66	1650351	105.30	70	120	
Ge	72	H2	65817	0.71	67975	96.83	70	120	
Ge	72	He	59035	1.62	59830	98.67	70	120	
Ge	72	NoGas	331022	2.24	348889	94.88	70	120	
In	115	H2	1534686	1.09	1679541	91.38	70	120	
In	115	He	527282	0.90	536823	98.22	70	120	
In	115	NoGas	2178480	1.98	2277482	95.65	70	120	
Tb	159	H2	2970570	1.82	3243898	91.57	70	120	
Tb	159	He	1793310	0.71	1782102	100.63	70	120	
Tb	159	NoGas	2952197	1.73	3021042	97.72	70	120	
Ho	165	H2	2901524	1.32	3096505	93.70	70	120	
Ho	165	He	1777535	1.02	1755286	101.27	70	120	
Ho	165	NoGas	2857742	2.25	2897681	98.62	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: 75450 SDG: 75450
Initial Calibration Source: CPI
Continuing Calibration Source: Environmental Express
Analysis Date: 01/28/15 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 11:52	%R(1)	True CCV1	Found 12:34	%R(1)	True CCV1	Found 15:44	%R(1)	
Lead (Pb)	100	101.235	101	50	49.1326	98.3	50	48.8437	97.7	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.: 75450 SDG: 75450

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Analysis Date: 01/28/15

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
	12:10	C	1 12:46	C	2 15:56	C	3	C	14:44	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.: 75450
ICP ID Number: Megatron

Contract: Parsons
SDG: 75450
ICS Source: Environmental Express

Analysis Date: 01/28/15

Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 12:52	Sol AB 12:58	%R(1)
Lead (Pb)		100	0.003128	90.963958	91.0

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
5B
POST DIGEST SPIKE SAMPLE RECOVERY

CLIENT SAMPLE NO.
RHMW06-GW-02

Lab Name: A.P.P.L. INC.
Contract: Parsons
ARF No.: 75450
SDG: 75450

Analysis Date: 01/28/15
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	268.701281		-0.114092		277.500	96.8		

Comments:
01/28/15 15:14 AZ10128W36
01/28/15 15:32 AZ10128W36-A

Sample Report

Sample Table

Sample Name	AZ10128W36-A
Data File Name	011SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:32:22-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	52.241	58.046	1.94	292871	0.63	10000	
B	11	45	NoGas	394.769	438.632	1.59	1533342	0.30	10000	
Na	23	45	He	170039.349	188932.611	1.03	223510933	0.56	1000000	
Mg	24	45	He	80532.525	89480.584	1.74	56647024	0.67	1000000	
Al	27	45	He	2074.388	2304.875	1.23	574356	0.16	1000000	
K	39	45	He	7451.620	8279.578	1.32	4260371	2.20	500000	
Ca	44	45	He	66240.706	73600.785	2.23	2110333	0.99	500000	
Ti	47	45	He	257.883	286.537	1.98	53900	1.96	10000	
V	51	45	He	282.812	314.235	1.62	1989955	2.04	10000	
Cr	52	45	He	257.285	285.872	1.68	2196436	0.61	10000	
Mn	55	45	He	256.071	284.524	0.97	1249998	1.75	50000	
Fe	56	45	He	1009.015	1121.128	1.83	7580877	1.01	1000000	
Co	59	45	He	239.981	266.645	2.77	3376074	1.43	10000	
Ni	60	45	He	232.775	258.639	0.94	858581	0.89	10000	
Cu	63	45	He	238.872	265.413	0.93	2425402	1.35	10000	
Zn	66	115	He	520.925	578.806	0.71	860997	0.19	50000	
As	75	115	He	258.732	287.480	0.71	277076	0.16	2000	
Se	78	72	H2	240.079	266.755	1.60	81079	1.61	10000	
Se	78	115	He	255.397	283.774	2.11	17335	1.63	10000	
Sr	88	115	NoGas	598.267	664.741	1.23	30294613	1.17	50000	
Mo	95	115	NoGas	273.133	303.481	2.07	2594207	2.08	10000	
Ag	107	115	NoGas	61.348	68.165	9.40	1512570	8.05	5000	
Cd	111	115	He	49.321	54.802	0.17	114670	0.55	10000	
Sn	118	115	He	255.148	283.498	0.63	1258808	0.42	10000	
Sn	118	115	NoGas	258.488	287.209	1.63	3834438	0.83	10000	
Sb	121	115	NoGas	274.970	305.523	2.32	5628244	1.12	10000	
Ba	137	165	NoGas	276.629	307.366	0.74	2029774	1.79	50000	
Tl	205	165	NoGas	243.131	270.145	0.20	10818719	1.29	5000	
Pb	208	165	NoGas	241.831	268.701	1.03	14807178	0.37	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	228106	0.50	195198	116.86	70	120	
Sc	45	H2	273806	1.43	275010	99.56	70	120	
Sc	45	He	90888	1.33	90637	100.28	70	120	
Sc	45	NoGas	1723549	1.55	1650351	104.44	70	120	
Ge	72	H2	65593	0.56	67975	96.50	70	120	
Ge	72	He	59987	1.27	59830	100.26	70	120	
Ge	72	NoGas	327673	0.73	348889	93.92	70	120	
In	115	H2	1510275	2.44	1679541	89.92	70	120	
In	115	He	523823	0.59	536823	97.58	70	120	
In	115	NoGas	2112748	1.84	2277482	92.77	70	120	
Tb	159	H2	2894645	0.81	3243898	89.23	70	120	
Tb	159	He	1766923	1.30	1782102	99.15	70	120	
Tb	159	NoGas	2902876	1.26	3021042	96.09	70	120	
Ho	165	H2	2795870	1.54	3096505	90.29	70	120	
Ho	165	He	1769052	2.10	1755286	100.78	70	120	
Ho	165	NoGas	2801740	1.37	2897681	96.69	70	120	

Calibration Blank Report

Sample Table

Sample Name	Calibration Blank
Data File Name	001CALB_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T11:22:03-08:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD
Be	9	45	NoGas	653	25.35
B	11	45	NoGas	153522	1.72
Na	23	45	He	103327	1.40
Mg	24	45	He	1061	1.61
Al	27	45	He	478	4.54
K	39	45	He	52828	2.59
Ca	44	45	He	352	6.30
Ti	47	45	He	13	49.99
V	51	45	He	822	4.68
Cr	52	45	He	1365	2.20
Mn	55	45	He	352	11.21
Fe	56	45	He	16079	2.39
Co	59	45	He	431	2.49
Ni	60	45	He	618	12.93
Cu	63	45	He	5612	3.48
Zn	66	115	He	1585	9.48
As	75	115	He	44	1.30
Se	78	72	H2	13	40.98
Se	78	115	He	46	32.02
Sr	88	115	NoGas	780	16.06
Mo	95	115	NoGas	8539	3.13
Ag	107	115	NoGas	57	53.91
Cd	111	115	He	18	19.25
Sn	118	115	He	627	5.07
Sn	118	115	NoGas	1986	4.89
Sb	121	115	NoGas	3277	2.33
Ba	137	165	NoGas	157	25.79
Tl	205	165	NoGas	727	16.99
[Pb]	206	165	NoGas	2547	0.23
[Pb]	207	165	NoGas	1824	9.35
Pb	208	165	NoGas	9385	1.13

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	NoGas	195198	0.11
Sc	45	H2	275010	1.37
Sc	45	He	90637	1.27
Sc	45	NoGas	1650351	1.03
Ge	72	H2	67975	1.00
Ge	72	He	59830	1.83
Ge	72	NoGas	348889	1.16
In	115	H2	1679541	1.32
In	115	He	536823	1.10
In	115	NoGas	2277482	0.73
Tb	159	H2	3243898	0.48
Tb	159	He	1782102	0.72
Tb	159	NoGas	3021042	1.92
Ho	165	H2	3096505	1.28
Ho	165	He	1755286	2.78
Ho	165	NoGas	2897681	1.58

Calibration Standard Report

Sample Table

Sample Name	Standard 1
Data File Name	002CALS_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T11:28:03-08:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.D
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	2574	4.08	0.9999
B	11	45	NoGas	132560	1.58	0.9966
Na	23	45	He	106955	0.55	1.0000
Mg	24	45	He	4940	4.12	0.9998
Al	27	45	He	973	8.30	1.0000
K	39	45	He	53910	2.01	1.0000
Ca	44	45	He	612	5.17	1.0000
Ti	47	45	He	43	48.04	1.0000
V	51	45	He	1631	5.04	1.0000
Cr	52	45	He	2318	4.98	1.0000
Mn	55	45	He	974	3.69	1.0000
Fe	56	45	He	27110	0.51	0.9999
Co	59	45	He	6710	1.29	1.0000
Ni	60	45	He	1006	10.30	0.9999
Cu	63	45	He	6670	2.50	1.0000
Zn	66	115	He	1708	7.39	1.0000
As	75	115	He	165	2.29	1.0000
Se	78	72	H2	42	3.82	1.0000
Se	78	115	He	60	19.21	1.0000
Sr	88	115	NoGas	6255	5.56	1.0000
Mo	95	115	NoGas	6815	2.25	0.9999
Ag	107	115	NoGas	1260	3.97	0.9999
Cd	111	115	He	257	14.16	1.0000
Sn	118	115	He	1000	6.77	1.0000
Sn	118	115	NoGas	3121	3.03	0.9999
Sb	121	115	NoGas	5044	2.08	0.9987
Ba	137	165	NoGas	1030	15.62	1.0000
Tl	205	165	NoGas	5208	1.92	1.0000
[Pb]	206	165	NoGas	7082	2.62	
[Pb]	207	165	NoGas	6582	2.58	
Pb	208	165	NoGas	29262	2.60	0.9999

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	191207	2.15	195198	97.96	70	120	
Sc	45	H2	266032	1.41	275010	96.74	70	120	
Sc	45	He	90985	1.19	90637	100.38	70	120	
Sc	45	NoGas	1638846	0.32	1650351	99.30	70	120	
Ge	72	H2	66261	0.70	67975	97.48	70	120	
Ge	72	He	59788	0.76	59830	99.93	70	120	
Ge	72	NoGas	349514	1.06	348889	100.18	70	120	
In	115	H2	1670039	0.99	1679541	99.43	70	120	
In	115	He	540938	0.56	536823	100.77	70	120	
In	115	NoGas	2267920	1.58	2277482	99.58	70	120	
Tb	159	H2	3180993	0.48	3243898	98.06	70	120	
Tb	159	He	1792478	1.28	1782102	100.58	70	120	
Tb	159	NoGas	3034631	1.37	3021042	100.45	70	120	
Ho	165	H2	3038796	0.40	3096505	98.14	70	120	
Ho	165	He	1787949	1.18	1755286	101.86	70	120	
Ho	165	NoGas	2944877	1.49	2897681	101.63	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 2
Data File Name	003CALS_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T11:34:03-08:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.D
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	6031	4.83	0.9999
B	11	45	NoGas	121712	0.95	0.9966
Na	23	45	He	133074	0.31	1.0000
Mg	24	45	He	35548	1.34	0.9998
Al	27	45	He	6034	4.00	1.0000
K	39	45	He	64736	2.10	1.0000
Ca	44	45	He	1938	3.10	1.0000
Ti	47	45	He	226	13.33	1.0000
V	51	45	He	8049	1.37	1.0000
Cr	52	45	He	10120	1.54	1.0000
Mn	55	45	He	5322	6.80	1.0000
Fe	56	45	He	158085	1.00	0.9999
Co	59	45	He	14999	1.06	1.0000
Ni	60	45	He	4491	1.73	0.9999
Cu	63	45	He	15658	2.60	1.0000
Zn	66	115	He	2977	3.31	1.0000
As	75	115	He	1128	7.43	1.0000
Se	78	72	H2	349	1.50	1.0000
Se	78	115	He	124	1.24	1.0000
Sr	88	115	NoGas	53485	1.05	1.0000
Mo	95	115	NoGas	14006	1.62	0.9999
Ag	107	115	NoGas	13392	3.25	0.9999
Cd	111	115	He	2396	2.62	1.0000
Sn	118	115	He	5458	5.98	1.0000
Sn	118	115	NoGas	17130	3.21	0.9999
Sb	121	115	NoGas	19799	3.71	0.9987
Ba	137	165	NoGas	8142	2.21	1.0000
Tl	205	165	NoGas	44479	2.46	1.0000
[Pb]	206	165	NoGas	18124	5.69	
[Pb]	207	165	NoGas	16019	2.66	
Pb	208	165	NoGas	72195	1.52	0.9999

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	194837	0.64	195198	99.81	70	120	
Sc	45	H2	268888	0.73	275010	97.77	70	120	
Sc	45	He	90961	0.69	90637	100.36	70	120	
Sc	45	NoGas	1634541	1.64	1650351	99.04	70	120	
Ge	72	H2	66007	1.29	67975	97.11	70	120	
Ge	72	He	60267	0.65	59830	100.73	70	120	
Ge	72	NoGas	350965	0.63	348889	100.59	70	120	
In	115	H2	1631503	2.67	1679541	97.14	70	120	
In	115	He	540423	1.17	536823	100.67	70	120	
In	115	NoGas	2280942	1.65	2277482	100.15	70	120	
Tb	159	H2	3153486	0.12	3243898	97.21	70	120	
Tb	159	He	1799303	0.65	1782102	100.97	70	120	
Tb	159	NoGas	3036162	1.53	3021042	100.50	70	120	
Ho	165	H2	3059123	2.39	3096505	98.79	70	120	
Ho	165	He	1763372	1.27	1755286	100.46	70	120	
Ho	165	NoGas	2970296	2.97	2897681	102.51	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 3
Data File Name	004CALS_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T11:40:03-08:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.D
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	257967	0.63	0.9999
B	11	45	NoGas	298732	1.17	0.9966
Na	23	45	He	1782037	2.20	1.0000
Mg	24	45	He	1826763	3.33	0.9998
Al	27	45	He	281427	0.75	1.0000
K	39	45	He	621304	0.86	1.0000
Ca	44	45	He	80637	1.01	1.0000
Ti	47	45	He	10463	2.35	1.0000
V	51	45	He	354059	0.26	1.0000
Cr	52	45	He	435298	1.18	1.0000
Mn	55	45	He	249152	0.77	1.0000
Fe	56	45	He	7689176	2.01	0.9999
Co	59	45	He	699084	1.35	1.0000
Ni	60	45	He	189416	0.47	0.9999
Cu	63	45	He	520651	0.82	1.0000
Zn	66	115	He	85645	1.02	1.0000
As	75	115	He	54081	0.80	1.0000
Se	78	72	H2	16715	0.35	1.0000
Se	78	115	He	3474	1.83	1.0000
Sr	88	115	NoGas	2722964	0.23	1.0000
Mo	95	115	NoGas	504722	0.65	0.9999
Ag	107	115	NoGas	647516	1.69	0.9999
Cd	111	115	He	117986	0.81	1.0000
Sn	118	115	He	250652	0.99	1.0000
Sn	118	115	NoGas	772956	1.09	0.9999
Sb	121	115	NoGas	1002908	1.68	0.9987
Ba	137	165	NoGas	379522	0.50	1.0000
Tl	205	165	NoGas	2312642	2.37	1.0000
[Pb]	206	165	NoGas	751769	1.88	
[Pb]	207	165	NoGas	661049	0.51	
Pb	208	165	NoGas	3089858	0.27	0.9999

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	192566	1.07	195198	98.65	70	120	
Sc	45	H2	267216	0.41	275010	97.17	70	120	
Sc	45	He	91523	0.80	90637	100.98	70	120	
Sc	45	NoGas	1624265	2.14	1650351	98.42	70	120	
Ge	72	H2	65908	0.18	67975	96.96	70	120	
Ge	72	He	60163	2.12	59830	100.56	70	120	
Ge	72	NoGas	347161	0.41	348889	99.50	70	120	
In	115	H2	1628728	0.86	1679541	96.97	70	120	
In	115	He	535702	0.65	536823	99.79	70	120	
In	115	NoGas	2260851	2.00	2277482	99.27	70	120	
Tb	159	H2	3146259	1.09	3243898	96.99	70	120	
Tb	159	He	1785485	0.84	1782102	100.19	70	120	
Tb	159	NoGas	3019606	1.69	3021042	99.95	70	120	
Ho	165	H2	3030265	1.07	3096505	97.86	70	120	
Ho	165	He	1791945	0.26	1755286	102.09	70	120	
Ho	165	NoGas	2900904	1.64	2897681	100.11	70	120	

Calibration Standard Report

Sample Table

Sample Name	Standard 4
Data File Name	005CALS_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T11:46:03-08:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.D
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	ISTD Mass	Tune Mode	CPS	%RSD	Cal Coef
Be	9	45	NoGas	532032	1.92	0.9999
B	11	45	NoGas	488392	2.10	0.9966
Na	23	45	He	3419317	1.83	1.0000
Mg	24	45	He	3536138	0.88	0.9998
Al	27	45	He	559769	0.84	1.0000
K	39	45	He	1197838	2.44	1.0000
Ca	44	45	He	161664	1.06	1.0000
Ti	47	45	He	21212	0.72	1.0000
V	51	45	He	713684	1.20	1.0000
Cr	52	45	He	863509	1.24	1.0000
Mn	55	45	He	493101	1.41	1.0000
Fe	56	45	He	15144969	1.66	0.9999
Co	59	45	He	1430581	2.49	1.0000
Ni	60	45	He	372368	1.32	0.9999
Cu	63	45	He	1029252	0.77	1.0000
Zn	66	115	He	167321	1.82	1.0000
As	75	115	He	107879	0.66	1.0000
Se	78	72	H2	34039	1.83	1.0000
Se	78	115	He	6858	1.51	1.0000
Sr	88	115	NoGas	5325205	2.76	1.0000
Mo	95	115	NoGas	1010534	1.81	0.9999
Ag	107	115	NoGas	1305831	3.39	0.9999
Cd	111	115	He	233800	0.33	1.0000
Sn	118	115	He	496678	0.20	1.0000
Sn	118	115	NoGas	1574210	1.08	0.9999
Sb	121	115	NoGas	2204803	1.87	0.9987
Ba	137	165	NoGas	745542	1.12	1.0000
Tl	205	165	NoGas	4515976	0.56	1.0000
[Pb]	206	165	NoGas	1595240	1.36	
[Pb]	207	165	NoGas	1387431	2.84	
Pb	208	165	NoGas	6267941	0.97	0.9999

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	195884	1.35	195198	100.35	70	120	
Sc	45	H2	269000	1.66	275010	97.81	70	120	
Sc	45	He	92064	1.52	90637	101.57	70	120	
Sc	45	NoGas	1627550	1.16	1650351	98.62	70	120	
Ge	72	H2	65845	1.66	67975	96.87	70	120	
Ge	72	He	59509	1.38	59830	99.46	70	120	
Ge	72	NoGas	336184	2.72	348889	96.36	70	120	
In	115	H2	1615240	1.86	1679541	96.17	70	120	
In	115	He	525819	0.11	536823	97.95	70	120	
In	115	NoGas	2225234	2.85	2277482	97.71	70	120	
Tb	159	H2	3152721	1.39	3243898	97.19	70	120	
Tb	159	He	1769038	1.29	1782102	99.27	70	120	
Tb	159	NoGas	2958707	2.46	3021042	97.94	70	120	
Ho	165	H2	3023418	1.23	3096505	97.64	70	120	
Ho	165	He	1769001	1.06	1755286	100.78	70	120	
Ho	165	NoGas	2845998	1.52	2897681	98.22	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	006_ICV_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T11:52:05-08:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.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	100.515	1.565	516627	0.92	100	100.5	89.6	110.4	
B	11	45	NoGas	100.156	2.959	466900	2.27	100	100.2	89.6	110.4	
Na	23	45	He	2452.357	0.936	3237036	1.16	2500	98.1	89.6	110.4	
Mg	24	45	He	2550.243	1.281	1747160	1.50	2500	102.0	89.6	110.4	
Al	27	45	He	2494.822	0.676	672259	0.34	2500	99.8	89.6	110.4	
K	39	45	He	2595.277	0.592	1477654	0.37	2500	103.8	89.6	110.4	
Ca	44	45	He	2720.194	1.702	84687	1.43	2500	108.8	89.6	110.4	
Ti	47	45	He	100.095	2.278	20371	2.64	100	100.1	89.6	110.4	
V	51	45	He	100.965	0.262	691947	0.63	100	101.0	89.6	110.4	
Cr	52	45	He	99.987	0.502	831699	0.90	100	100.0	89.6	110.4	
Mn	55	45	He	100.003	0.429	475312	0.80	100	100.0	89.6	110.4	
Fe	56	45	He	2491.193	1.369	18196200	1.76	2500	99.6	89.6	110.4	
Co	59	45	He	101.772	1.918	1393964	1.56	100	101.8	89.6	110.4	
Ni	60	45	He	100.494	0.477	361118	0.61	100	100.5	89.6	110.4	
Cu	63	45	He	100.049	0.673	991886	0.65	100	100.0	89.6	110.4	
Zn	66	115	He	98.974	2.046	163306	1.84	100	99.0	89.6	110.4	
As	75	115	He	94.392	0.660	100175	0.71	100	94.4	89.6	110.4	
Se	78	72	H2	98.593	1.614	32593	2.20	100	98.6	89.6	110.4	
Se	78	115	He	97.627	2.530	6594	3.54	100	97.6	89.6	110.4	
Sr	88	115	NoGas	98.741	3.067	5229000	1.89	100	98.7	89.6	110.4	
Mo	95	115	NoGas	98.337	0.722	982189	1.45	100	98.3	89.6	110.4	
Ag	107	115	NoGas	48.979	1.313	1264056	1.46	50	98.0	89.6	110.4	
Cd	111	115	He	98.953	0.317	227913	1.15	100	99.0	89.6	110.4	
Sn	118	115	He	50.642	1.246	248027	1.78	100	50.6	89.6	110.4	>+\- 10%
Sn	118	115	NoGas	49.700	1.757	772619	0.78	100	49.7	89.6	110.4	>+\- 10%
Sb	121	115	NoGas	106.240	2.760	2276067	0.86	100	106.2	89.6	110.4	
Ba	137	165	NoGas	99.614	0.896	733636	0.48	100	99.6	89.6	110.4	
Tl	205	165	NoGas	100.314	1.622	4480467	1.79	100	100.3	89.6	110.4	
Pb	208	165	NoGas	101.235	0.824	6226918	0.85	100	101.2	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	194962	0.25	195198	99.88	70	120	
Sc	45	H2	260427	2.25	275010	94.70	70	120	
Sc	45	He	88457	0.40	90637	97.60	70	120	
Sc	45	NoGas	1581847	1.40	1650351	95.85	70	120	
Ge	72	H2	64190	0.97	67975	94.43	70	120	
Ge	72	He	58052	0.95	59830	97.03	70	120	
Ge	72	NoGas	336745	1.48	348889	96.52	70	120	
In	115	H2	1566394	0.86	1679541	93.26	70	120	
In	115	He	518975	1.20	536823	96.68	70	120	
In	115	NoGas	2209706	1.99	2277482	97.02	70	120	
Tb	159	H2	3071305	2.55	3243898	94.68	70	120	
Tb	159	He	1744966	0.52	1782102	97.92	70	120	
Tb	159	NoGas	2895820	1.85	3021042	95.86	70	120	
Ho	165	H2	2929900	2.06	3096505	94.62	70	120	
Ho	165	He	1740378	1.92	1755286	99.15	70	120	
Ho	165	NoGas	2811939	0.68	2897681	97.04	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	009_ICB_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T12:10:10-08:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.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	-0.053	-24.8	347	18.5	0.1	
B	11	45	NoGas	-13.043	-1.8	103307	1.1	8	
Na	23	45	He	-4.928	-27.1	92725	1.7	50	
Mg	24	45	He	-0.425	-29.7	730	11.0	20	
Al	27	45	He	-0.364	-15.1	361	4.6	10	
K	39	45	He	3.521	20.3	52459	0.7	40	
Ca	44	45	He	-4.622	-25.3	197	17.9	150	
Ti	47	45	He	-0.053	-36.4	2	173.2	0.5	
V	51	45	He	0.008	146.2	843	9.2	0.4	
Cr	52	45	He	-0.006	-164.5	1256	6.1	0.2	
Mn	55	45	He	0.012	76.4	392	10.8	0.3	
Fe	56	45	He	-0.836	-4.4	9406	3.2	30	
Co	59	45	He	-0.009	-14.6	287	7.1	0.4	
Ni	60	45	He	-0.013	-82.9	546	6.4	0.4	
Cu	63	45	He	-0.074	-5.8	4660	1.2	0.4	
Zn	66	115	He	-0.371	-14.3	923	9.1	15	
As	75	115	He	0.015	12.1	59	3.5	0.2	
Se	78	72	H2	0.013	87.2	17	22.3	0.4	
Se	78	115	He	0.030	595.0	46	25.7	0.4	
Sr	88	115	NoGas	0.000	-271.9	720	8.3	0.1	
Mo	95	115	NoGas	-0.606	-2.0	2240	5.0	0.3	
Ag	107	115	NoGas	0.002	52.7	110	27.3	0.1	
Cd	111	115	He	-0.004	-48.2	9	48.0	0.1	
Sn	118	115	He	0.024	93.1	724	15.7	0.1	
Sn	118	115	NoGas	0.028	13.3	2321	2.1	0.1	
Sb	121	115	NoGas	-0.003	-269.1	3054	6.6	0.5	
Ba	137	165	NoGas	-0.004	-102.6	127	24.1	0.4	
Tl	205	165	NoGas	0.003	79.2	853	12.2	0.2	
Pb	208	165	NoGas	-0.068	-7.5	5007	7.5	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	191645	1.70	195198	98.18	70	120	
Sc	45	H2	255028	1.48	275010	92.73	70	120	
Sc	45	He	86743	0.67	90637	95.70	70	120	
Sc	45	NoGas	1548675	0.76	1650351	93.84	70	120	
Ge	72	H2	64029	0.85	67975	94.20	70	120	
Ge	72	He	57743	1.06	59830	96.51	70	120	
Ge	72	NoGas	333157	0.75	348889	95.49	70	120	
In	115	H2	1553106	0.74	1679541	92.47	70	120	
In	115	He	518303	0.36	536823	96.55	70	120	
In	115	NoGas	2170704	0.44	2277482	95.31	70	120	
Tb	159	H2	3050079	0.95	3243898	94.03	70	120	
Tb	159	He	1766054	0.86	1782102	99.10	70	120	
Tb	159	NoGas	2974730	0.57	3021042	98.47	70	120	
Ho	165	H2	2895402	1.49	3096505	93.51	70	120	
Ho	165	He	1740559	2.31	1755286	99.16	70	120	
Ho	165	NoGas	2855096	1.25	2897681	98.53	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	013_CCV_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T12:34:19-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.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	51.142	0.575	260360	0.32	50	102.3	89.6	110.4	
B	11	45	NoGas	46.724	2.997	293119	0.87	50	93.4	89.6	110.4	
Na	23	45	He	1272.443	1.464	1707246	1.38	1250	101.8	89.6	110.4	
Mg	24	45	He	2555.848	0.585	1729855	0.67	2500	102.2	89.6	110.4	
Al	27	45	He	1009.889	1.652	269124	1.72	1000	101.0	89.6	110.4	
K	39	45	He	1001.713	1.430	594741	1.27	1000	100.2	89.6	110.4	
Ca	44	45	He	2506.205	0.245	77113	0.16	2500	100.2	89.6	110.4	
Ti	47	45	He	50.422	0.633	10144	0.69	50	100.8	89.6	110.4	
V	51	45	He	50.326	1.204	341142	1.27	50	100.7	89.6	110.4	
Cr	52	45	He	50.217	0.306	413321	0.28	50	100.4	89.6	110.4	
Mn	55	45	He	51.122	1.564	240215	1.63	50	102.2	89.6	110.4	
Fe	56	45	He	1035.718	0.669	7482641	0.72	1000	103.6	89.6	110.4	
Co	59	45	He	49.708	1.370	672883	1.43	50	99.4	89.6	110.4	
Ni	60	45	He	51.028	1.395	181447	1.48	50	102.1	89.6	110.4	
Cu	63	45	He	50.883	1.073	501032	1.14	50	101.8	89.6	110.4	
Zn	66	115	He	48.766	1.151	82911	1.42	50	97.5	89.6	110.4	
As	75	115	He	48.506	0.506	52556	0.57	50	97.0	89.6	110.4	
Se	78	72	H2	49.112	0.833	16212	1.06	50	98.2	89.6	110.4	
Se	78	115	He	48.010	0.990	3332	1.19	50	96.0	89.6	110.4	
Sr	88	115	NoGas	49.453	3.876	2624342	3.14	50	98.9	89.6	110.4	
Mo	95	115	NoGas	48.066	0.667	485249	1.40	50	96.1	89.6	110.4	
Ag	107	115	NoGas	24.381	1.079	630459	0.97	25	97.5	89.6	110.4	
Cd	111	115	He	49.512	1.090	116384	1.25	50	99.0	89.6	110.4	
Sn	118	115	He	48.980	1.111	244820	0.98	50	98.0	89.6	110.4	
Sn	118	115	NoGas	48.351	0.695	753203	0.78	50	96.7	89.6	110.4	
Sb	121	115	NoGas	45.811	1.189	985434	1.79	50	91.6	89.6	110.4	
Ba	137	165	NoGas	49.110	1.089	368445	1.30	50	98.2	89.6	110.4	
Tl	205	165	NoGas	50.910	0.976	2316053	0.92	50	101.8	89.6	110.4	
Pb	208	165	NoGas	49.133	0.378	3082614	0.61	50	98.3	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	197336	0.54	195198	101.10	70	120	
Sc	45	H2	260527	0.42	275010	94.73	70	120	
Sc	45	He	87390	0.09	90637	96.42	70	120	
Sc	45	NoGas	1564829	0.89	1650351	94.82	70	120	
Ge	72	H2	64072	0.36	67975	94.26	70	120	
Ge	72	He	58503	3.02	59830	97.78	70	120	
Ge	72	NoGas	332416	0.30	348889	95.28	70	120	
In	115	H2	1564386	0.75	1679541	93.14	70	120	
In	115	He	529605	0.32	536823	98.66	70	120	
In	115	NoGas	2213713	0.78	2277482	97.20	70	120	
Tb	159	H2	3057278	1.61	3243898	94.25	70	120	
Tb	159	He	1787434	0.81	1782102	100.30	70	120	
Tb	159	NoGas	2945888	1.41	3021042	97.51	70	120	
Ho	165	H2	2931926	0.71	3096505	94.68	70	120	
Ho	165	He	1750578	0.95	1755286	99.73	70	120	
Ho	165	NoGas	2863812	0.98	2897681	98.83	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	015_CCB_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T12:46:22-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.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	-0.067	-15.1	283	16.3	0.1	
B	11	45	NoGas	-12.442	-3.5	108094	1.1	8	
Na	23	45	He	-8.096	-17.6	90362	1.0	50	
Mg	24	45	He	-0.297	-6.7	831	2.1	20	
Al	27	45	He	-0.373	-33.0	366	9.8	10	
K	39	45	He	2.468	14.2	52840	1.1	40	
Ca	44	45	He	-4.633	-28.2	200	20.5	150	
Ti	47	45	He	-0.031	-1.1	7	0.0	0.5	
V	51	45	He	0.018	39.1	921	4.0	0.4	
Cr	52	45	He	-0.019	-53.5	1174	7.9	0.2	
Mn	55	45	He	-0.002	-282.8	333	8.2	0.3	
Fe	56	45	He	-0.861	-3.0	9398	2.5	30	
Co	59	45	He	-0.013	-14.0	238	10.7	0.4	
Ni	60	45	He	-0.008	-164.0	574	8.0	0.4	
Cu	63	45	He	-0.133	-19.4	4162	6.4	0.4	
Zn	66	115	He	-0.421	-14.5	867	10.2	15	
As	75	115	He	0.010	80.7	55	17.7	0.2	
Se	78	72	H2	0.010	227.1	16	46.1	0.4	
Se	78	115	He	0.164	35.1	57	7.6	0.4	
Sr	88	115	NoGas	-0.001	-199.7	693	22.9	0.1	
Mo	95	115	NoGas	-0.673	-1.4	1637	5.2	0.3	
Ag	107	115	NoGas	0.001	153.5	83	50.0	0.1	
Cd	111	115	He	-0.001	-362.6	17	25.0	0.1	
Sn	118	115	He	0.020	28.0	723	3.5	0.1	
Sn	118	115	NoGas	0.031	23.6	2436	5.7	0.1	
Sb	121	115	NoGas	0.006	131.4	3344	4.4	0.5	
Ba	137	165	NoGas	-0.005	-89.8	117	30.1	0.4	
Tl	205	165	NoGas	-0.007	-38.8	387	36.8	0.2	
Pb	208	165	NoGas	-0.089	-1.8	3804	2.8	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	197890	0.23	195198	101.38	70	120	
Sc	45	H2	260493	1.44	275010	94.72	70	120	
Sc	45	He	88327	1.08	90637	97.45	70	120	
Sc	45	NoGas	1591836	2.44	1650351	96.45	70	120	
Ge	72	H2	64814	0.93	67975	95.35	70	120	
Ge	72	He	58901	2.22	59830	98.45	70	120	
Ge	72	NoGas	334831	1.57	348889	95.97	70	120	
In	115	H2	1580971	0.25	1679541	94.13	70	120	
In	115	He	533904	1.67	536823	99.46	70	120	
In	115	NoGas	2241112	1.54	2277482	98.40	70	120	
Tb	159	H2	3086349	0.42	3243898	95.14	70	120	
Tb	159	He	1807898	2.46	1782102	101.45	70	120	
Tb	159	NoGas	2978273	2.49	3021042	98.58	70	120	
Ho	165	H2	2960020	0.93	3096505	95.59	70	120	
Ho	165	He	1788973	1.04	1755286	101.92	70	120	
Ho	165	NoGas	2918060	1.67	2897681	100.70	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	016ICSA_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T12:52:23-08:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.D
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	NoGas	-0.073	-22.1	233	33.3	0.1	
B	11	NoGas	-7.502	-4.2	112948	0.1	8	
Na	23	He	44998.522	0.6	54345016	0.7	60000	
Mg	24	He	45663.640	1.5	29477350	2.1	60000	
Al	27	He	46877.066	0.2	11900676	0.6	60000	
K	39	He	47143.373	1.1	24471456	1.6	60000	
Ca	44	He	47209.204	0.3	1380346	0.8	60000	
Ti	47	He	958.035	1.1	183707	1.6	1200	
V	51	He	0.012	44.7	837	4.6	0.2	
Cr	52	He	0.475	3.0	4972	2.0	30	
Mn	55	He	2.445	1.2	11270	1.8	24	
Fe	56	He	46401.073	1.0	319256503	1.6	60000	
Co	59	He	0.540	1.7	7367	1.9	5	
Ni	60	He	0.724	3.8	3018	2.6	20	
Cu	63	He	0.136	11.1	6423	2.4	25	
Zn	66	He	0.129	69.7	1619	8.2	60	
As	75	He	0.223	4.5	260	3.2	0.4	
Se	78	H2	0.030	36.1	21	17.0	0.4	
Se	78	He	0.262	54.2	58	16.1	0.4	
Sr	88	NoGas	1.935	1.2	95506	1.1	5	
Mo	95	NoGas	968.509	0.5	8882156	0.2	1200	
Ag	107	NoGas	0.014	17.7	373	14.8	5	
Cd	111	He	0.188	7.9	419	8.4	0.5	
Sn	118	He	0.241	7.2	1657	5.2	5	
Sn	118	NoGas	0.256	5.6	5460	4.1	5	
Sb	121	NoGas	0.289	6.8	8669	4.7	5	
Ba	137	NoGas	0.152	3.4	1220	3.8	1.5	
Tl	205	NoGas	0.004	4.2	867	1.8	0.2	
Pb	208	NoGas	0.003	218.4	8925	3.6	1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	182526	0.98	195198	93.51	70	120	
Sc	45	H2	248161	1.05	275010	90.24	70	120	
Sc	45	He	83392	0.56	90637	92.01	70	120	
Sc	45	NoGas	1450143	0.79	1650351	87.87	70	120	
Ge	72	H2	60018	1.21	67975	88.29	70	120	
Ge	72	He	55928	1.26	59830	93.48	70	120	
Ge	72	NoGas	327042	1.71	348889	93.74	70	120	
In	115	H2	1426177	1.53	1679541	84.91	70	120	
In	115	He	482372	0.84	536823	89.86	70	120	
In	115	NoGas	2044302	0.53	2277482	89.76	70	120	
Tb	159	H2	2884580	1.36	3243898	88.92	70	120	
Tb	159	He	1690499	1.32	1782102	94.86	70	120	
Tb	159	NoGas	2798856	0.44	3021042	92.65	70	120	
Ho	165	H2	2751202	1.13	3096505	88.85	70	120	
Ho	165	He	1680444	2.35	1755286	95.74	70	120	
Ho	165	NoGas	2699009	1.00	2897681	93.14	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	017ICSB_150128A.D
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T12:58:22-08:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.D
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	NoGas	47.912	0.770	227283	1.17	50	95.8	80	120	
B	11	NoGas	-7.619	-3.849	113219	1.98	-8	95.2	80	120	>+\- 20%
Na	23	He	46713.968	2.144	54776547	1.83	50000	93.4	80	120	
Mg	24	He	46588.394	1.481	29200740	1.30	50000	93.2	80	120	
Al	27	He	48132.468	2.198	11865746	2.45	50000	96.3	80	120	
K	39	He	48064.035	1.408	24225127	1.59	50000	96.1	80	120	
Ca	44	He	47760.143	0.729	1355960	0.49	50000	95.5	80	120	
Ti	47	He	980.240	0.966	182519	1.44	1000	98.0	80	120	
V	51	He	49.175	0.548	308883	0.12	50	98.4	80	120	
Cr	52	He	48.422	0.695	369330	0.44	50	96.8	80	120	
Mn	55	He	50.415	0.498	219512	0.93	50	100.8	80	120	
Fe	56	He	47862.289	0.398	319760450	0.80	50000	95.7	80	120	
Co	59	He	46.243	0.473	580051	0.52	50	92.5	80	120	
Ni	60	He	93.797	0.199	308586	0.42	100	93.8	80	120	
Cu	63	He	47.337	1.292	432243	0.93	50	94.7	80	120	
Zn	66	He	92.649	0.309	142333	0.48	100	92.6	80	120	
As	75	He	47.461	0.183	46886	0.56	50	94.9	80	120	
Se	78	H2	46.305	1.820	14319	1.40	50	92.6	80	120	
Se	78	He	47.070	2.940	2979	2.99	50	94.1	80	120	
Sr	88	NoGas	1.962	0.539	96800	1.03	-5	-39.2	80	120	
Mo	95	NoGas	1037.254	1.223	9509684	1.55	1050	98.8	80	120	
Ag	107	NoGas	95.206	1.422	2272660	1.27	100	95.2	80	120	
Cd	111	He	94.411	0.360	202319	0.25	100	94.4	80	120	
Sn	118	He	0.233	0.825	1621	1.01	50	0.5	80	120	>+\- 20%
Sn	118	NoGas	0.233	4.926	5120	2.64	50	0.5	80	120	>+\- 20%
Sb	121	NoGas	50.095	0.953	994475	0.12	50	100.2	80	120	
Ba	137	NoGas	45.960	1.613	331651	1.26	50	91.9	80	120	
Tl	205	NoGas	46.436	2.316	2031832	1.74	50	92.9	80	120	
Pb	208	NoGas	90.964	1.283	5481606	0.79	100	91.0	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	180737	1.01	195198	92.59	70	120	
Sc	45	H2	244935	0.86	275010	89.06	70	120	
Sc	45	He	80977	0.61	90637	89.34	70	120	
Sc	45	NoGas	1457887	1.23	1650351	88.34	70	120	
Ge	72	H2	60021	0.42	67975	88.30	70	120	
Ge	72	He	55523	1.29	59830	92.80	70	120	
Ge	72	NoGas	328485	1.13	348889	94.15	70	120	
In	115	H2	1412699	1.53	1679541	84.11	70	120	
In	115	He	482860	0.49	536823	89.95	70	120	
In	115	NoGas	2043762	0.98	2277482	89.74	70	120	
Tb	159	H2	2865128	0.33	3243898	88.32	70	120	
Tb	159	He	1649358	1.39	1782102	92.55	70	120	
Tb	159	NoGas	2832596	1.86	3021042	93.76	70	120	
Ho	165	H2	2784121	0.68	3096505	89.91	70	120	
Ho	165	He	1701541	2.25	1755286	96.94	70	120	
Ho	165	NoGas	2754511	0.60	2897681	95.06	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	013_CCV.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:44:24-08:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.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	54.869	1.371	290237	0.88	50	109.7	89.6	110.4	
B	11	45	NoGas	76.714	3.454	403039	1.66	50	153.4	89.6	110.4	>+/- 10%
Na	23	45	He	1319.306	3.717	1840217	1.50	1250	105.5	89.6	110.4	
Mg	24	45	He	2591.713	1.205	1828152	2.08	2500	103.7	89.6	110.4	
Al	27	45	He	1025.509	1.531	284768	0.64	1000	102.6	89.6	110.4	
K	39	45	He	1008.293	1.802	623502	1.50	1000	100.8	89.6	110.4	
Ca	44	45	He	2474.852	1.808	79360	1.87	2500	99.0	89.6	110.4	
Tl	47	45	He	49.664	3.182	10410	1.41	50	99.3	89.6	110.4	
V	51	45	He	50.034	1.800	353410	0.49	50	100.1	89.6	110.4	
Cr	52	45	He	50.009	2.249	428873	0.19	50	100.0	89.6	110.4	
Mn	55	45	He	51.163	1.505	250516	0.59	50	102.3	89.6	110.4	
Fe	56	45	He	1009.920	1.887	7604086	2.06	1000	101.0	89.6	110.4	
Co	59	45	He	48.685	1.719	686728	0.69	50	97.4	89.6	110.4	
Ni	60	45	He	49.934	1.436	185038	0.85	50	99.9	89.6	110.4	
Cu	63	45	He	49.333	1.444	506376	0.67	50	98.7	89.6	110.4	
Zn	66	115	He	48.452	1.269	86464	0.87	50	96.9	89.6	110.4	
As	75	115	He	49.079	0.240	55810	0.46	50	98.2	89.6	110.4	
Se	78	72	H2	47.691	1.320	17113	1.61	50	95.4	89.6	110.4	
Se	78	115	He	49.378	1.399	3595	0.80	50	98.8	89.6	110.4	
Sr	88	115	NoGas	50.153	3.063	2732328	1.76	50	100.3	89.6	110.4	
Mo	95	115	NoGas	48.431	2.534	501844	2.02	50	96.9	89.6	110.4	
Ag	107	115	NoGas	25.141	2.061	667470	2.31	25	100.6	89.6	110.4	
Cd	111	115	He	49.845	0.526	122967	0.21	50	99.7	89.6	110.4	
Sn	118	115	He	49.441	0.782	259357	0.58	50	98.9	89.6	110.4	
Sn	118	115	NoGas	49.966	2.092	798997	1.46	50	99.9	89.6	110.4	
Sb	121	115	NoGas	47.685	2.663	1052853	2.34	50	95.4	89.6	110.4	
Ba	137	165	NoGas	49.512	2.359	396195	1.89	50	99.0	89.6	110.4	
Tl	205	165	NoGas	50.805	2.622	2465223	2.02	50	101.6	89.6	110.4	
Pb	208	165	NoGas	48.844	2.236	3268674	1.67	50	97.7	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	238375	0.93	195198	122.12	70	120	ISTD Failed
Sc	45	H2	273332	1.05	275010	99.39	70	120	
Sc	45	He	91084	2.09	90637	100.49	70	120	
Sc	45	NoGas	1626198	0.50	1650351	98.54	70	120	
Ge	72	H2	69653	1.71	67975	102.47	70	120	
Ge	72	He	62007	1.50	59830	103.64	70	120	
Ge	72	NoGas	359918	1.41	348889	103.16	70	120	
In	115	H2	1630616	0.32	1679541	97.09	70	120	
In	115	He	555843	0.70	536823	103.54	70	120	
In	115	NoGas	2272929	1.69	2277482	99.80	70	120	
Tb	159	H2	3139303	2.05	3243898	96.78	70	120	
Tb	159	He	1875340	1.37	1782102	105.23	70	120	
Tb	159	NoGas	3144286	2.01	3021042	104.08	70	120	
Ho	165	H2	3033560	0.38	3096505	97.97	70	120	
Ho	165	He	1858602	1.56	1755286	105.89	70	120	
Ho	165	NoGas	3054765	0.68	2897681	105.42	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	015_CCB.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:56:26-08:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	001CALB_150128A.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	-0.094	-7.0	150	24.0	0.1	
B	11	45	NoGas	12.681	3.6	193331	1.6	8	>LOD
Na	23	45	He	0.283	499.0	105173	0.8	50	
Mg	24	45	He	0.080	97.3	1133	4.2	20	
Al	27	45	He	-0.746	-31.3	276	22.9	10	
K	39	45	He	10.358	9.0	59496	1.6	40	
Ca	44	45	He	-4.609	-5.1	209	4.0	150	
Ti	47	45	He	-0.048	-32.6	3	100.1	0.5	
V	51	45	He	0.200	6.2	2256	3.9	0.4	
Cr	52	45	He	-0.041	-19.7	1030	6.0	0.2	
Mn	55	45	He	-0.005	-88.0	334	6.1	0.3	
Fe	56	45	He	-1.220	-2.3	7051	2.2	30	
Co	59	45	He	-0.022	-26.4	130	62.2	0.4	
Ni	60	45	He	-0.062	-9.2	396	6.3	0.4	
Cu	63	45	He	-0.311	-0.4	2507	1.5	0.4	
Zn	66	115	He	-0.574	-5.6	641	8.3	15	
As	75	115	He	0.032	33.5	82	13.8	0.2	
Se	78	72	H2	0.002	661.2	14	30.2	0.4	
Se	78	115	He	0.126	110.9	57	16.9	0.4	
Sr	88	115	NoGas	0.002	88.6	890	10.8	0.1	
Mo	95	115	NoGas	-0.729	-1.6	1117	12.4	0.3	
Ag	107	115	NoGas	0.060	6.3	1683	5.4	0.1	
Cd	111	115	He	-0.006	-45.1	5	137.8	0.1	
Sn	118	115	He	0.006	262.9	688	12.9	0.1	
Sn	118	115	NoGas	0.015	44.9	2262	3.5	0.1	
Sb	121	115	NoGas	-0.026	-31.8	2754	7.8	0.5	
Ba	137	165	NoGas	-0.003	-210.5	140	39.8	0.4	
Tl	205	165	NoGas	-0.006	-19.0	467	12.9	0.2	
Pb	208	165	NoGas	-0.121	-1.8	1840	7.8	0.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	238047	1.31	195198	121.95	70	120	ISTD Failed
Sc	45	H2	272067	1.55	275010	98.93	70	120	
Sc	45	He	91918	0.96	90637	101.41	70	120	
Sc	45	NoGas	1629718	0.82	1650351	98.75	70	120	
Ge	72	H2	68589	1.73	67975	100.90	70	120	
Ge	72	He	60847	1.76	59830	101.70	70	120	
Ge	72	NoGas	365937	1.10	348889	104.89	70	120	
In	115	H2	1629855	1.14	1679541	97.04	70	120	
In	115	He	560409	0.81	536823	104.39	70	120	
In	115	NoGas	2313691	2.13	2277482	101.59	70	120	
Tb	159	H2	3126365	1.16	3243898	96.38	70	120	
Tb	159	He	1855839	0.82	1782102	104.14	70	120	
Tb	159	NoGas	3146364	0.75	3021042	104.15	70	120	
Ho	165	H2	3041804	1.26	3096505	98.23	70	120	
Ho	165	He	1857952	0.73	1755286	105.85	70	120	
Ho	165	NoGas	3065603	0.54	2897681	105.80	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	01/27/15	01/28/15	#62A14-150127A-AZ10128

Metals SC-Blank-REG MDLs
Printed: 02/09/15 9:55:23 AM

Sample Report

Sample Table

Sample Name	150127A BLK
Data File Name	003SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T14:44:17-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	-0.102	-0.113	-1.37	117	4.95	10000	
B	11	45	NoGas	88.407	98.230	2.72	477717	0.82	10000	
Na	23	45	He	2.057	2.285	13.42	113685	1.23	1000000	
Mg	24	45	He	0.801	0.889	7.11	1740	3.14	1000000	
Al	27	45	He	6.791	7.546	8.34	2520	6.01	1000000	
K	39	45	He	0.757	0.842	251.47	57090	1.30	500000	
Ca	44	45	He	5.244	5.827	29.89	557	10.39	500000	
Ti	47	45	He	0.075	0.083	31.35	31	16.37	10000	
V	51	45	He	-0.069	-0.076	-9.43	364	13.88	10000	
Cr	52	45	He	-0.004	-0.004	-616.49	1430	15.38	10000	
Mn	55	45	He	0.167	0.186	6.57	1251	5.00	50000	
Fe	56	45	He	1.182	1.313	4.54	26713	1.10	1000000	
Co	59	45	He	-0.014	-0.015	-11.37	254	9.48	10000	
Ni	60	45	He	-0.064	-0.071	-15.94	410	9.38	10000	
Cu	63	45	He	-0.405	-0.450	-1.01	1633	2.04	10000	
Zn	66	115	He	0.638	0.708	11.10	2945	4.13	50000	
As	75	115	He	-0.013	-0.015	-50.72	33	24.93	2000	
Se	78	72	H2	-0.016	-0.018	-29.04	8	20.15	10000	
Se	78	115	He	0.020	0.022	359.90	52	10.87	10000	
Sr	88	115	NoGas	0.014	0.015	4.55	1610	2.24	50000	
Mo	95	115	NoGas	-0.765	-0.850	-0.36	770	4.68	10000	
Ag	107	115	NoGas	0.000	0.000	-178.30	50	34.64	5000	
Cd	111	115	He	0.005	0.005	135.19	33	52.79	10000	
Sn	118	115	He	-0.039	-0.043	-46.43	476	20.73	10000	
Sn	118	115	NoGas	-0.038	-0.042	-5.47	1459	3.66	10000	
Sb	121	115	NoGas	-0.099	-0.111	-1.68	1143	3.31	10000	
Ba	137	165	NoGas	0.052	0.058	22.30	600	14.81	50000	
Tl	205	165	NoGas	-0.005	-0.006	-67.90	523	35.25	5000	
Pb	208	165	NoGas	-0.053	-0.059	-3.57	6534	0.92	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	268758	1.89	195198	137.68	70	120	ISTD Failed
Sc	45	H2	283669	0.32	275010	103.15	70	120	
Sc	45	He	97168	0.89	90637	107.21	70	120	
Sc	45	NoGas	1760316	2.42	1650351	106.66	70	120	
Ge	72	H2	71169	0.90	67975	104.70	70	120	
Ge	72	He	63092	0.25	59830	105.45	70	120	
Ge	72	NoGas	360474	0.41	348889	103.32	70	120	
In	115	H2	1737225	0.32	1679541	103.43	70	120	
In	115	He	593801	0.52	536823	110.61	70	120	
In	115	NoGas	2405106	1.27	2277482	105.60	70	120	
Tb	159	H2	3238045	1.26	3243898	99.82	70	120	
Tb	159	He	1964344	1.37	1782102	110.23	70	120	
Tb	159	NoGas	3241569	2.01	3021042	107.30	70	120	
Ho	165	H2	3133507	1.04	3096505	101.19	70	120	
Ho	165	He	1963130	0.90	1755286	111.84	70	120	
Ho	165	NoGas	3149943	1.26	2897681	108.71	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	46.2	92.4	80-120	01/27/15	01/28/15	#62A14-150127A-AZ10128

Comments: _____

Sample Report

Sample Table

Sample Name	150127A LCS
Data File Name	004SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T14:50:18-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	9.273	10.304	0.99	50999	0.57	10000	
B	11	45	NoGas	125.067	138.964	1.98	577699	0.38	10000	
Na	23	45	He	4238.667	4709.630	3.97	5921385	4.10	1000000	
Mg	24	45	He	4318.413	4798.236	0.24	3172018	1.16	1000000	
Al	27	45	He	355.617	395.129	1.11	103191	0.88	1000000	
K	39	45	He	855.507	950.564	0.85	559429	0.77	500000	
Ca	44	45	He	4260.677	4734.086	1.07	142040	0.49	500000	
Ti	47	45	He	42.369	47.077	2.63	9254	1.63	10000	
V	51	45	He	43.616	48.462	0.81	321034	0.25	10000	
Cr	52	45	He	42.032	46.702	0.76	375759	0.85	10000	
Mn	55	45	He	43.377	48.197	0.82	221298	0.53	50000	
Fe	56	45	He	177.666	197.407	1.14	1407393	2.15	1000000	
Co	59	45	He	40.128	44.586	0.43	589718	0.62	10000	
Ni	60	45	He	41.419	46.021	1.08	159987	0.63	10000	
Cu	63	45	He	40.775	45.306	1.03	436980	0.04	10000	
Zn	66	115	He	79.666	88.518	0.87	146987	1.78	50000	
As	75	115	He	39.299	43.666	0.76	46554	0.67	2000	
Se	78	72	H2	39.395	43.772	0.91	14459	2.39	10000	
Se	78	115	He	39.789	44.210	4.50	3026	3.49	10000	
Sr	88	115	NoGas	42.380	47.089	1.01	2394239	1.57	50000	
Mo	95	115	NoGas	42.014	46.682	1.86	452464	0.50	10000	
Ag	107	115	NoGas	16.588	18.431	0.25	456539	1.10	5000	
Cd	111	115	He	8.044	8.938	1.08	20687	2.00	10000	
Sn	118	115	He	42.513	47.237	0.61	232372	0.39	10000	
Sn	118	115	NoGas	42.032	46.702	1.86	697051	0.52	10000	
Sb	121	115	NoGas	41.759	46.399	0.86	956261	0.77	10000	
Ba	137	165	NoGas	42.137	46.819	2.17	341106	0.83	50000	
Tl	205	165	NoGas	42.969	47.744	2.49	2109202	0.91	5000	
Pb	208	165	NoGas	41.612	46.236	1.97	2818497	0.73	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	259602	0.18	195198	132.99	70	120	ISTD Failed
Sc	45	H2	283281	0.24	275010	103.01	70	120	
Sc	45	He	94864	1.04	90637	104.66	70	120	
Sc	45	NoGas	1672562	1.55	1650351	101.35	70	120	
Ge	72	H2	71219	1.55	67975	104.77	70	120	
Ge	72	He	63257	0.41	59830	105.73	70	120	
Ge	72	NoGas	349286	0.53	348889	100.11	70	120	
In	115	H2	1673643	1.36	1679541	99.65	70	120	
In	115	He	578934	0.93	536823	107.84	70	120	
In	115	NoGas	2356126	1.35	2277482	103.45	70	120	
Tb	159	H2	3203469	0.45	3243898	98.75	70	120	
Tb	159	He	1924466	1.34	1782102	107.99	70	120	
Tb	159	NoGas	3207453	1.58	3021042	106.17	70	120	
Ho	165	H2	3093592	0.73	3096505	99.91	70	120	
Ho	165	He	1899595	0.73	1755286	108.22	70	120	
Ho	165	NoGas	3090936	2.60	2897681	106.67	70	120	

Matrix Spike Recoveries

METALS

APPL ID: **150127W-10128 MS - 194042**

Sample ID: AZ10128

Client ID: RHMW06-GW-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	ND	42.8	42.9	85.6	85.8	0.2	20	80-120	01/27/15	01/28/15	01/27/15	01/28/15	194042	AZ10128

Comments: _____

Sample Report

Sample Table

Sample Name	AZ10128W36 MS
Data File Name	009SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:20:21-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	8.377	9.308	4.02	47922	2.95	10000	
B	11	45	NoGas	130.601	145.112	2.16	619589	0.67	10000	
Na	23	45	He	154015.631	171128.478	1.37	202576494	0.72	1000000	
Mg	24	45	He	61818.115	68686.794	2.54	43512550	2.40	1000000	
Al	27	45	He	354.521	393.912	0.56	98626	1.25	1000000	
K	39	45	He	3392.185	3769.094	0.48	1969282	0.35	500000	
Ca	44	45	He	46365.150	51516.833	1.16	1478304	1.01	500000	
Ti	47	45	He	42.696	47.440	1.61	8941	2.17	10000	
V	51	45	He	56.542	62.825	1.18	398716	0.46	10000	
Cr	52	45	He	42.132	46.813	0.58	361082	1.11	10000	
Mn	55	45	He	43.995	48.883	0.93	215159	0.17	50000	
Fe	56	45	He	172.136	191.262	2.24	1307442	1.58	1000000	
Co	59	45	He	38.465	42.738	1.04	541929	1.39	10000	
Ni	60	45	He	40.319	44.799	1.08	149323	1.45	10000	
Cu	63	45	He	38.081	42.312	1.45	391616	1.46	10000	
Zn	66	115	He	100.351	111.501	0.52	170743	1.07	50000	
As	75	115	He	41.693	46.325	0.52	45655	0.49	2000	
Se	78	72	H2	39.667	44.075	2.80	13547	1.28	10000	
Se	78	115	He	40.945	45.494	0.84	2878	0.61	10000	
Sr	88	115	NoGas	390.253	433.614	0.89	20200614	0.74	50000	
Mo	95	115	NoGas	42.978	47.753	1.14	424079	0.53	10000	
Ag	107	115	NoGas	15.749	17.498	0.79	397275	0.68	5000	
Cd	111	115	He	8.054	8.949	1.86	19149	2.78	10000	
Sn	118	115	He	42.439	47.155	0.31	214449	0.89	10000	
Sn	118	115	NoGas	42.270	46.967	0.62	642608	1.17	10000	
Sb	121	115	NoGas	43.717	48.574	1.07	917417	0.59	10000	
Ba	137	165	NoGas	53.406	59.340	0.73	402131	0.33	50000	
Tl	205	165	NoGas	41.241	45.824	0.95	1883360	1.39	5000	
Pb	208	165	NoGas	38.487	42.764	0.33	2425751	1.00	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	227893	1.45	195198	116.75	70	120	
Sc	45	H2	274545	1.79	275010	99.83	70	120	
Sc	45	He	90940	0.77	90637	100.33	70	120	
Sc	45	NoGas	1737630	1.26	1650351	105.29	70	120	
Ge	72	H2	66299	2.04	67975	97.53	70	120	
Ge	72	He	58203	0.20	59830	97.28	70	120	
Ge	72	NoGas	328853	0.58	348889	94.26	70	120	
In	115	H2	1528705	2.55	1679541	91.02	70	120	
In	115	He	535194	0.92	536823	99.70	70	120	
In	115	NoGas	2159579	1.34	2277482	94.82	70	120	
Tb	159	H2	2920811	1.94	3243898	90.04	70	120	
Tb	159	He	1794435	0.72	1782102	100.69	70	120	
Tb	159	NoGas	2932208	0.44	3021042	97.06	70	120	
Ho	165	H2	2866831	1.90	3096505	92.58	70	120	
Ho	165	He	1769993	1.26	1755286	100.84	70	120	
Ho	165	NoGas	2874436	1.02	2897681	99.20	70	120	

Sample Report

Sample Table

Sample Name	AZ10128W36 MSD
Data File Name	010SMPL.d
Data Path Name	K:\ICP-MS Megatron\Data\150128B.b
Acq Date Time	2015-01-28T15:26:22-08:00
Sample Type	Sample
Dilution	1.111111111
Comment	
ISTD Ref FileName	001CALB_150128A.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	8.265	9.183	1.85	47310	0.56	10000	
B	11	45	NoGas	129.938	144.375	3.28	617390	0.57	10000	
Na	23	45	He	155809.978	173122.198	2.00	206764290	1.50	1000000	
Mg	24	45	He	62340.998	69267.776	2.07	44273730	2.07	1000000	
Al	27	45	He	361.739	401.933	2.79	101512	2.35	1000000	
K	39	45	He	3334.103	3704.559	2.72	1953666	2.28	500000	
Ca	44	45	He	46328.010	51475.566	1.63	1490342	1.64	500000	
Ti	47	45	He	43.542	48.380	1.85	9199	2.08	10000	
V	51	45	He	56.159	62.399	1.54	399560	1.09	10000	
Cr	52	45	He	41.922	46.580	0.83	362494	0.90	10000	
Mn	55	45	He	43.383	48.204	1.65	214065	1.08	50000	
Fe	56	45	He	172.970	192.189	4.62	1325375	4.12	1000000	
Co	59	45	He	38.144	42.382	1.45	542177	0.97	10000	
Ni	60	45	He	40.210	44.678	2.35	150242	2.06	10000	
Cu	63	45	He	37.728	41.920	1.00	391496	0.49	10000	
Zn	66	115	He	100.501	111.668	2.01	168366	1.45	50000	
As	75	115	He	41.988	46.653	1.30	45273	0.26	2000	
Se	78	72	H2	39.755	44.172	1.93	13367	1.71	10000	
Se	78	115	He	41.288	45.876	2.67	2857	2.39	10000	
Sr	88	115	NoGas	387.360	430.400	0.35	19884417	0.79	50000	
Mo	95	115	NoGas	42.966	47.740	1.00	420471	1.67	10000	
Ag	107	115	NoGas	15.902	17.669	1.30	397836	1.86	5000	
Cd	111	115	He	7.908	8.787	0.97	18512	0.52	10000	
Sn	118	115	He	42.903	47.670	1.04	213483	1.77	10000	
Sn	118	115	NoGas	42.832	47.592	1.15	645671	0.69	10000	
Sb	121	115	NoGas	43.568	48.409	1.76	906650	0.93	10000	
Ba	137	165	NoGas	53.110	59.011	2.31	399879	1.02	50000	
Tl	205	165	NoGas	40.574	45.082	1.36	1852872	0.68	5000	
Pb	208	165	NoGas	38.575	42.861	2.63	2431015	1.77	50000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	NoGas	227234	2.35	195198	116.41	70	120	
Sc	45	H2	271614	0.82	275010	98.77	70	120	
Sc	45	He	91752	0.57	90637	101.23	70	120	
Sc	45	NoGas	1738301	1.90	1650351	105.33	70	120	
Ge	72	H2	65254	0.87	67975	96.00	70	120	
Ge	72	He	58947	0.15	59830	98.52	70	120	
Ge	72	NoGas	330020	1.89	348889	94.59	70	120	
In	115	H2	1515457	0.72	1679541	90.23	70	120	
In	115	He	527019	1.10	536823	98.17	70	120	
In	115	NoGas	2141534	0.94	2277482	94.03	70	120	
Tb	159	H2	2905819	1.80	3243898	89.58	70	120	
Tb	159	He	1804395	1.26	1782102	101.25	70	120	
Tb	159	NoGas	2943192	0.62	3021042	97.42	70	120	
Ho	165	H2	2793691	1.03	3096505	90.22	70	120	
Ho	165	He	1794735	1.09	1755286	102.25	70	120	
Ho	165	NoGas	2874741	1.47	2897681	99.21	70	120	

US EPA Tune Check Sample Report

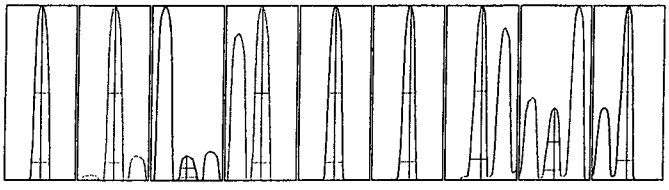
Batch Folder K:\ICP-MS Megatron\Data\150128A.b
Report Comment C:\Agilent\ICPMH\Report Templates\en\Letter\Tune Report\New and Improved 200_8TuneCheckSampleReport.xltx
Instrument Name G3281A JP12101628

[NoGas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
9	7816187	0.59	5.00	
24	35061413	0.69	5.00	
25	4893355	0.47	5.00	
26	5707507	0.54	5.00	
59	57913806	1.13	5.00	
115	80537241	0.85	5.00	
206	18817892	0.67	5.00	
207	16679367	1.06	5.00	
208	38886695	0.73	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	7839625	7860467	7769764	7762394	7848685
24	35194145	34853698	35259384	34747391	35252449
25	4892405	4913871	4906194	4854341	4899961
26	5711762	5723108	5742493	5659972	5700199
59	58428082	56792028	57939691	58320454	58088776
115	81181538	79615072	80025123	80813351	81051120
206	18802615	18958923	18934111	18680691	18713122
207	16445764	16853696	16586676	16857161	16653538
208	38548701	39266885	38734478	39067852	38815557

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
9	1258948	9.05	8.9 - 9.1		0.768	0.900	
24	5847916	24.05	23.9 - 24.1		0.754	0.900	
25	802677	25.00	24.9 - 25.1		0.733	0.900	
26	949724	26.05	25.9 - 26.1		0.757	0.900	
59	9851894	59.05	58.9 - 59.1		0.723	0.900	
115	14595024	115.10	114.9 - 115.1		0.711	0.900	
206	3433464	206.05	205.9 - 206.1		0.738	0.900	
207	3005898	207.00	206.9 - 207.1		0.711	0.900	
208	7237038	208.00	207.9 - 208.1		0.722	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	0.46	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

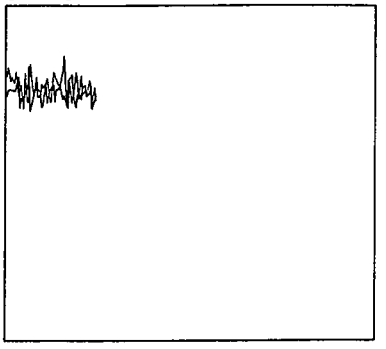
ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	9.6	V			
Extract 2	-200.0	V	Cell Entrance	-30	V			
Omega Bias	-85	V	Cell Exit	-50	V			
Deflect	10.2	V						

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	190	V			
Energy Discrimination	5.1	V						

Current Signal

[NoGas]



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1433	1521.4	4.89
59	5000	3754	3685.7	3.31
89	10000	5430	5540.0	3.21
140	10000	5299	5494.9	3.48
205	5000	3655	3691.3	3.58
156/140	2	0.434 %	0.676 %	21.74
70/140	20	7.417 %	7.898 %	9.94

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	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	9.6	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-85	V	Cell Exit	-50	V
Deflect	10.2	V			

Cell Parameters

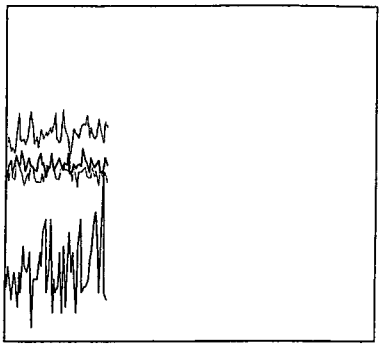
Use Gas	false		3rd Gas Flow	0	%
He Flow	0.0	mL/min	OctP Bias	-8.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.1	V			

Meters

IF/BK Press	2.32E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	2.32E-4	Pa	Reflected Power	79	W
Forward Power	1600	W			

Current Signal

[He]



Mass	Range	Count	Avg. Count	RSD [%]
59	2000	1274	1233.9	5.23
89	2000	943	995.6	4.19
140	5000	2560	2596.8	4.24
205	5000	2610	2624.7	3.60
156/140	1	0.234 %	0.285 %	43.01
75	50	6	10.6	43.44
78	20	4	5.7	58.07
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	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	9.6	V
Extract 2	-200.0	V	Cell Entrance	-40	V
Omega Bias	-85	V	Cell Exit	-60	V
Deflect	1.0	V			

Cell Parameters

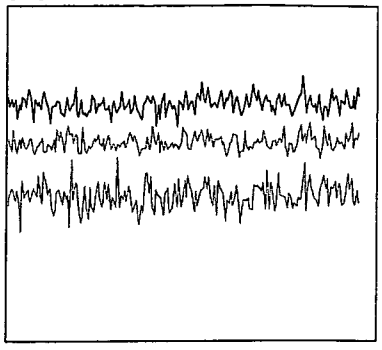
Use Gas	true		3rd Gas Flow	0	%
He Flow	3.9	mL/min	OctP Bias	-19.0	V
H2 Flow	0.0	mL/min	OctP RF	190	V
Energy Discrimination	5.0	V			

Meters

IF/BK Press	2.33E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	3.35E-4	Pa	Reflected Power	78	W
Forward Power	1601	W			

Current Signal

[H2]



Mass	Range	Count	Avg. Count	RSD [%]
59	500	204	214.5	8.92
89	5000	3091	2954.4	3.88
140	2000	1052	945.5	4.88
205	5000	3654	3537.0	3.58
56	20000	17145	16887.7	3.19
78	20	0	0.8	143.90
80	200	115	116.7	12.45
Integration Time [sec]			0.10	

Plasma Parameters

RF Power	1600	W	Carrier Gas	0.46	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	9.6	V
Extract 2	-200.0	V	Cell Entrance	-30	V
Omega Bias	-85	V	Cell Exit	-60	V
Deflect	-2.2	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	190	V
Energy Discrimination	3.0	V			

Meters

IF/BK Press	2.40E+2	Pa	TMP Revolution	100.0	%
Analyzer Press	1.15E-3	Pa	Reflected Power	78	W
Forward Power	1600	W			

JO 01/23/15

3% HCl
30 mL of HCL in 1000 mL of DI H2O
Prep Date: 01/23/15
Exp Date: 01/23/16
Prepared by: RE
Lot# HCL: BDH 87003 253

JO 01/23/15

SJH 01/26/15

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: 01/26/15 By: SJH Prep in - 1%HNO3/1.0%HCL: Final Volume: 250mL
Expires 02/24/15

SJH 1/26/15

SJH 1/26/15
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 01/26/15

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 1/26/15

SJH 1/26/15
6010B/C
(A)

1%HNO3 / 5%HCl BLK				
AMOUNT	REAGENT	MANUFACTURER	LOT	OPEN DATE
100 mL	HCL	BDH	4114020	TODAY
20 mL	HNO3	JT BAKER	0000067379	TODAY
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				

SJH 1/26/15

STH 1/28/15
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 01/26/15

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	131145-32869
50 uL	QCS ICV B	CPI	131145-32870

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

STH 1/28/15

STH 1/28/15
6010 B/C
(A)

1%HNO3 / 5%HCl BLK					6010B/6010C ICSA				
AMOUNT	REAGENT	MANUFACTURER	LOT	OPEN DATE	AMOUNT	STD	MANUFACTURER	LOT	EXP DATE
100 mL	HCL	BDH	4114020	TODAY	1mL	Al	CPI	14D237-33868	01/15/16
20 mL	HNO3	JT BAKER	0000067379	TODAY	1mL	Ca	CPI	14D176-33867	01/15/16
Prepared in 2000 ml DI Water					1mL	Mg	CPI	14F190-33865	01/15/16
STD 1 / LDL 6010B/6010C					1mL	Fe	O2SI	1062942-33880	01/12/16
AMOUNT	STD	MANUFACTURER	LOT	EXP DATE	Prepared in 50 ml 1%HNO3/5%HCl				
0.5 mL	6010 LDL	O2SI	1062903-33879	08/01/15	6010B/6010C ICSAB				
Prepared in 50 ml 1%HNO3/5%HCl					1mL	Al	CPI	14D237-33868	01/15/16
STD 3 / HDL 6010B/6010C					1mL	Ca	CPI	14D176-33867	01/15/16
1ML	CCV-A	Environmental Express	1428118-34178	10/14/15	1mL	Mg	CPI	14F190-33865	01/15/16
1ML	CCV-B	Environmental Express	1428119-34179	10/14/15	1mL	Fe	O2SI	1062942-33880	01/12/16
1ML	CCV-C	Environmental Express	1428120-34180	10/14/15	0.5mL	INT SPECIAL MIX	O2SI	1054694-33223	01/01/15
Prepared in 100 ml 1%HNO3 / 5%HCl					Prepared in 50 ml 1%HNO3/5%HCl				
STD 2 / CCV1 6010B/6010C/6010C					6010B/6010C ICV				
AMOUNT	STD	PREP DATE	EXP DATE		0.5ML	QCS ICV A	CPI	131145-32869	03/18/15
25mL	STD 3	Today	1 week		0.5ML	QCS ICV B	CPI	131145-32870	03/18/15
25mL	1%HNO3/5%HCl	Today	1 week		Prepared in 50ml 1%HNO3/5%HCl				
CCV2 6010B/6010C					6010B/6010C Internal Standard				
AMOUNT	STD	PREP DATE	EXP DATE		AMOUNT	STD	MANUFACTURER		
15mL	STD 3	Today	1 week		2mL	Yttrium	O2SI	1052462-33100	04/24/15
25mL	1%HNO3/5%HCl	Today	1 week		Prepared in 2L 1%HNO3 / 5%HCl				

STH 1/28/15

RE 1/29/15

Hg WORKING STANDARDS 7470A/7471/245.1 ~~RE 1/29/15~~

Hg WORKING STD	1ml 10ug/ml Hg STOCK STD. 01/14/15 and 2mL HNO3 EMD LOT#54181 3180 to final vol 200mL with milipore water	exp: 02/11/15	final conc: 50ug/L expires daily
Hg WORKING ICV	1ml 10ug/ml Hg STOCK ICV 01/14/15 and 2mL HNO3 EMD LOT#54181 3180 to final vol 200mL with milipore water	exp: 02/11/15	final conc: 50ug/L expires daily

~~RE 1/29/15~~

RE 1/29/15

1.1% STANNOUS CHLORIDE
11g SnCl2 EMD Lot #B1006939-348
30 mL HCl BDH Lot #87003 253
Brought to 1000 mL with DI Water
Prep. Date 01/29/15
Exp. Date 01/29/15
By RE

6020/200.8 Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	28 Jan 2015	11:22	Calibration Blank		150128B	1.
2	28 Jan 2015	11:28	Standard 1		150128B	1.
3	28 Jan 2015	11:34	Standard 2		150128B	1.
4	28 Jan 2015	11:40	Standard 3		150128B	1.
5	28 Jan 2015	11:46	Standard 4		150128B	1.
6	28 Jan 2015	11:52	ICV		150128B	1.
8	28 Jan 2015	12:10	ICB		150128B	1.
12	28 Jan 2015	12:34	CCV		150128B	1.
13	28 Jan 2015	12:46	CCB		150128B	1.
14	28 Jan 2015	12:52	ICSA		150128B	1.
15	28 Jan 2015	12:58	ICSAB		150128B	1.
16	28 Jan 2015	14:44	150127A BLK		150128B	1.
17	28 Jan 2015	14:50	150127A LCS		150128B	1.
18	28 Jan 2015	15:02	AZ10126W12		150128B	1.
19	28 Jan 2015	15:08	AZ10127W12		150128B	1.
20	28 Jan 2015	15:14	AZ10128W36		150128B	1.
21	28 Jan 2015	15:20	AZ10128W36 MS		150128B	1.
22	28 Jan 2015	15:26	AZ10128W36 MSD		150128B	1.
23	28 Jan 2015	15:32	AZ10128W36-A		150128B	1.
25	28 Jan 2015	15:44	CCV		150128B	1.
26	28 Jan 2015	15:56	CCB		150128B	1.

Metals Digestion Worksheet

Method Name 3015 Digestion (Field Filter) **Prep Method** M3015F **Set** 150127A **Units** mL

Spikes			
Spiked ID 1	LCSW LOT # 1068928-34553		
Spiked ID 2	LCSW LOT # 1069074-34554		
Spiked ID 3			
Spiked ID 4			
Spiked By	NM	Date:	01/27/15 8:22:00 AM
Witnessed By	SJH	Date:	01/27/15 8:22:00 AM

Starting Temp:	17 c
Ending Temp:	170 c
Temperature Type:	Microwave
Sufficient Vol for Matrix QC:	Yes
End Date/Time	01/27/15 9:30

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	150127A Blk				45mL	50mL	01/27/15 8:22	equip: MultiWave
2	150127A LCS		90uL	1+2	45mL	50mL	01/27/15 8:22	equip: MultiWave
3	AZ10126	AZ10126W12			45mL	50mL	01/27/15 8:22	equip: MultiWave
4	AZ10127	AZ10127W12			45mL	50mL	01/27/15 8:22	equip: MultiWave
5	AZ10128	AZ10128W36			45mL	50mL	01/27/15 8:22	equip: MultiWave
6	AZ10128 MS	AZ10128W36	90uL	1+2	45mL	50mL	01/27/15 8:22	equip: MultiWave
7	AZ10128 MSD	AZ10128W36	90uL	1+2	45mL	50mL	01/27/15 8:22	equip: MultiWave

Solvent and Lot#
HNO3 EMD 54181 3179

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	SJH
Date	1/27/15
Time	14:15
Moved to	Metals

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	nm
Modified	01/27/15 8:02:53 AM

Reviewed By: SJH **Date:** 1/27/15

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	0.91 J	2.0	1.70	0.85	mg/L	02/04/15	02/04/15	#232W-150204A-AZ10128
EPA 353.2	NITRATE-NITRITE-N	0.100 U	0.10	0.100	0.028	mg/L	02/03/15	02/03/15	#35OF-150203A-AZ10128
EPA 9056	SULFATE	0.198 U	1.00	0.198	0.090	mg/L	01/27/15	01/27/15	#9056D-150127A-AZ10128

Wetlab SC-Blank-REG MDLs
Printed: 02/09/15 10:41:06 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	SULFATE	20.0	19.7	98.5	80-120	01/27/15	01/27/15	#9056D-150127A-AZ10128

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	5.16	5.20	103	104	0.77	20	90-110	02/03/15	02/03/15	02/03/15	02/03/15	#35OF-150203A-AZ10128
SM 2320B	TOTAL ALKALINITY AS CA	250	247	245	98.8	98.0	0.81	20	90-110	02/04/15	02/04/15	02/04/15	02/04/15	#232W-150204A-AZ10128

Comments:

Matrix Spike Recoveries

WETLAB

APPL ID: **150203W-10128 MS - 194032**

Sample ID: AZ10128

Client ID: RHMW06-GW-02

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	0.63	5.68	5.72	101	102	0.70	20	90-110	02/03/15	02/03/15	02/03/15	02/03/15	194032	AZ10128
EPA 9056	SULFATE	100	87.8	190	189	102	101	0.53	10	80-120	01/27/15	01/27/15	01/27/15	01/27/15	193861	AZ10128
SM 2320B	TOTAL ALKALINITY AS	250	139	381	381	96.8	96.8	0.0	20	90-110	02/04/15	02/04/15	02/04/15	02/04/15	194104	AZ10128

Comments: _____

Printed: 02/09/15 10:41:23 AM
APPL MSD SCII

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 Phase 1b

Sample ID: RHMW07-GW-02

Sample Collection Date: 01/22/15

APPL ID: AZ10126

ARF: 75450

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
EPA 353.2	NITRATE-NITRITE-N	0.29	0.10	0.100	0.028	mg/L	1	02/03/15	02/03/15
EPA 9056	SULFATE	58.2	2.00	0.396	0.180	mg/L	2	01/27/15	01/27/15
SM 2320B	TOTAL ALKALINITY AS CACO3	132	2.0	1.70	0.85	mg/L	1	02/04/15	02/04/15

Printed: 02/09/15 10:40:43 AM

APPL-F1-SC-NoMC-REG MDLs

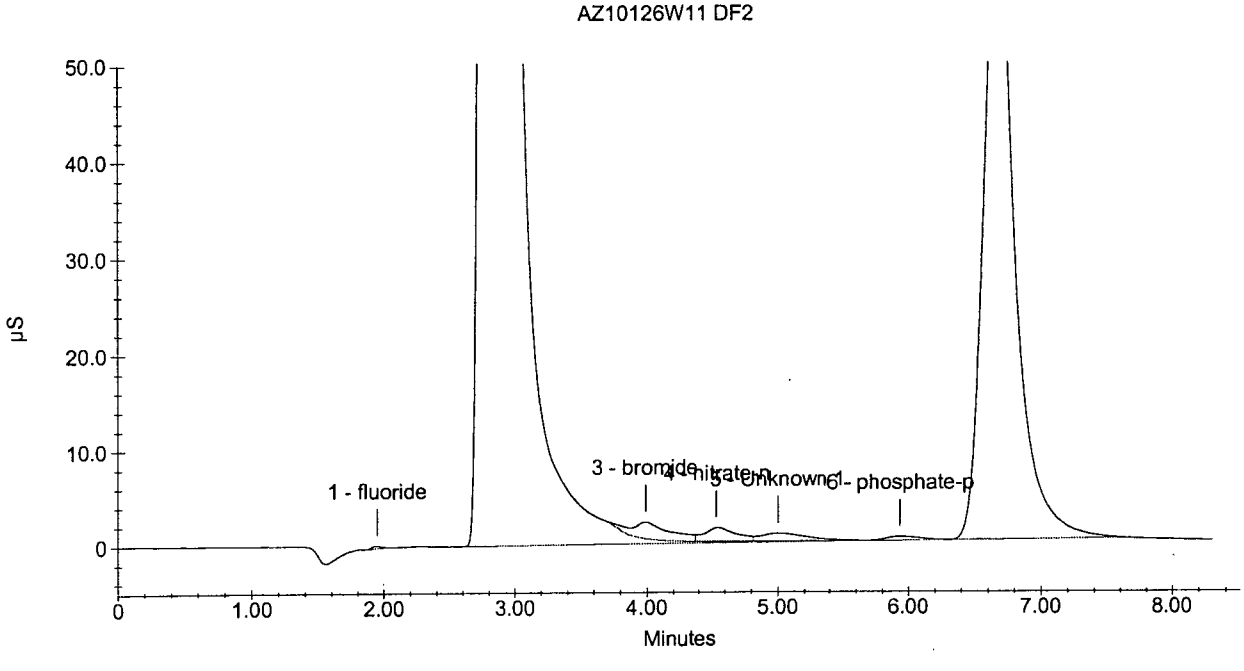
Sample Analysis Report

Sample Name : AZ10126W11 DF2
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_011.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 10:28:23
System Operator : mm
Injection Number : 11
Multiplier : 2.00

Peak Information : All Peaks

Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	1.95	fluoride	0.1978	13645	2660
2	2.84	chloride	394.8959	115368265	14070379
3	3.99	bromide	3.4451	331662	17857
4	4.53	nitrate-n	0.7200	235604	14207
5	5.00	Unknown 1	0.0000	196534	8044
6	5.93	phosphate-p	-0.2790	72051	4129
7	6.65	sulfate	58.1920	10741461	679524



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 Phase 1b

Sample ID: RHMW07-GW-02FD

Sample Collection Date: 01/22/15

APPL ID: AZ10127

ARF: 75450

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
EPA 353.2	NITRATE-NITRITE-N	0.33	0.10	0.100	0.028	mg/L	1	02/03/15	02/03/15
EPA 9056	SULFATE	59.9	2.00	0.396	0.180	mg/L	2	01/27/15	01/27/15
SM 2320B	TOTAL ALKALINITY AS CACO3	126	2.0	1.70	0.85	mg/L	1	02/04/15	02/04/15

Printed: 02/09/15 10:40:43 AM

APPL-F1-SC-NoMC-REG MDLs

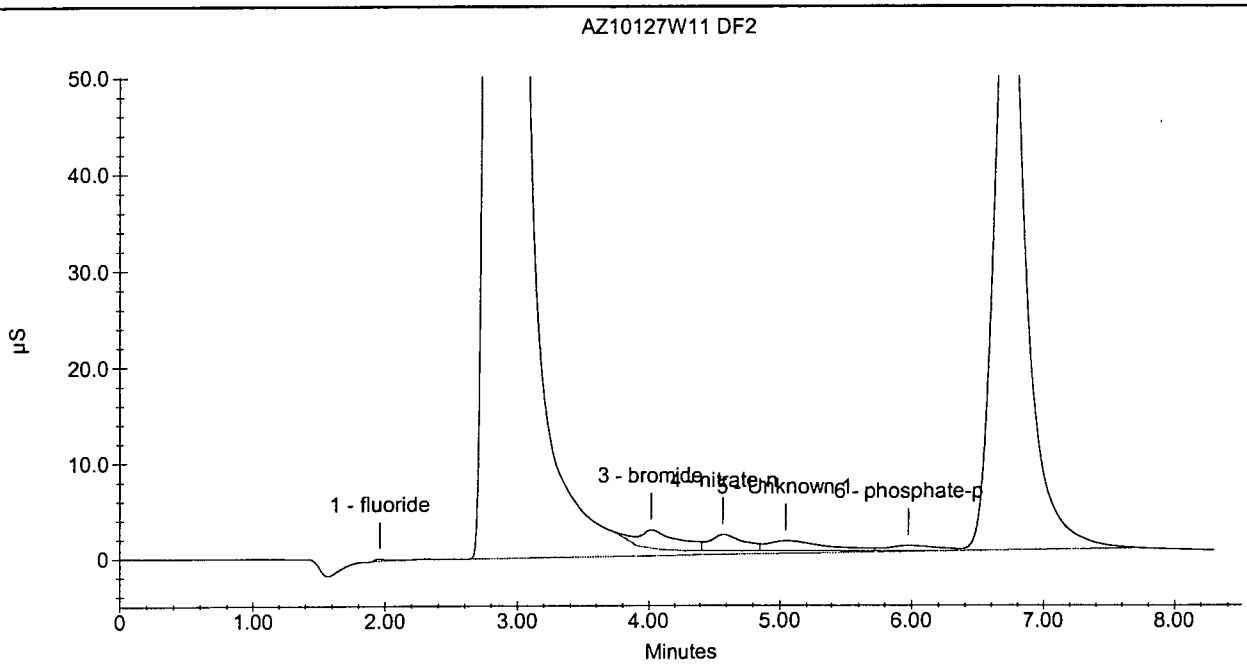
Sample Analysis Report

Sample Name : AZ10127W11 DF2
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_012.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 10:39:29
System Operator : mm
Injection Number : 12
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	fluoride	0.1971	13366	2451
2	2.85	chloride	401.9964	117454136	13648733
3	4.01	bromide	4.0497	399952	19465
4	4.57	nitrate-n	0.8184	300267	16922
5	5.04	Unknown 1	0.0000	316153	10460
6	5.97	phosphate-p	0.0197	138866	5666
7	6.71	sulfate	59.8905	11064384	692201



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 Phase 1b

Sample ID: RHMW06-GW-02

Sample Collection Date: 01/23/15

APPL ID: AZ10128

ARF: 75450

Method	Analyte	Result	LOQ	LOD	DL	Units	DF	Prep Date	Analysis Date
EPA 353.2	NITRATE-NITRITE-N	0.63	0.10	0.100	0.028	mg/L	1	02/03/15	02/03/15
EPA 9056	SULFATE	87.8	5.00	0.990	0.450	mg/L	5	01/27/15	01/27/15
SM 2320B	TOTAL ALKALINITY AS CACO3	139	2.0	1.70	0.85	mg/L	1	02/04/15	02/04/15

Printed: 02/09/15 10:40:43 AM

APPL-F1-SC-NoMC-REG MDLs

Sample Analysis Report

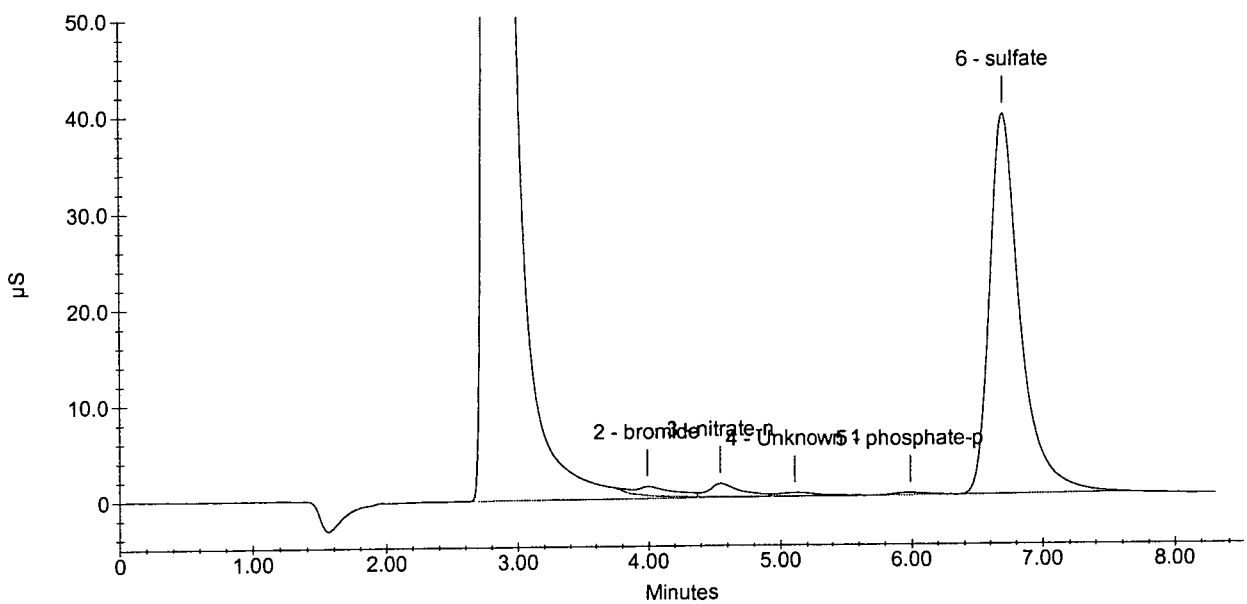
Sample Name : AZ10128W31 DF5
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_021.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 12:26:18
System Operator : mm
Injection Number : 21
Multiplier : 5.00

Peak Information : All Peaks

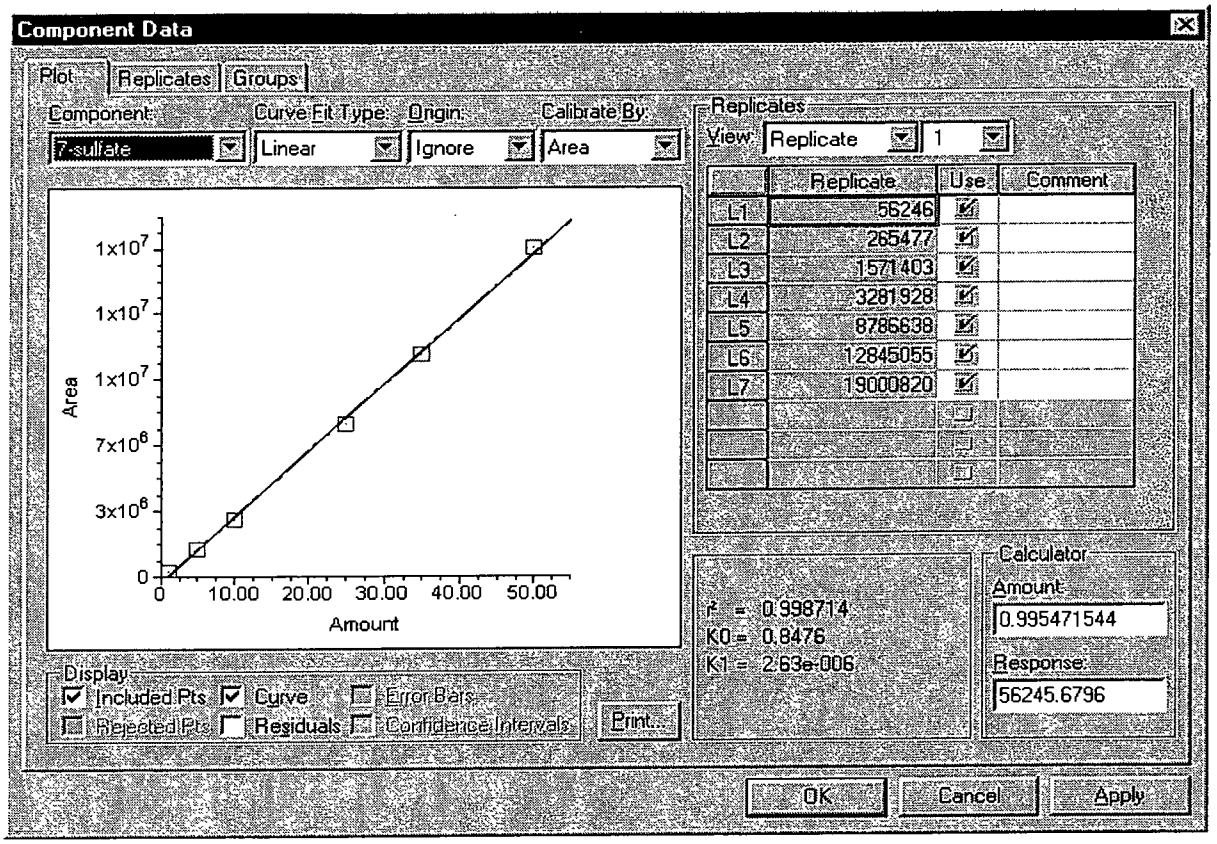
Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	2.81	chloride	457.5710	53129289	6925044
2	3.99	bromide	5.3338	183528	9483
3	4.55	nitrate-n	1.7150	213241	13510
4	5.11	Unknown 1	0.0000	74566	3382
5	5.99	phosphate-p	-1.0128	43838	2493
6	6.69	sulfate	87.8199	6356416	393526

AZ10128W31 DF5



INORGANIC ANALYSIS
Calibration Data

APPL, INC.


Component Data
Plot
Replicates
Groups
Component:
7-sulfate
Curve Fit Type:
Linear
Origin:
Ignore
Calibrate By:
Area
Area
Amount
Replicates
View:
Replicate
1
Replicate
Use
Comment
L1 56246
L2 265477
L3 1571403
L4 3281928
L5 8786638
L6 12845055
L7 19000820
r² = 0.998714
K0 = 0.8476
K1 = 2.63e-006
Calculator
Amount:
0.995471544
Response:
56245.6796
Display
Included Pts
Rejected Pts
Curve
Residuals
Error Bars
Confidence Intervals
Print...
OK
Cancel
Apply

INORGANIC ANALYSES
AUTO CALIBRATION

Analytical Method: 300/9056A

Lab Name: APPL, Inc.

Instrument ID: Dionex

Autocal ID: 150119a

Concentration Units (mg/L or mg/kg): mg/L

Analyte	1	2	3	4	5	6	7
	Autocal 10:13	Autocal 10:24	Autocal 10:35	Autocal 10:46	Autocal 10:57	Autocal 11:09	Autocal 11:20
Bromide	16557	104553	495234	1035484	2706544	3879516	5636459
Chloride	101578	432727	2369696	4715639	13155952	19596511	29426802
Fluoride	23500	65674	286398	657417	1779026	2499118	3781812
Nitrate-N	48181	214825	1039481	2217862	6037342	8874310	13128106
Nitrite-N	18910	96650	454178	956351	2533161	3930338	5244425
Phosphate-P	151693	233536	615270	1031313	2344784	3235890	4636915
Sulfate	56245	265476	1571402	3281928	8786637	12845054	19000820

Comments:

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract:
ARF No: SDG:
Initial Calibration Source: CPI
Continuing Calibration Source: o2si
Analysis Date: 01/19/15

Analyte	Calibration Verification									M
	True ICV	Found 11:31	%R(1)	True	Found	%R(1)	True	Found	%R(1)	
bromide	12.5	12.5468	100							
chloride	20	18.4912	92.5							
fluoride	2.5	2.45128	98.1							
Nitrate(NO3)-N	5	4.80404	96.1							
Nitrite(NO2)-N	3.04	2.81941	92.7							
phosphate-p	5	5.00212	100							
sulfate	20	19.5215	97.6							

(1) Control Limits: 90-110

ILM02.0

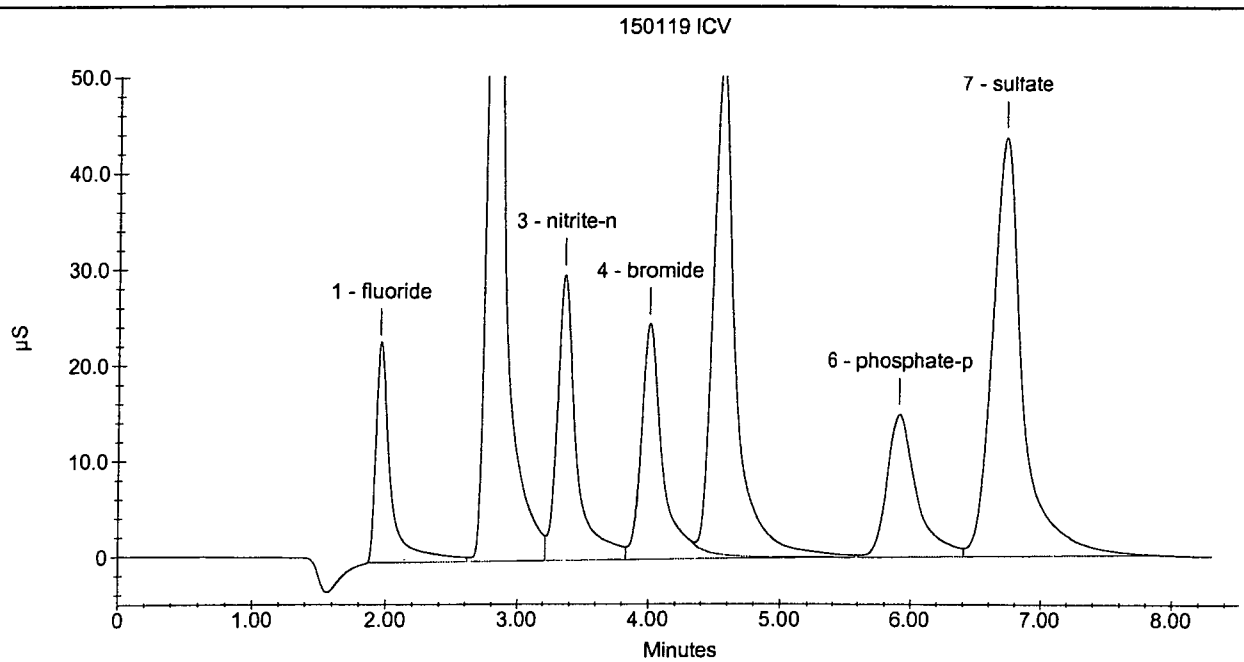
Sample Analysis Report

Sample Name : 150119 ICV
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_020.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/19/15 11:31:17
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
1	1.95	fluoride	2.4513	1785160	226289
2	2.79	chloride	18.4912	10226311	1349782
3	3.35	nitrite-n	2.8194	2984613	296891
4	3.99	bromide	12.5469	2776807	244398
5	4.52	nitrate-n	4.8040	6075909	505828
6	5.89	phosphate-p	5.0021	2372003	148657
7	6.69	sulfate	19.5216	7100789	435554



A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract:

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 01/19/15 11:42	C		C		C		C		C	
bromide	.500	U									
chloride	1.000	U									
fluoride	.100	U									
Nitrate(NO3)-N	.100	U									
Nitrite(NO2)-N	.100	U									
phosphate-p	.200	U									
sulfate	1.000	U									

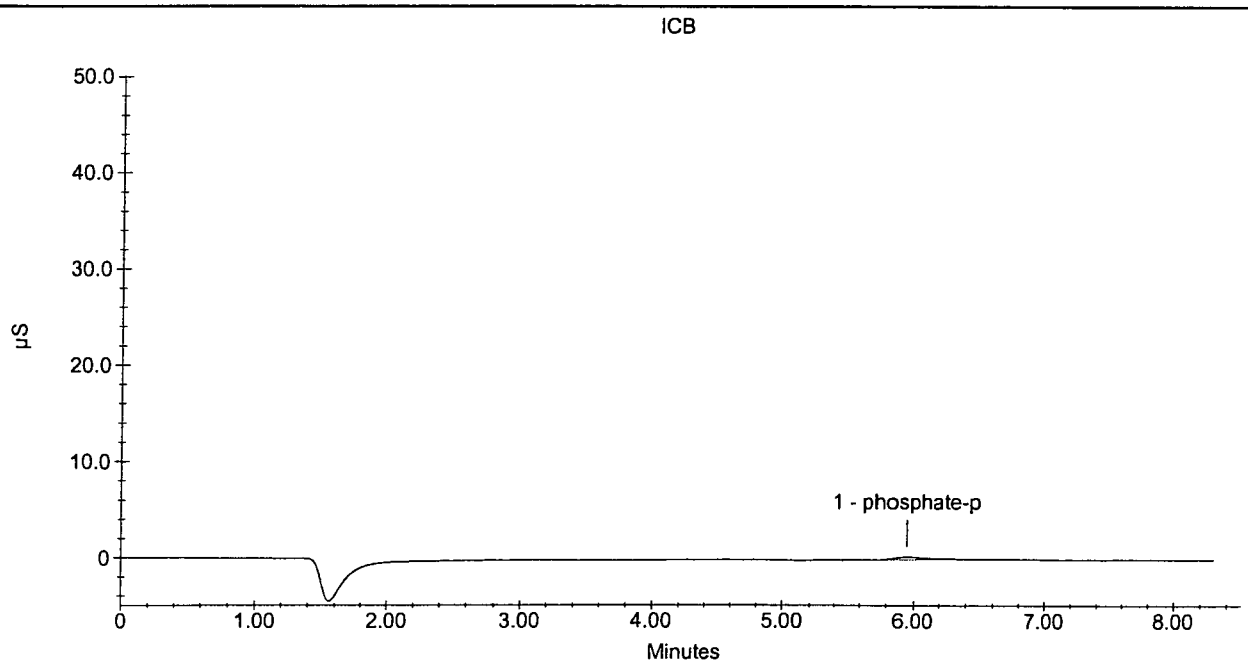
Sample Analysis Report

Sample Name : ICB
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_021.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/19/15 11:42:21
System Operator : mm
Injection Number : 21
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	-0.1846	51878	2606



A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 75450 SDG: 75450
Initial Calibration Source: o2si
Continuing Calibration Source: o2si
Analysis Date: 01/27/15

Analyte	Calibration Verification									M
	True CCV1	Found 9:44	%R(1)	True CCV1	Found 12:04	%R(1)	True CCV1	Found 13:10	%R(1)	
sulfate	25	23.5111	94.0	25	24.2175	96.9	25	24.6759	98.7	

(1) Control Limits: 90-110

ILM02.0

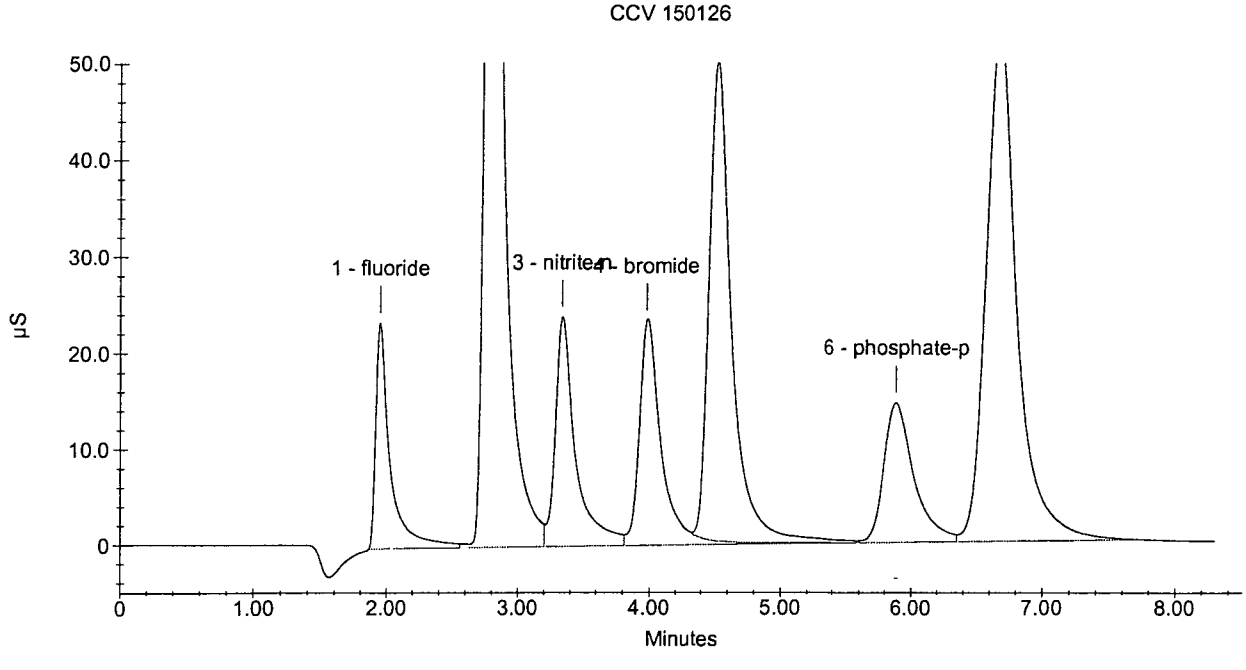
Sample Analysis Report

Sample Name : CCV 150126
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_007.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 09:44:16
System Operator : mm
Injection Number : 7
Multiplier : 1.00

Peak Information : All Peaks

Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	1.95	fluoride	2.5085	1828235	235141
2	2.77	chloride	23.2149	13001590	1670363
3	3.33	nitrite-n	2.4230	2556791	238235
4	3.97	bromide	12.2306	2705377	233615
5	4.51	nitrate-n	4.7264	5973813	494066
6	5.88	phosphate-p	4.9275	2338617	145980
7	6.65	sulfate	23.5112	8617831	531366



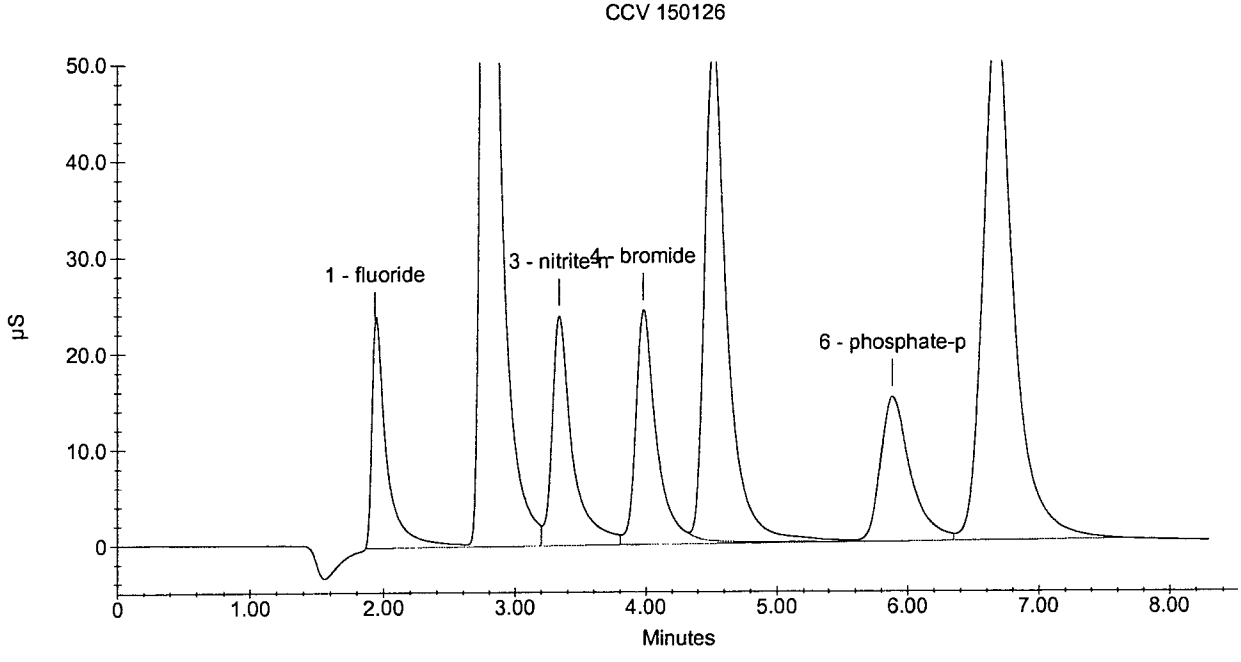
Sample Analysis Report

Sample Name : CCV 150126
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_019.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 12:04:21
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	1.93	fluoride	2.5361	1849020	227640
2	2.77	chloride	24.0705	13504255	1757369
3	3.33	nitrite-n	2.4060	2538476	239003
4	3.97	bromide	12.4705	2759549	243219
5	4.51	nitrate-n	4.8724	6165712	516302
6	5.88	phosphate-p	5.0586	2397283	150583
7	6.67	sulfate	24.2175	8886426	552671



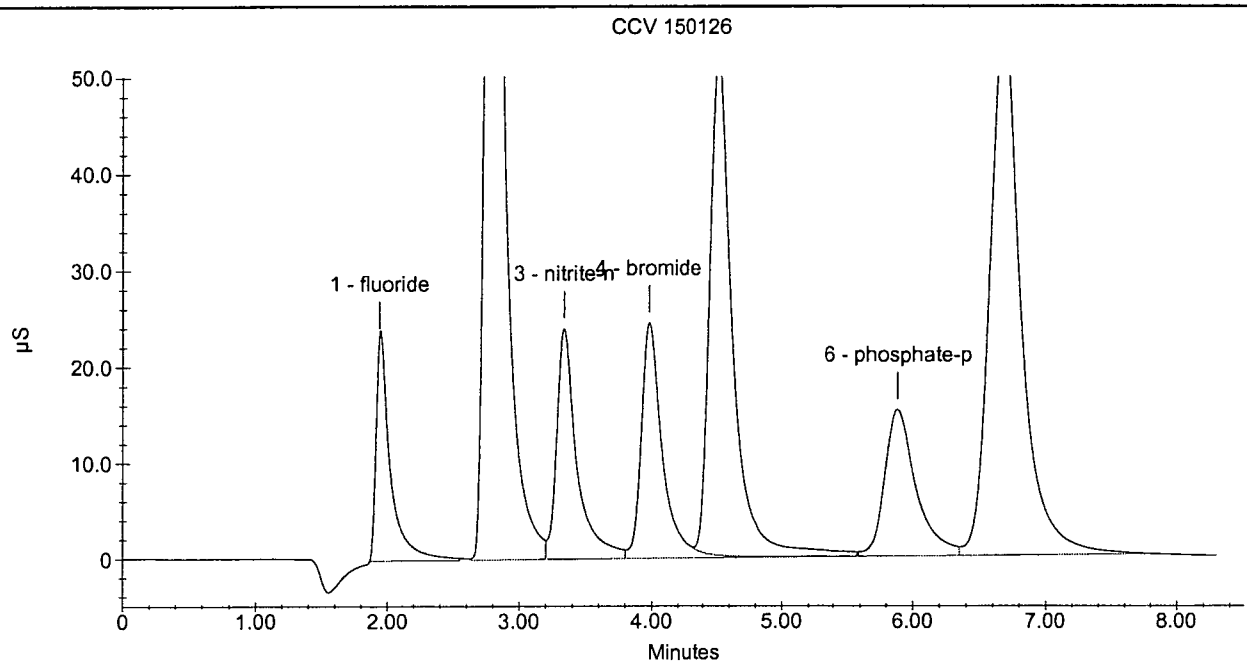
Sample Analysis Report

Sample Name : CCV 150126
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_025.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 13:10:24
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	1.93	fluoride	2.4784	1805599	231191
2	2.77	chloride	24.1589	13556217	1781058
3	3.33	nitrite-n	2.3819	2512404	239983
4	3.97	bromide	12.3428	2730722	244885
5	4.51	nitrate-n	4.9996	6332907	521752
6	5.88	phosphate-p	5.3330	2520018	152962
7	6.67	sulfate	24.6760	9060739	558950



A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 75450 SDG: 75450

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

Analyte	Calibration Blanks										M
	CCB 01/27/15 09:55	C	CCB 01/27/15 12:15	C	CCB 01/27/15 13:21	C		C		C	
sulfate	1.000	U	1.000	U	1.000	U					

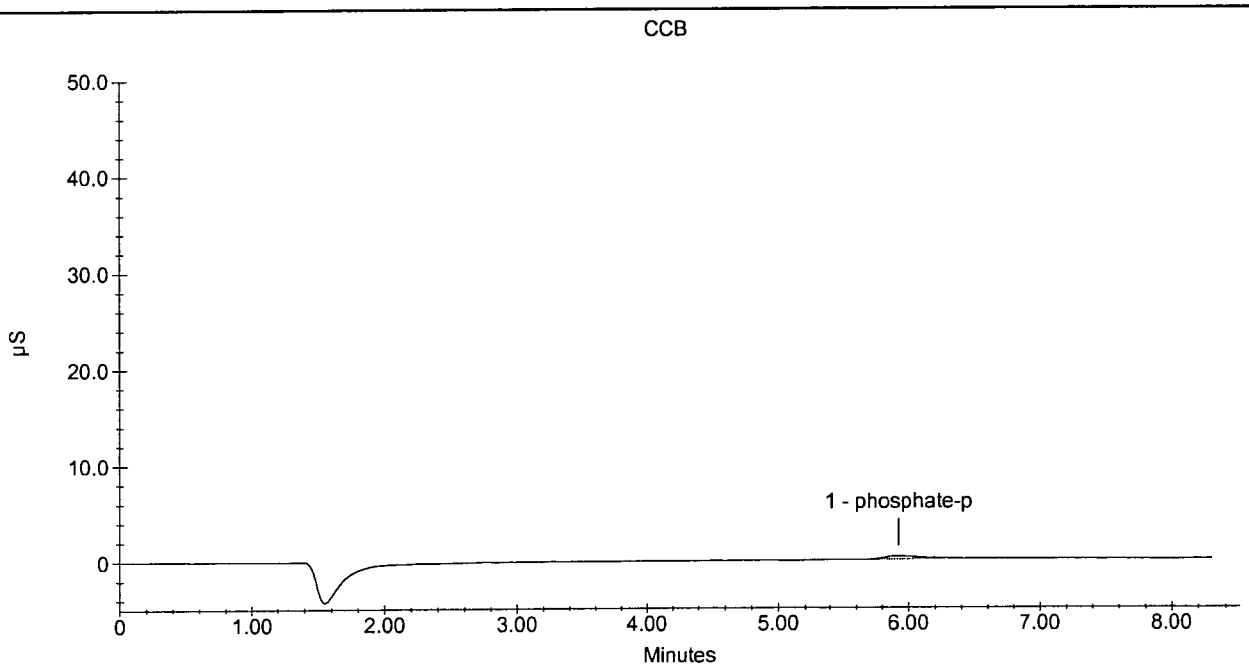
Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_008.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 09:55:22
System Operator : mm
Injection Number : 8
Multiplier : 1.00

Peak Information : All Peaks

Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	5.92	phosphate-p	-0.1764	55531	3031



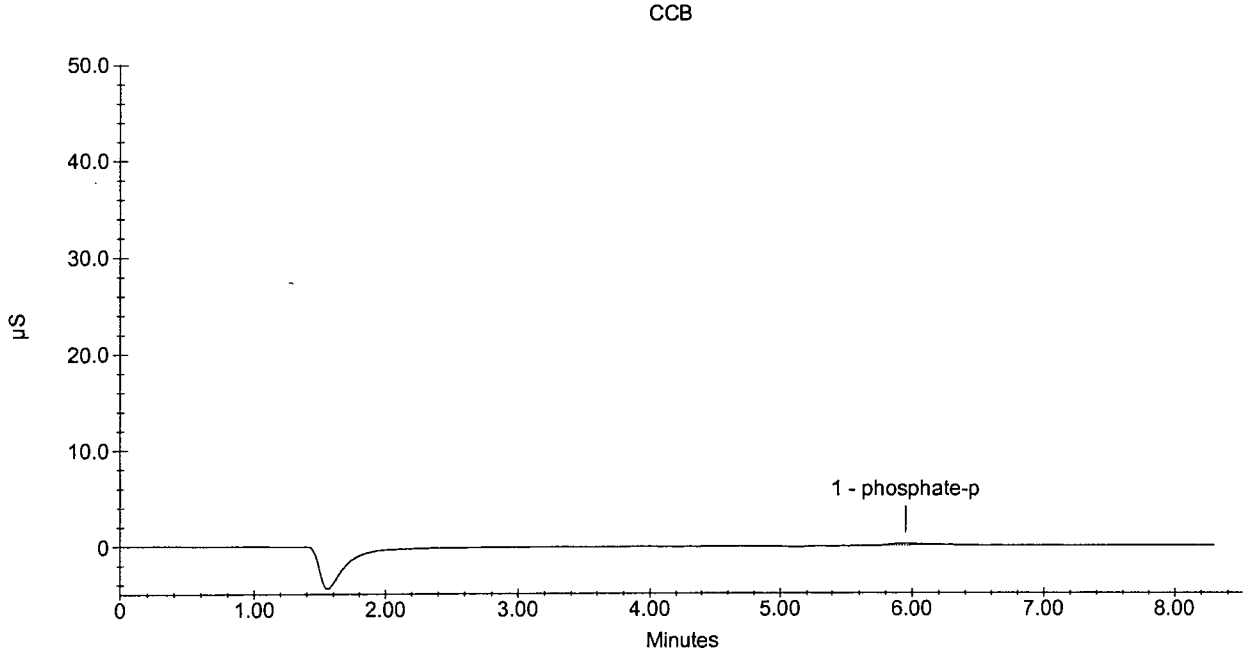
Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_020.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 12:15:25
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
1	5.95	phosphate-p	-0.2265	33130	2044



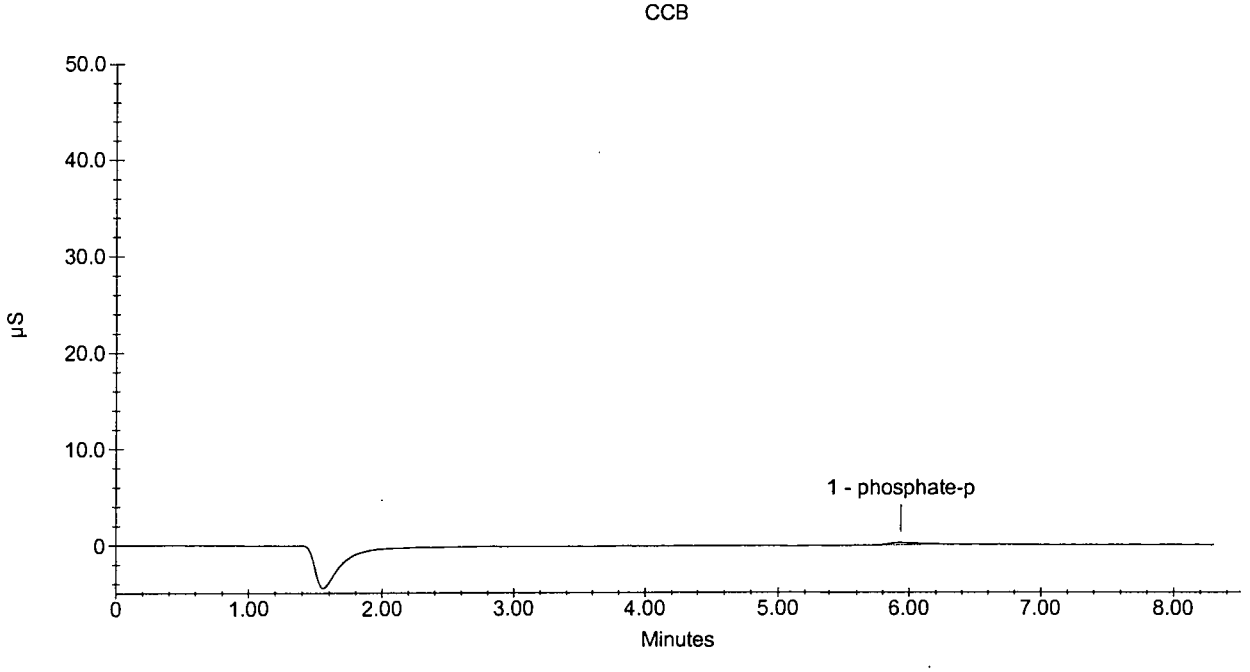
Sample Analysis Report

Sample Name : CCB
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_026.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 13:21:28
System Operator : mm
Injection Number : 26
Multiplier : 1.00

Peak Information : All Peaks

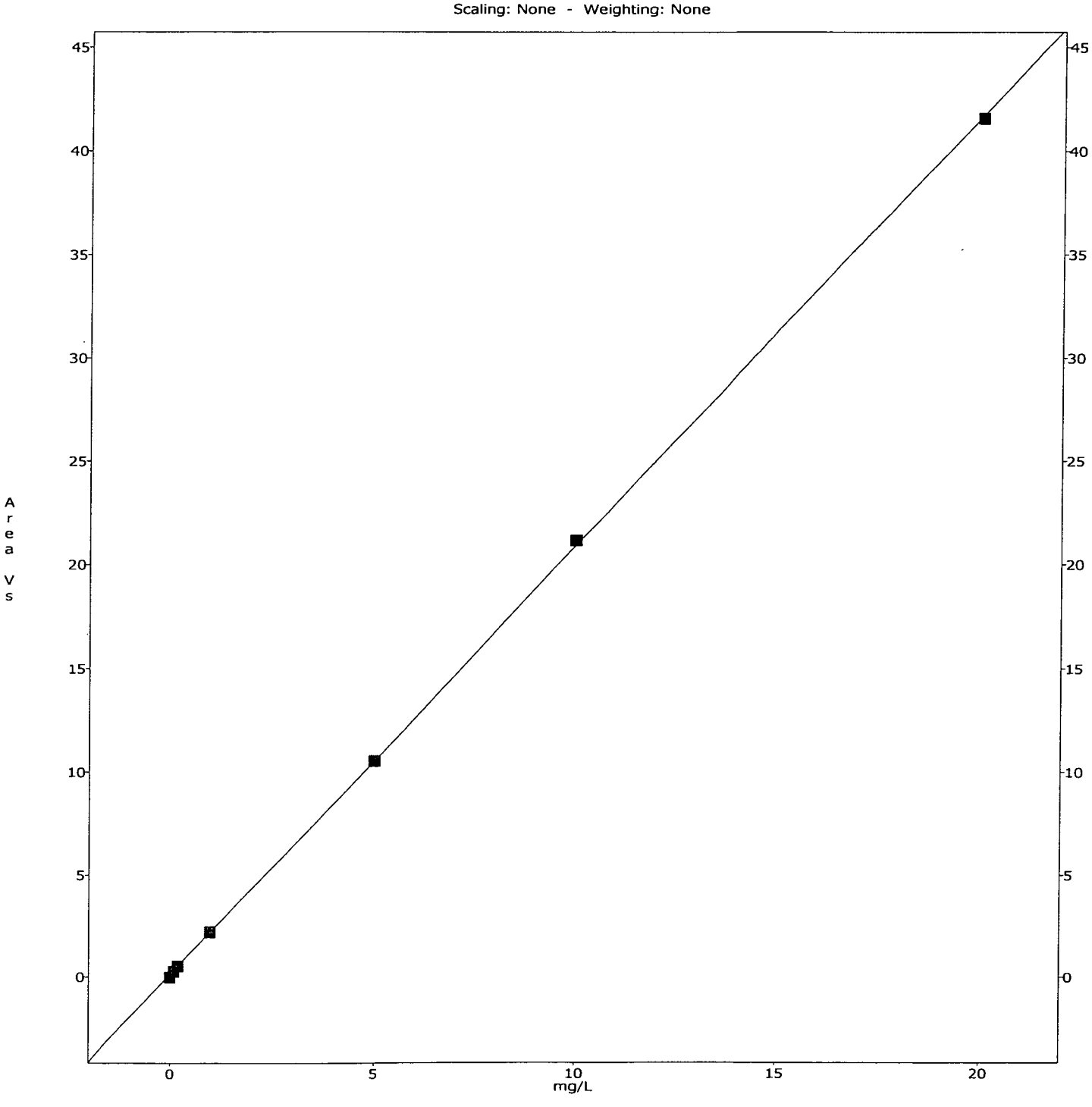
Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	5.93	phosphate-p	-0.2202	35950	2275



TOTOXN

Lvl	Area	mg/L	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Replic STD	Replic % RSD	Residual 1st Poly
1	41590708	20.0	41590708					0.0	0.0	0.3
2	21168270	10.0	21168270					0.0	0.0	-1.2
3	10542976	5.0	10542976					0.0	0.0	-0.2
4	2221069	1.0	2221069					0.0	0.0	-1.0
5	549997	0.2	549997					0.0	0.0	-3.3
6	276442	0.1	276442					0.0	0.0	24.8
7	0	0.0	0					0.0	0.0	

1st Order Poly
Conc = 4.807e-007 Area - 5.771e-002
r = 1.0000



Printed: Tuesday, February 03, 2015 - 02:22 PM

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Parsons
ARF No: 75450 SDG: 75450
Initial Calibration Source: CPI
Continuing Calibration Source: O2SI
Analysis Date: 02/03/15

Analyte	Calibration Verification									M
	True CCV1	Found 13:45	%R(1)	True ICV	Found 13:48	%R(1)	True CCV1	Found 14:06	%R(1)	
TOXN	5	4.94367	98.9	5	5.16266	103	5	5.08896	102	

(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: 75450 SDG: 75450
Initial Calibration Source: CPI
Continuing Calibration Source: O2SI
Analysis Date: 02/03/15

Analyte	Calibration Verification									M
	True CCV1	Found 14:16	%R(1)	True	Found	%R(1)	True	Found	%R(1)	
TOXN	5	5.01286	100							

(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: 75450 SDG: 75450
Initial Calibration Source: CPI
Continuing Calibration Source: O2SI
Analysis Date: 02/03/15

Analyte	Calibration Verification									M
	True CCV1	Found 14:44	%R(1)	True CCV1	Found 14:50	%R(1)	True	Found	%R(1)	
TOXN	5	5.05784	101	5	4.99835	100				

(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.: 75450 SDG: 75450

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

Analyte	Calibration Blanks										M
	ICB 02/03/15 13:50	C	CCB 02/03/15 13:51	C	CCB 02/03/15 14:07	C	CCB 02/03/15 14:18	C		C	
TOXN	.100	U	.030	J	.100	U	.100	U			

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Parsons

ARF No.: 75450 SDG: 75450

Preparation Blank Matrix (soil/water): water

Preparation Blank Concentration Units (ug/L or mg/kg): mg/L

Analyte	Calibration Blanks										M
	CCB 02/03/15 14:45	C	CCB 02/03/15 14:51	C		C		C		C	
TOXN	.100	U	.100	U							

OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 13:33:27
DATA FILENAME: I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NA.TRA

TRAY DESCRIPTION:
Created: Feb 3, 2015 9:07:32
Modified: Feb 3, 2015 14:15:30
NO3/TOTOXN 150203NA
DATA DESCRIPTION:
Created: Feb 3, 2015 13:33:27
Modified: Feb 3, 2015 13:33:27

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	13:46:59	1	0.0384
6	ICB	Blank	13:50:00	1	0.0095
6	CCB	Blank	14:07:51	1	0.0120
6	CCB	Blank	14:18:19	1	-0.0577
7	ICV	RelChkStd	13:48:30	1	5.1627
			Known Concentration:		5.0000
			% Difference:		3.2532
15	CCV	RelChkStd	13:45:30	1	4.9437
			Known Concentration:		5.0000
			% Difference:		-1.1266
15	CCV	RelChkStd	14:06:21	1	5.0890
			Known Concentration:		5.0000
			% Difference:		1.7792
15	CCV	RelChkStd	14:16:49	1	5.0129
			Known Concentration:		5.0000
			% Difference:		0.2573

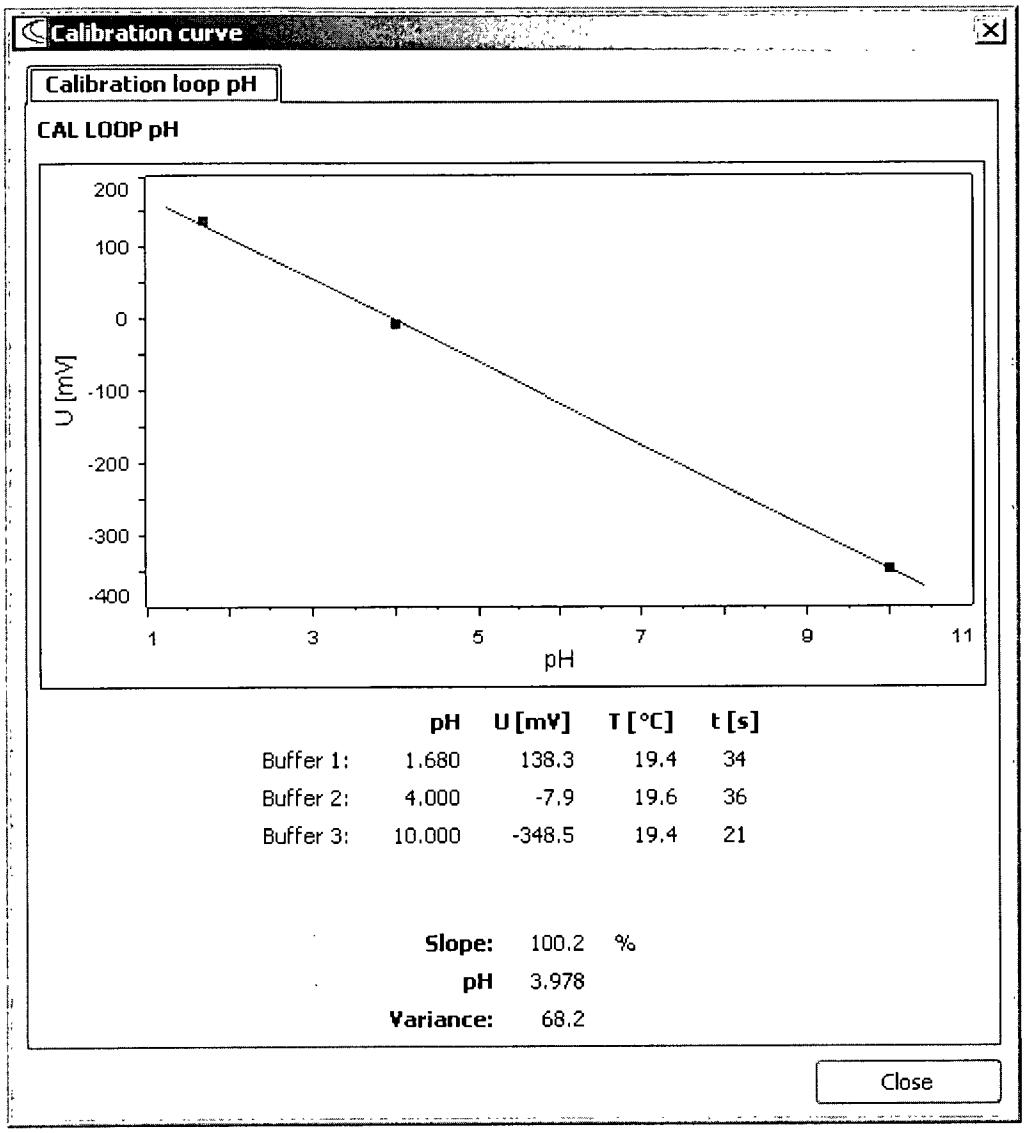
OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 14:44:15
DATA FILENAME: I:\LACHAT\OMNION\150203NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NB.TRA

TRAY DESCRIPTION:
Created: Feb 3, 2015 14:35:20
Modified: Feb 3, 2015 14:35:20
NO3/TOTOXN 150203NB
DATA DESCRIPTION:
Created: Feb 3, 2015 14:44:15
Modified: Feb 3, 2015 14:44:15

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	14:45:51	1	0.0193
6	CCB	Blank	14:51:55	1	-0.0577
15	CCV	RelChkStd	14:44:21	1	5.0578
			Known Concentration:		5.0000
			% Difference:		1.1569
15	CCV	RelChkStd	14:50:25	1	4.9984
			Known Concentration:		5.0000
			% Difference:		-0.0328

02/04/15 Tiamo Calibration Curve



	pH	U [mV]	T [°C]	t [s]
Buffer 1:	1.680	138.3	19.4	34
Buffer 2:	4.000	-7.9	19.6	36
Buffer 3:	10.000	-348.5	19.4	21

Slope:	100.2	%
pH	3.978	
Variance:	68.2	

INORGANIC ANALYSIS
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	0.91 J	2.0	1.70	0.85	mg/L	02/04/15	02/04/15	#232W-150204A-AZ10128
EPA 353.2	NITRATE-NITRITE-N	0.100 U	0.10	0.100	0.028	mg/L	02/03/15	02/03/15	#35OF-150203A-AZ10128
EPA 9056	SULFATE	0.198 U	1.00	0.198	0.090	mg/L	01/27/15	01/27/15	#9056D-150127A-AZ10128

Wetlab SC-Blank-REG MDLs
Printed: 02/09/15 10:41:06 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	SULFATE	20.0	19.7	98.5	80-120	01/27/15	01/27/15	#9056D-150127A-AZ10128

Comments: _____

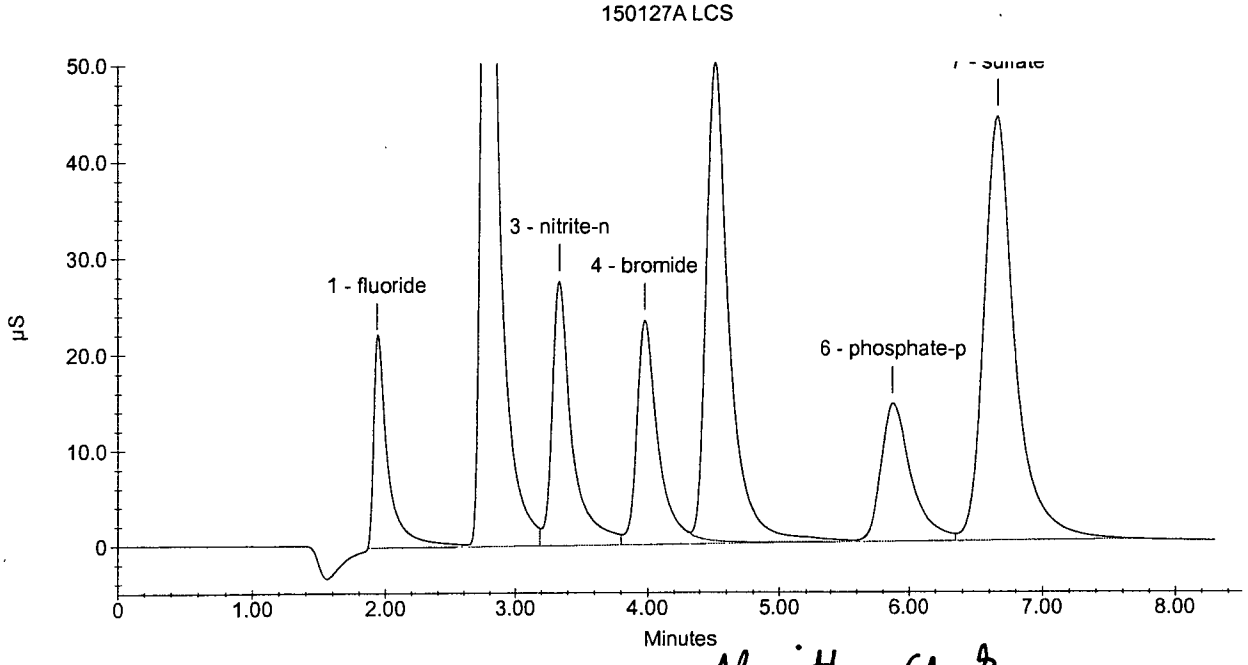
Sample Analysis Report

Sample Name : 150127A LCS
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_009.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 10:06:15
System Operator : mm
Injection Number : 9
Multiplier : 1.00

Peak Information : All Peaks

Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	1.93	fluoride	2.3259	1690706	216458
2	2.77	chloride	18.3192	10125229	1323225
3	3.33	nitrite-n	2.7013	2857171	274917
4	3.97	bromide	12.0275	2659478	233662
5	4.51	nitrate-n	4.6984	5937072	496332
6	5.87	phosphate-p	4.8596	2308254	144046
7	6.65	sulfate	19.7192	7175918	440010



Algorithm Check

$2.63 \times 10^{-6}(7175918) + 0.8476 = 19.72$ ✓

MM 1/28/15

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	5.16	5.20	103	104	0.77	20	90-110	02/03/15	02/03/15	02/03/15	02/03/15	#35OF-150203A-AZ10128
SM 2320B	TOTAL ALKALINITY AS CA	250	247	245	98.8	98.0	0.81	20	90-110	02/04/15	02/04/15	02/04/15	02/04/15	#232W-150204A-AZ10128

Comments:

Matrix Spike Recoveries

WETLAB

APPL ID: **150203W-10128 MS - 194032**

Sample ID: AZ10128

Client ID: RHMW06-GW-02

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	0.63	5.68	5.72	101	102	0.70	20	90-110	02/03/15	02/03/15	02/03/15	02/03/15	194032	AZ10128
EPA 9056	SULFATE	100	87.8	190	189	102	101	0.53	10	80-120	01/27/15	01/27/15	01/27/15	01/27/15	193861	AZ10128
SM 2320B	TOTAL ALKALINITY AS	250	139	381	381	96.8	96.8	0.0	20	90-110	02/04/15	02/04/15	02/04/15	02/04/15	194104	AZ10128

Comments: _____

Sample Analysis Report

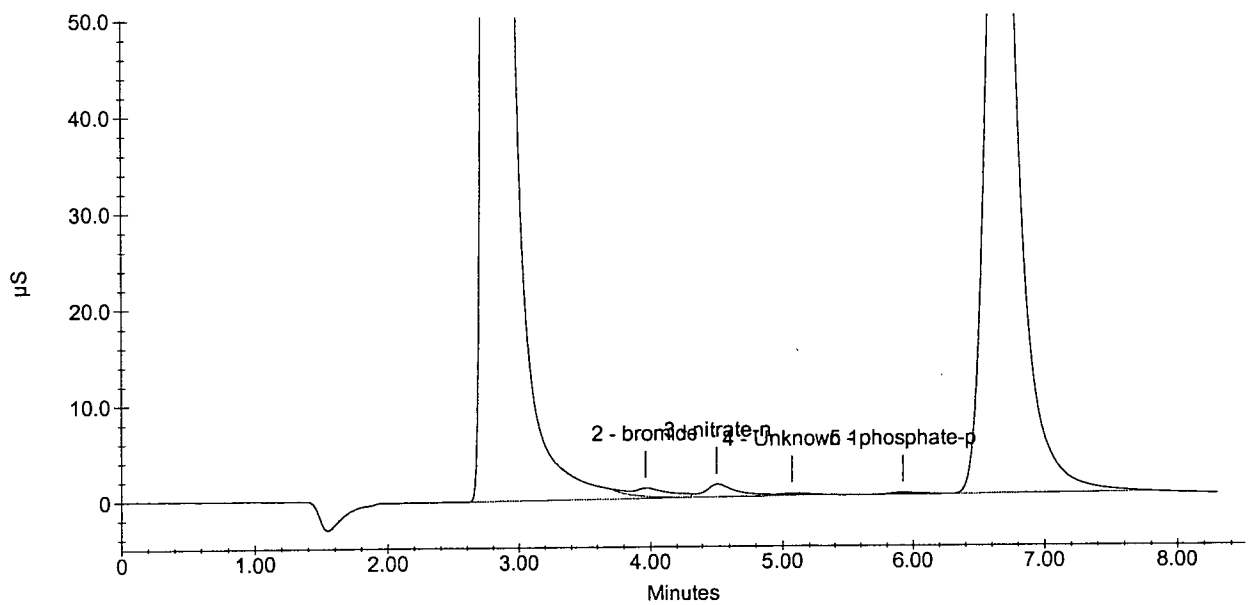
Sample Name : AZ10128W31 DF5 MS
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_023.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 12:48:20
System Operator : mm
Injection Number : 23
Multiplier : 5.00

Peak Information : All Peaks

Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	2.79	chloride	447.1095	51900013	6612675
2	3.96	bromide	4.7802	158518	8843
3	4.51	nitrate-n	1.7443	220954	13156
4	5.07	Unknown 1	0.0000	22919	1536
5	5.92	phosphate-p	-1.1490	31654	1931
6	6.65	sulfate	190.1742	14140449	904797

AZ10128W31 DF5 MS



Sample Analysis Report

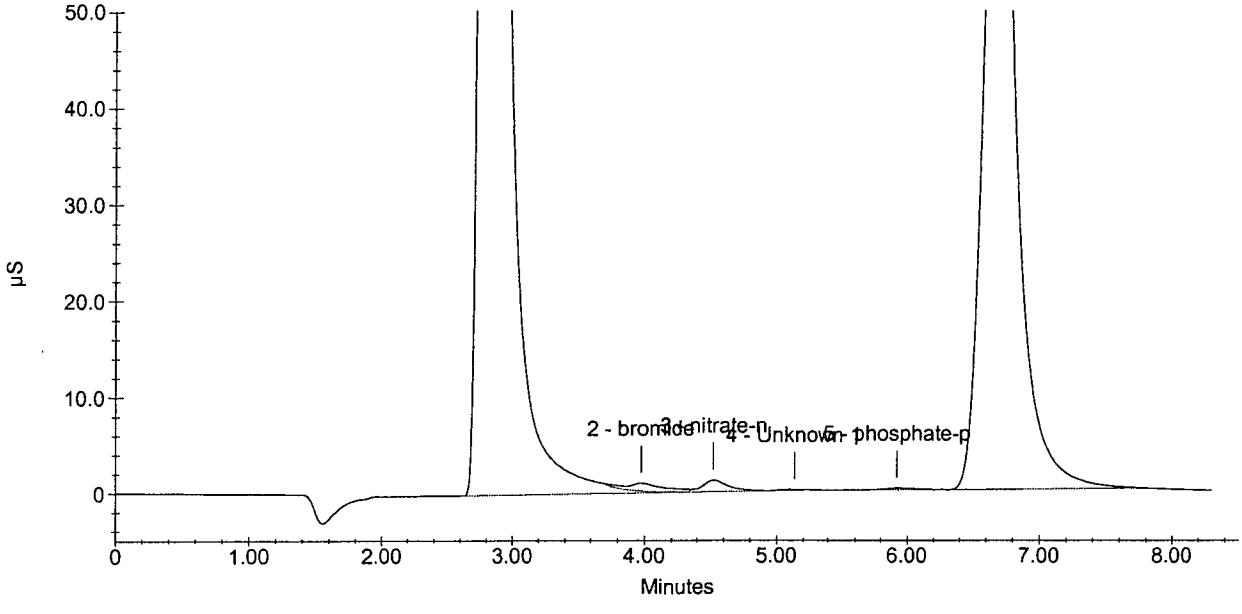
Sample Name : AZ10128W31 DF5 MSD
Data File Name : I:\DIONEX\D1ANIONS\DATA\150127A\150127a_024.DXD

Method File Name : i:\dionex\d1anions\methods\anions 150119a.met
Date Time Collected : 1/27/15 12:59:24
System Operator : mm
Injection Number : 24
Multiplier : 5.00

Peak Information : All Peaks

Peak Number	Peak Retention Time	Component Name	Component Amount (mg/L)	Peak Area	Peak Height
1	2.80	chloride	446.7557	51858433	6846987
2	3.97	bromide	4.5413	147724	8336
3	4.52	nitrate-n	1.5155	160819	12040
4	5.13	Unknown 1	0.0000	11854	950
5	5.92	phosphate-p	-1.1383	32610	1929
6	6.67	sulfate	189.3927	14081013	904160

AZ10128W31 DF5 MSD



Calibration Update Report

Sample Name : CAL STD #1 01/19/15
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_013.DXD

Method File Name : ...\anions 150119a.met
Schedule File Name : ...\150119a.sch
Date Time Collected : 1/19/15 10:13:34

Calibration Date : 1/19/15 10:24:20
System Operator : mm
Injection Number : 13

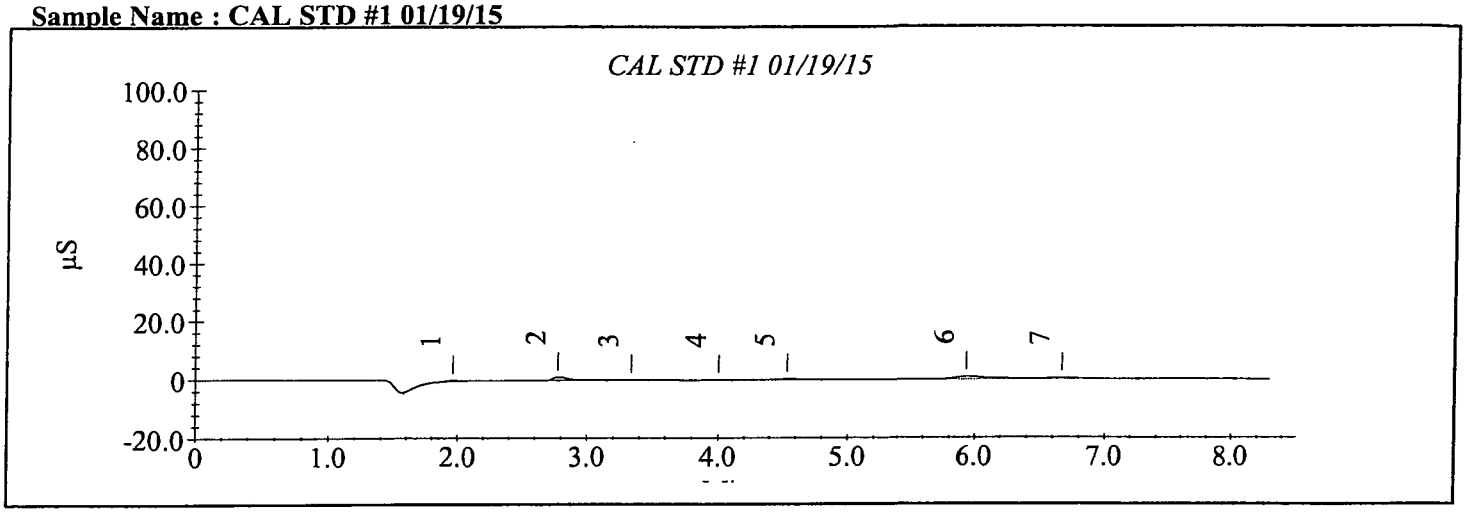
Peak Information : All Components

Peak #	Retention Time	Component Name	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
1	1.96	fluoride	28886	23500	23500
2	2.77	chloride	82777	101578	101578
3	3.33	nitrite-n	14460	18910	18910
4	4.00	bromide	19241	16558	16558
5	4.53	nitrate-n	32020	48181	48181
6	5.93	phosphate-p	131005	151694	151694
7	6.67	sulfate	75032	56246	56246

Peak Information : All Components

Peak #	Retention Time	Component Name	Amount (mg/L)	Peak Area	Peak Height	Limit Exceeded
1	1.96	fluoride	0.04	23500	3254	-
2	2.77	chloride	0.40	101578	11354	-
3	3.33	nitrite-n	0.04	18910	2026	-
4	4.00	bromide	0.20	16558	1868	-
5	4.53	nitrate-n	0.08	48181	3661	-
6	5.93	phosphate-p	0.08	151694	7834	-
7	6.67	sulfate	0.40	56246	4023	-

Sample Name : CAL STD #1 01/19/15



Calibration Update Report

Sample Name : CAL STD #2
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_014.DXD

Method File Name : ...\anions 150119a.met
Schedule File Name : ...\150119a.sch
Date Time Collected : 1/19/15 10:24:43

Calibration Date : 1/19/15 10:35:25
System Operator : mm
Injection Number : 14

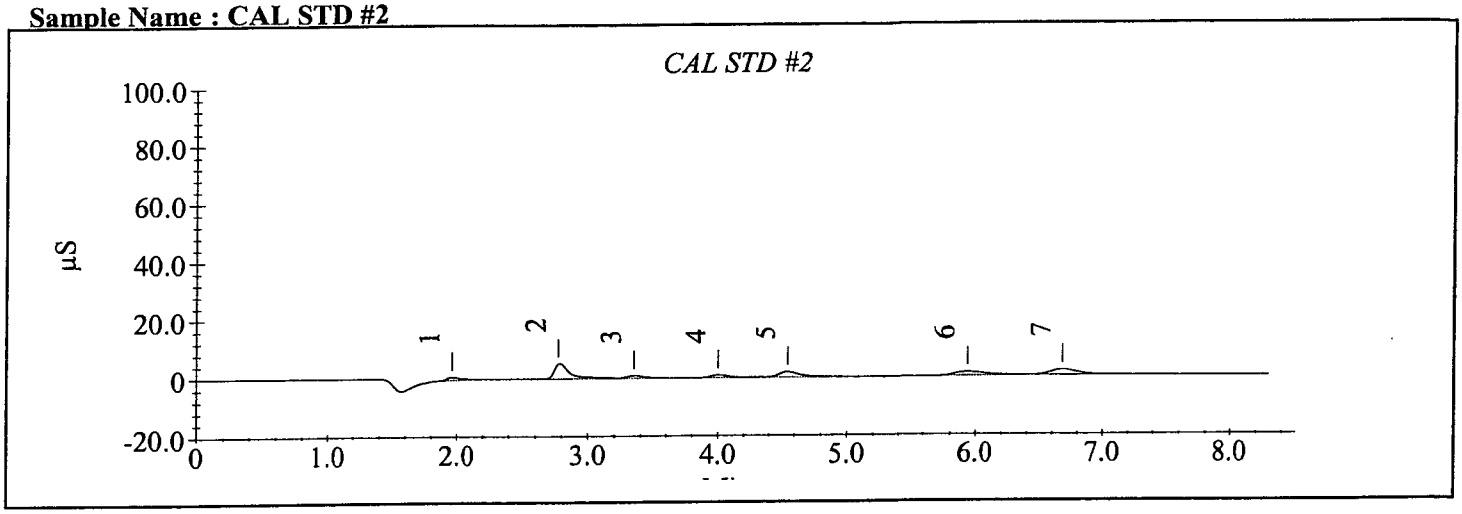
Peak Information : All Components

Peak #	Retention Time	Component Name	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
1	1.96	fluoride	66171	65674	65674
2	2.77	chloride	441311	432727	432727
3	3.35	nitrite-n	92943	96650	96650
4	4.00	bromide	98159	104554	104554
5	4.55	nitrate-n	214755	214826	214826
6	5.93	phosphate-p	279951	233537	233537
7	6.68	sulfate	340079	265477	265477

Peak Information : All Components

Peak #	Retention Time	Component Name	Amount (mg/L)	Peak Area	Peak Height	Limit Exceeded
1	1.96	fluoride	0.10	65674	9991	
2	2.77	chloride	1.00	432727	50045	
3	3.35	nitrite-n	0.10	96650	9222	
4	4.00	bromide	0.50	104554	8844	
5	4.55	nitrate-n	0.20	214826	17879	
6	5.93	phosphate-p	0.20	233537	13032	
7	6.68	sulfate	1.00	265477	18559	

Sample Name : CAL STD #2



Calibration Update Report

Sample Name : CAL STD #3
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_015.DXD

Method File Name : ...\anions 150119a.met
Schedule File Name : ...\150119a.sch
Date Time Collected : 1/19/15 10:35:47

Calibration Date : 1/19/15 10:46:29
System Operator : mm
Injection Number : 15

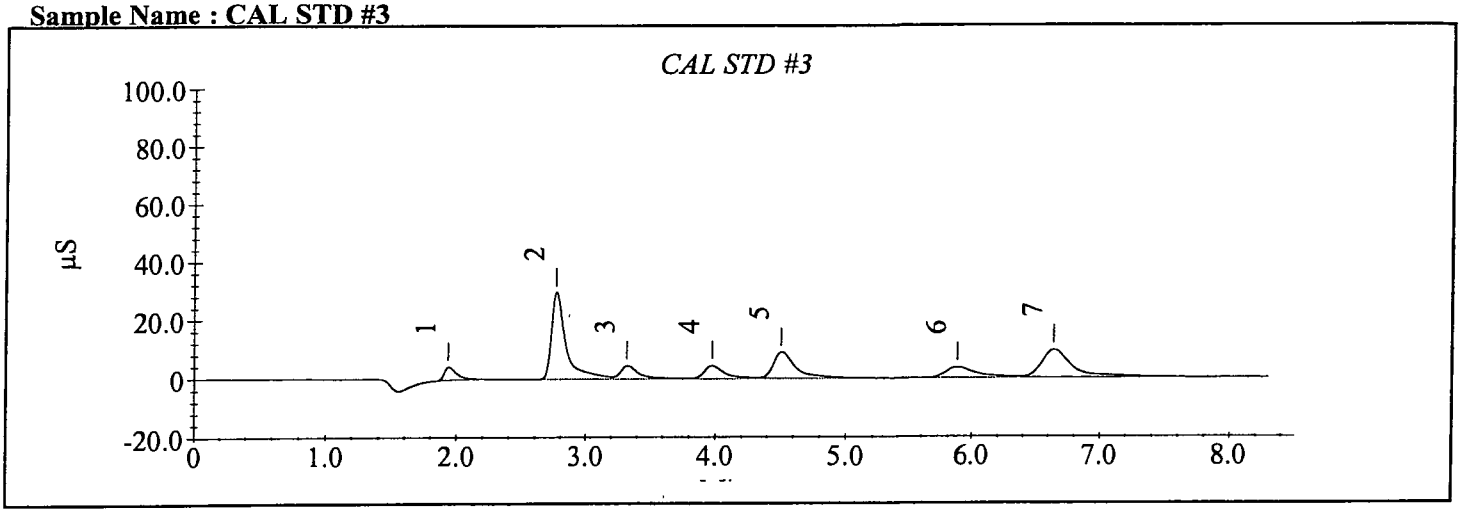
Peak Information : All Components

Peak #	Retention Time	Component Name	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
1	1.93	fluoride	330090	286399	286399
2	2.76	chloride	2287227	2369696	2369696
3	3.32	nitrite-n	478276	454178	454178
4	3.97	bromide	517347	495235	495235
5	4.51	nitrate-n	1093205	1039481	1039481
6	5.88	phosphate-p	662802	615270	615270
7	6.64	sulfate	1626641	1571403	1571403

Peak Information : All Components

Peak #	Retention Time	Component Name	Amount (mg/L)	Peak Area	Peak Height	Limit Exceeded
1	1.93	fluoride	0.50	286399	43328	
2	2.76	chloride	5.00	2369696	295410	
3	3.32	nitrite-n	0.50	454178	44728	
4	3.97	bromide	2.50	495235	44057	
5	4.51	nitrate-n	1.00	1039481	87796	
6	5.88	phosphate-p	1.00	615270	35891	
7	6.64	sulfate	5.00	1571403	94060	

Sample Name : CAL STD #3



Calibration Update Report

Sample Name : CAL STD #4
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_016.DXD

Method File Name : ...\anions 150119a.met
Schedule File Name : ...\150119a.sch
Date Time Collected : 1/19/15 10:46:53

Calibration Date : 1/19/15 10:57:36
System Operator : mm
Injection Number : 16

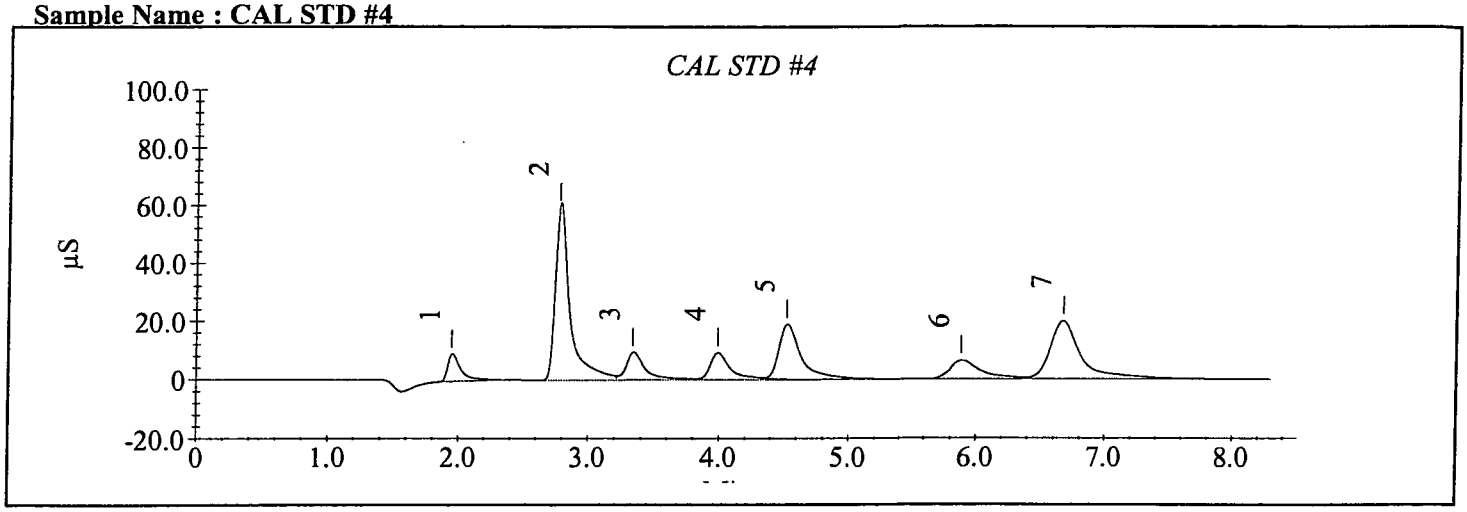
Peak Information : All Components

Peak #	Retention Time	Component Name	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
1	1.95	fluoride	630164	657417	657417
2	2.77	chloride	4841466	4715639	4715639
3	3.33	nitrite-n	994868	956351	956351
4	3.99	bromide	1071364	1035484	1035484
5	4.52	nitrate-n	2292593	2217863	2217863
6	5.88	phosphate-p	1103606	1031313	1031313
7	6.67	sulfate	3408605	3281928	3281928

Peak Information : All Components

Peak #	Retention Time	Component Name	Amount (mg/L)	Peak Area	Peak Height	Limit Exceeded
1	1.95	fluoride	1.00	657417	91873	
2	2.77	chloride	10.00	4715639	594351	
3	3.33	nitrite-n	1.00	956351	93041	
4	3.99	bromide	5.00	1035484	92215	
5	4.52	nitrate-n	2.00	2217863	186335	
6	5.88	phosphate-p	2.00	1031313	62733	
7	6.67	sulfate	10.00	3281928	197781	

Sample Name : CAL STD #4



Calibration Update Report

Sample Name : CAL STD #5
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_017.DXD

Method File Name : ...\anions 150119a.met
Schedule File Name : ...\150119a.sch
Date Time Collected : 1/19/15 10:57:59

Calibration Date : 1/19/15 11:08:40
System Operator : mm
Injection Number : 17

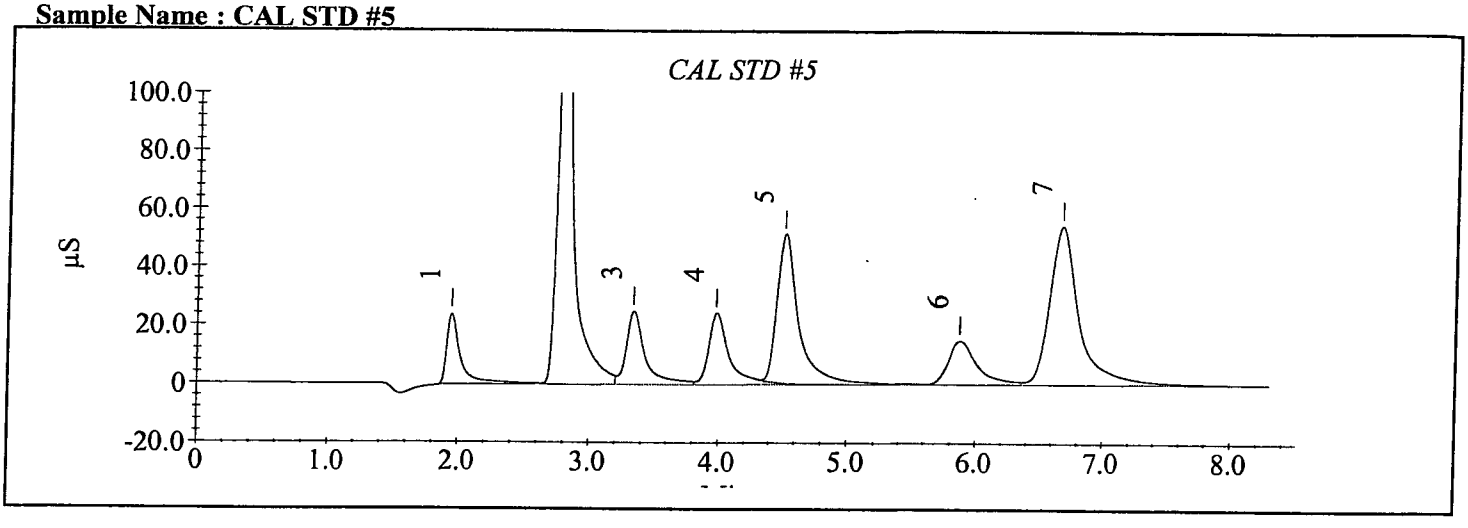
Peak Information : All Components

Peak #	Retention Time	Component Name	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
1	1.95	fluoride	1970215	1779027	1779027
2	2.77	chloride	13664864	13155952	13155952
3	3.33	nitrite-n	2649330	2533162	2533162
4	3.97	bromide	2865547	2706544	2706544
5	4.51	nitrate-n	6291153	6037343	6037343
6	5.87	phosphate-p	2502755	2344784	2344784
7	6.67	sulfate	9084729	8786638	8786638

Peak Information : All Components

Peak #	Retention Time	Component Name	Amount (mg/L)	Peak Area	Peak Height	Limit Exceeded
1	1.95	fluoride	2.50	1779027	239464	
2	2.77	chloride	25.00	13155952	1732463	
3	3.33	nitrite-n	2.50	2533162	249016	
4	3.97	bromide	12.50	2706544	242516	
5	4.51	nitrate-n	5.00	6037343	508061	
6	5.87	phosphate-p	5.00	2344784	148489	
7	6.67	sulfate	25.00	8786638	542777	

Sample Name : CAL STD #5



Calibration Update Report

Sample Name : CAL STD #6
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_018.DXD

Method File Name : ...\anions 150119a.met
Schedule File Name : ...\150119a.sch
Date Time Collected : 1/19/15 11:09:02

Calibration Date : 1/19/15 11:19:48
System Operator : mm
Injection Number : 18

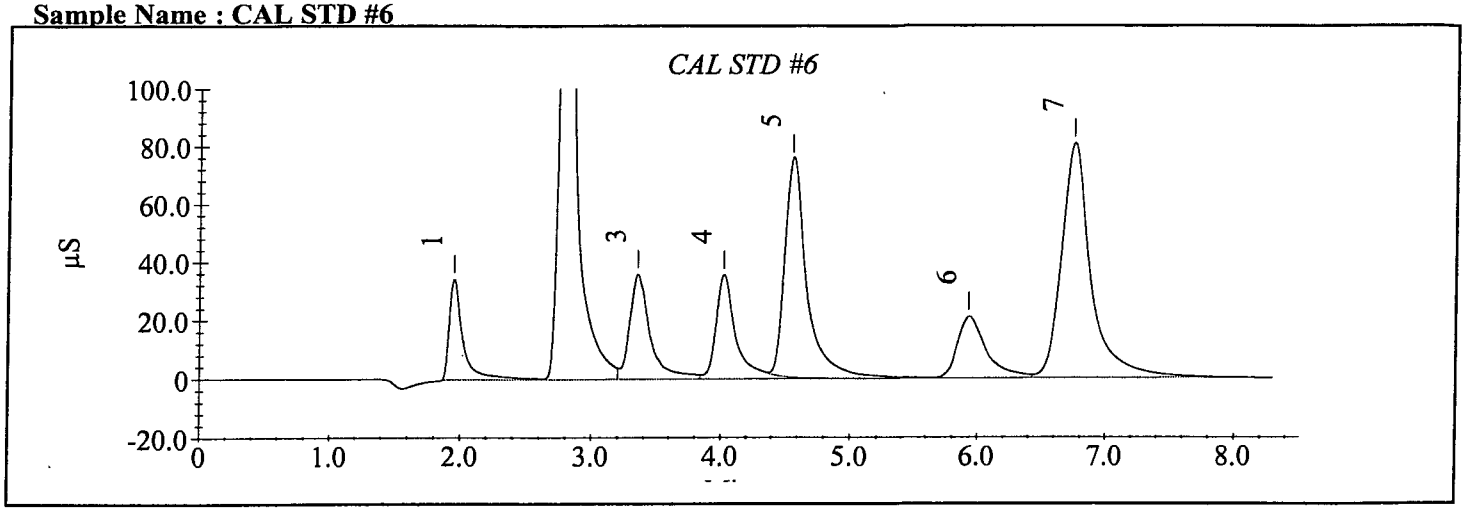
Peak Information : All Components

Peak #	Retention Time	Component Name	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
1	1.95	fluoride	2738494	2499119	2499119
2	2.79	chloride	20167261	19596511	19596511
3	3.35	nitrite-n	3756601	3930339	3930339
4	4.01	bromide	4025402	3879516	3879516
5	4.55	nitrate-n	9172087	8874311	8874311
6	5.92	phosphate-p	3467091	3235891	3235891
7	6.73	sulfate	13318371	12845055	12845055

Peak Information : All Components

Peak #	Retention Time	Component Name	Amount (mg/L)	Peak Area	Peak Height	Limit Exceeded
1	1.95	fluoride	3.50	2499119	342333	
2	2.79	chloride	35.00	19596511	2690714	
3	3.35	nitrite-n	3.50	3930339	358124	
4	4.01	bromide	17.50	3879516	354225	
5	4.55	nitrate-n	7.00	8874311	749621	
6	5.92	phosphate-p	7.00	3235891	208626	
7	6.73	sulfate	35.00	12845055	806151	

Sample Name : CAL STD #6



Calibration Update Report

Sample Name : CAL STD #7
Data File Name : I:\DIONEX\D1ANIONS\DATA\150119A\150119a_019.DXD

Method File Name : ...\anions 150119a.met
Schedule File Name : ...\150119a.sch
Date Time Collected : 1/19/15 11:20:10

Calibration Date : 1/19/15 11:30:54
System Operator : mm
Injection Number : 19

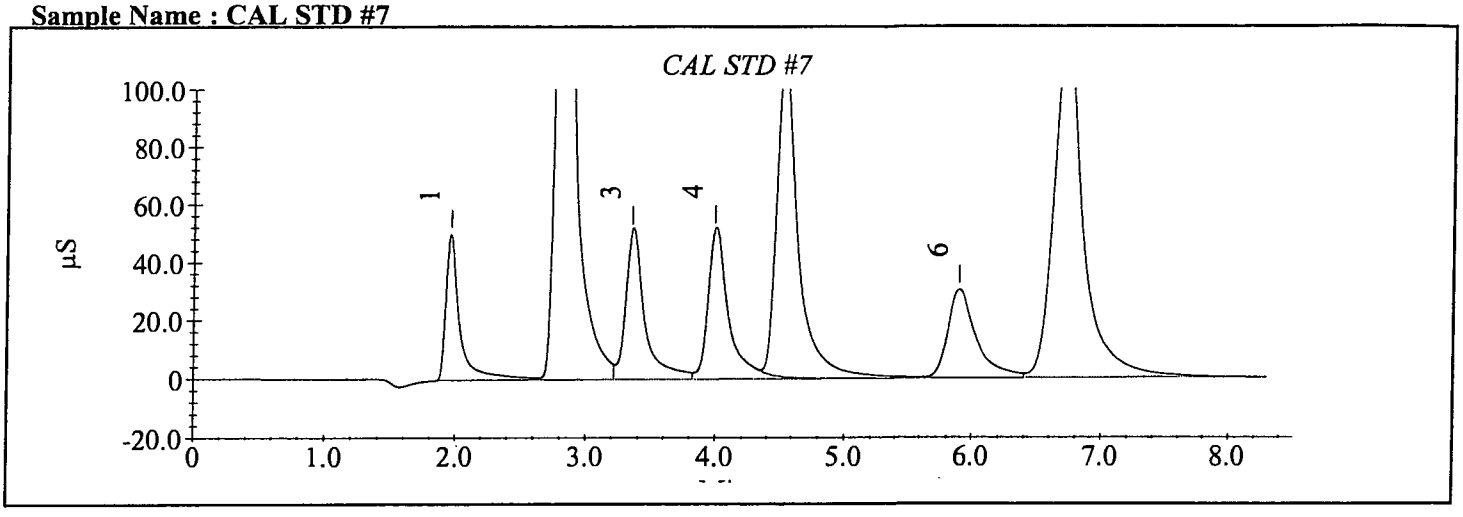
Peak Information : All Components

Peak #	Retention Time	Component Name	Cal Response (Previous)	Cal Response (Measured)	Cal Response (New)
1	1.96	fluoride	3938517	3781812	3781812
2	2.80	chloride	29978179	29426803	29426803
3	3.35	nitrite-n	5440897	5244426	5244426
4	3.99	bromide	5824375	5636460	5636460
5	4.52	nitrate-n	13556734	13128107	13128107
6	5.89	phosphate-p	4881749	4636915	4636915
7	6.71	sulfate	19625735	19000820	19000820

Peak Information : All Components

Peak #	Retention Time	Component Name	Amount (mg/L)	Peak Area	Peak Height	Limit Exceeded
1	1.96	fluoride	5.00	3781812	500871	
2	2.80	chloride	50.00	29426803	3957707	
3	3.35	nitrite-n	5.00	5244426	511323	
4	3.99	bromide	25.00	5636460	512246	
5	4.52	nitrate-n	10.00	13128107	1113779	
6	5.89	phosphate-p	10.00	4636915	302759	
7	6.71	sulfate	50.00	19000820	1208994	

Sample Name : CAL STD #7



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
AZ10128W31 dup	2015-02-04 16:14:08 UTC-8	Alkalinity	0.000	3.386	0.00	0.00	140.18	140.18	mg/L	25 mL	0.0207	150204a	bb
AZ10128W31 msd	2015-02-04 10:44:40 UTC-8	Alkalinity	0.000	9.200	0.00	0.00	380.88	380.88	mg/L	25 mL	0.0207	150204a	bb
AZ10128W31 ms	2015-02-04 10:29:05 UTC-8	Alkalinity	0.000	9.204	0.00	0.00	381.05	381.05	mg/L	25 mL	0.0207	150204a	bb
AZ10128W31	2015-02-04 10:21:46 UTC-8	Alkalinity	0.000	3.348	0.00	0.00	138.61	138.61	mg/L	25 mL	0.0207	150204a	bb
AZ10127W11	2015-02-04 10:14:49 UTC-8	Alkalinity	0.000	3.038	0.00	0.00	125.77	125.77	mg/L	25 mL	0.0207	150204a	bb
AZ10126W11	2015-02-04 10:07:02 UTC-8	Alkalinity	0.000	3.178	0.00	0.00	131.57	131.57	mg/L	25 mL	0.0207	150204a	bb
150204a lcsd	2015-02-04 09:20:46 UTC-8	Alkalinity	0.000	5.908	0.00	0.00	244.59	244.59	mg/L	25 mL	0.0207	150204a	bb
150204a lcs	2015-02-04 09:09:24 UTC-8	Alkalinity	0.000	5.964	0.00	0.00	246.91	246.91	mg/L	25 mL	0.0207	150204a	bb
150204a blk	2015-02-04 09:01:05 UTC-8	Alkalinity	0.000	0.022	0.00	0.00	0.91	0.91	mg/L	25 mL	0.0207	150204a	bb

INSTRUMENT: Flow Injection Analysis
TRAY: 150203NA.TRA METHOD: TOTOXN1.MET DATAFILE: 150203NA.FDT
DATE/TIME: Tue Feb 03 13:33:27 2015 OPERATOR: Aileen

*** Begin Calibration ***
Cup# 1 Sample: NO3 CALSTD (20.0) Type: CalStd Level: 1 Rep# 1/1
Ch 1: TOTOXN Peak Area = 41590708.0 µv-s
Cup# 2 Sample: NO3 CALSTD (10.0) Type: CalStd Level: 2 Rep# 1/1
Ch 1: TOTOXN Peak Area = 21168270.0 µv-s
Cup# 15 Sample: NO3 CALSTD (5.0) Type: CalStd Level: 3 Rep# 1/1
Ch 1: TOTOXN Peak Area = 10542976.0 µv-s
Cup# 3 Sample: NO3 CALSTD (1.0) Type: CalStd Level: 4 Rep# 1/1
Ch 1: TOTOXN Peak Area = 2221069.0 µv-s
Cup# 4 Sample: NO3 CALSTD (0.20) Type: CalStd Level: 5 Rep# 1/1
Ch 1: TOTOXN Peak Area = 549997.0 µv-s
Cup# 5 Sample: NO3 CALSTD (0.10) Type: CalStd Level: 6 Rep# 1/1
Ch 1: TOTOXN Peak Area = 276442.0 µv-s
Cup# 6 Sample: NO3 CALSTD (0.00) Type: CalStd Level: 7 Rep# 1/1
Ch 1: TOTOXN Peak Area = 0.0 µv-s
*** Updated Calibration ***
Ch 1: TOTOXN
** 1st Order Poly Calibration **
C[0] = 4.80736e-007
C[1] = -0.0577051
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 = 4.9437 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.9437 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -1.1266%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1
Ch 1: TOTOXN = 0.0384 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = 0.0384 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 = 5.1627 mg/L
DQM Sample Results: ICV
Ch 1: TOTOXN = 5.1627 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = 3.2532%
Test 1: Passed
Cup# 6 Sample: ICB Type: Blank Rep# 1/1
Ch 1: TOTOXN = 0.0095 mg/L
DQM Sample Results: ICB
Ch 1: TOTOXN
Determined Conc = 0.0095 mg/L
Test 1: Passed
*** End of DQM Set INITIAL - Set Passed ***
Cup# 1 Sample: CCB Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0302 mg/L
Cup# 3 ~~Sample: 150203A BLK Type~~: Unknown Rep# 1/1 (4) AP 2/3/15
Ch 1: TOTOXN = ~~0.0505 mg/L~~
Cup# 4 Sample: 150203A LCS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.1598 mg/L
Cup# 5 ~~Sample: 150203A LCSD Type~~: Unknown Rep# 1/1 (4) AP 2/3/15 Insuff. sample in tube - aspirated air. Temporarily closed the column.
Ch 1: TOTOXN = 0.8622 mg/L
Cup# 6 Sample: AZ10126W10 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = ~~0.3047 mg/L~~
Cup# 7 ~~Sample: AZ10127W10 Type: Unknown~~ Rep# 1/1 (4) AP missed peak detection
Ch 1: TOTOXN = ~~0.8416 mg/L~~

AP 2/3/15
Algorithm check on ICV ✓
$(4.80736)(10859111)(10^{-7}) - 0.0577051 = 5.1627$

Cup# 8 Sample: AZ10128W28 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.6277 mg/L
Cup# 9 Sample: AZ10128W28MS Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.6809 mg/L
Cup# 10 Sample: AZ10128W28MSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.7167 mg/L
Cup# 11 Sample: 150203A BLK Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.0118 mg/L
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = 5.0890 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 5.0890 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = 1.7792%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = 0.0120 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = 0.0120 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
Cup# 12 Sample: 150203A LCSD Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 5.1977 mg/L
Cup# 13 Sample: AZ10126W10 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.2910 mg/L
Cup# 3~~0 Sample: Type: Unknown Rep# 1~~/1 (4) AP 2/3/15 No samples - aspirated air. Temporarily closed the column.
Ch 1: TOTOXN = -0.0144 mg/L
Cup# 45 Sample: Type: Unknown Rep# 1/1
Ch 1: TOTOXN = ~~0.9778 mg/L~~
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1 Repeat# 2
Ch 1: TOTOXN = 5.0129 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 5.0129 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = 0.2573%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1 Repeat# 2
Ch 1: TOTOXN = -0.0577 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0577 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
******* Tray Run Complete *******

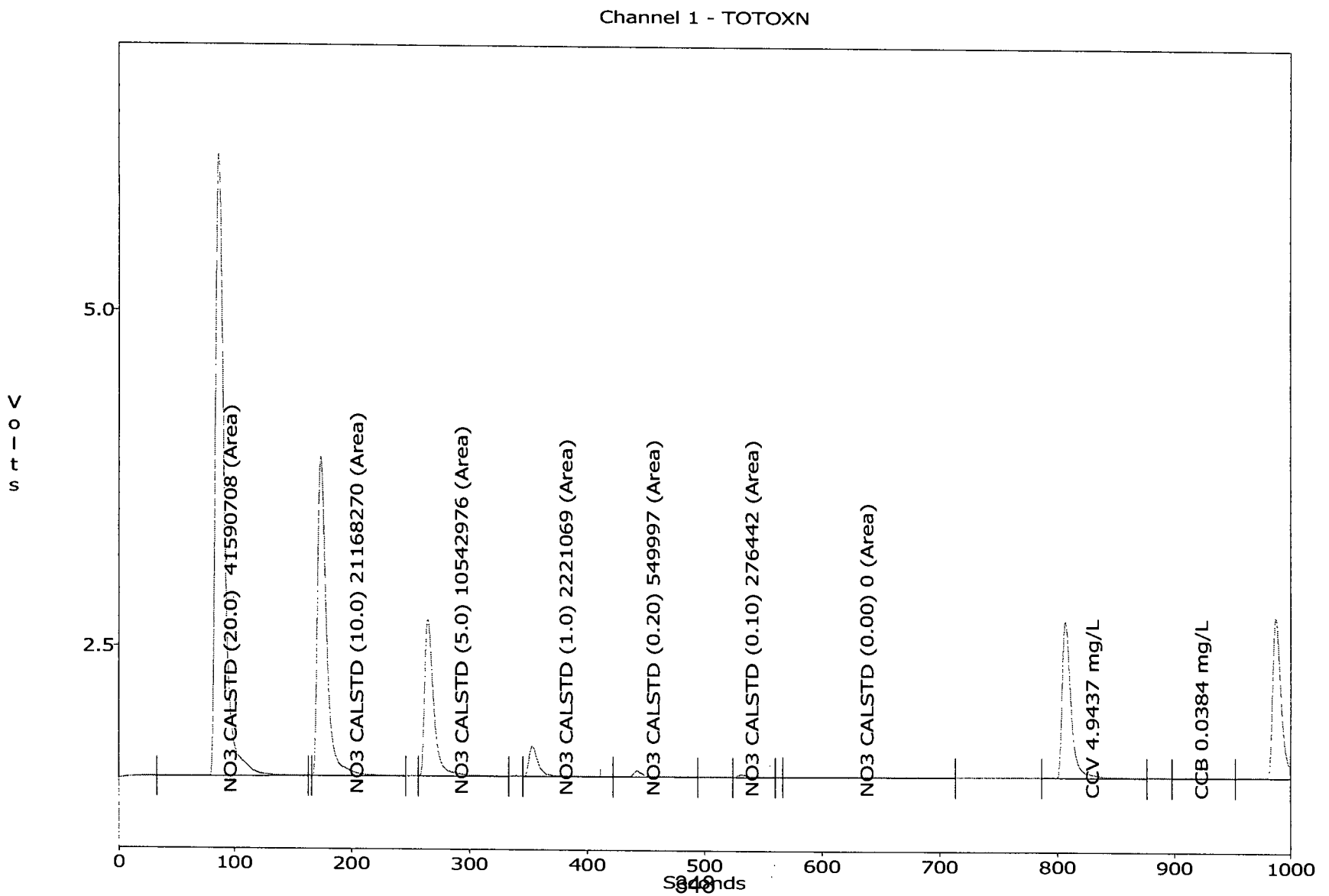
OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 13:33:27
DATA FILENAME: I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NA.TRA

TRAY DESCRIPTION:
Created: Feb 3, 2015 9:07:32
Modified: Feb 3, 2015 14:15:30
NO3/TOTOXN 150203NA
DATA DESCRIPTION:
Created: Feb 3, 2015 13:33:27
Modified: Feb 3, 2015 13:33:27

Multi-Channel Table
Type: Unknowns
Channel Range: 1 to 8 -- Cup Range: 1 to 40

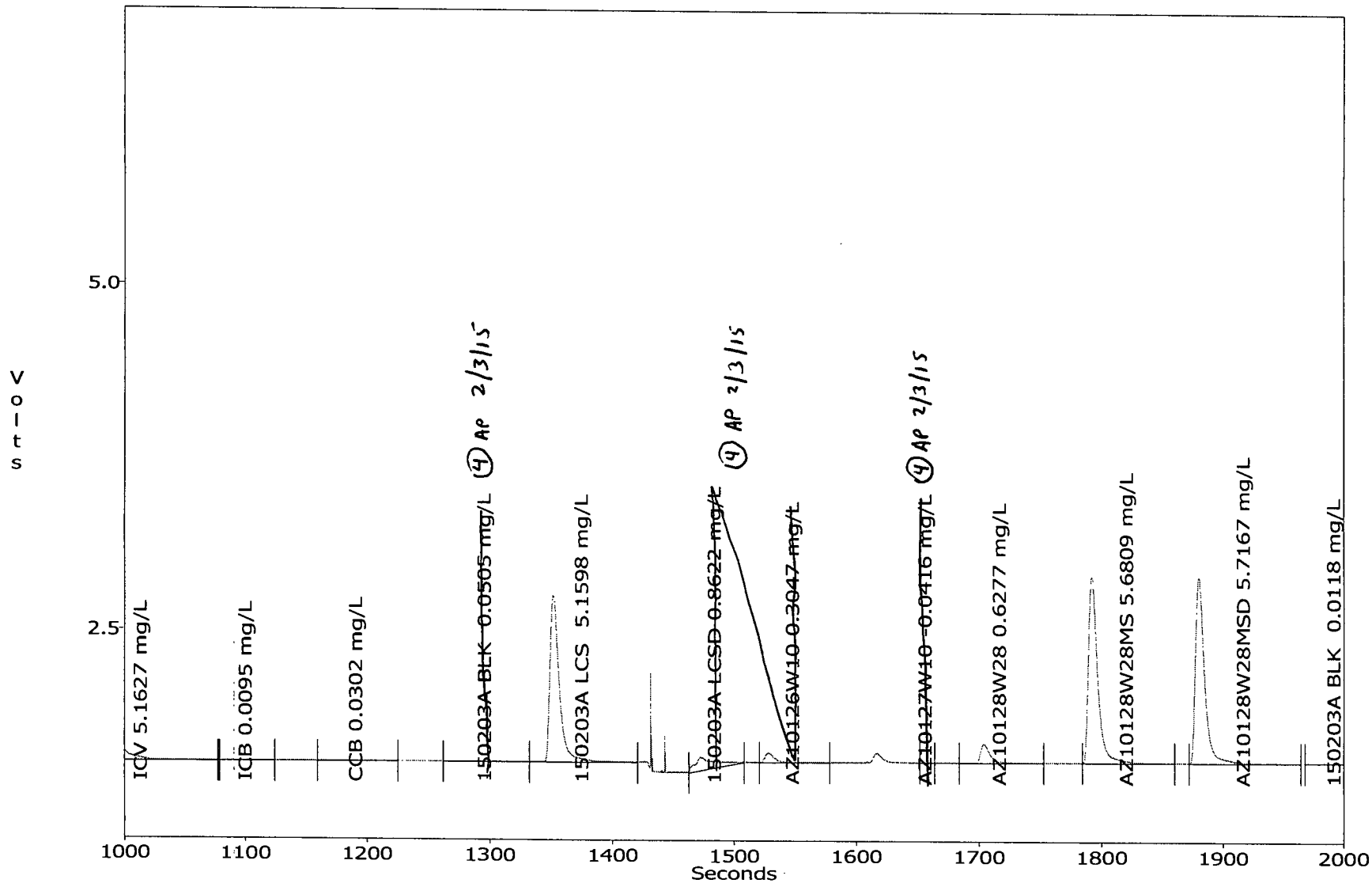
Cup	Sample ID	Sampling Time	# of Reps	TOTOXN (mg/L)	Man Dil Factor	
1	CCB	13:51:29	1	0.0302	1.0	
3	~~150203A BLK~~	~~13:53:06~~	~~1~~	~~0.0505~~	~~1.0~~	(4) AP 2/3/15
4	150203A LCS	13:54:34	1	5.1598	1.0	
5	~~150203A LCSD~~	~~13:56:03~~	~~1~~	~~0.8622~~	~~1.0~~	(4) AP 2/3/15
6	AZ10126W10	~~13:57:31~~	~~1~~	~~0.3047~~	~~1.0~~	(4) AP 2/3/15
7	~~AZ10127W10~~	~~13:59:00~~	~~1~~	~~-0.0416~~	~~1.0~~	(4) AP 2/3/15
8	AZ10128W28	14:00:27	1	0.6277	1.0	
9	AZ10128W28MS	14:01:55	1	5.6809	1.0	
10	AZ10128W28MSD	14:03:22	1	5.7167	1.0	
11	150203A BLK	14:04:50	1	0.0118	1.0	
12	150203A LCSD	14:09:18	1	5.1977	1.0	
13	AZ10126W10	14:10:46	1	0.2910	1.0	
30		~~14:13:51~~	~~1~~	~~-0.0144~~	~~1.0~~	(4) AP 2/3/15

OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 13:33:27
DATA FILENAME: I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NA.TRA



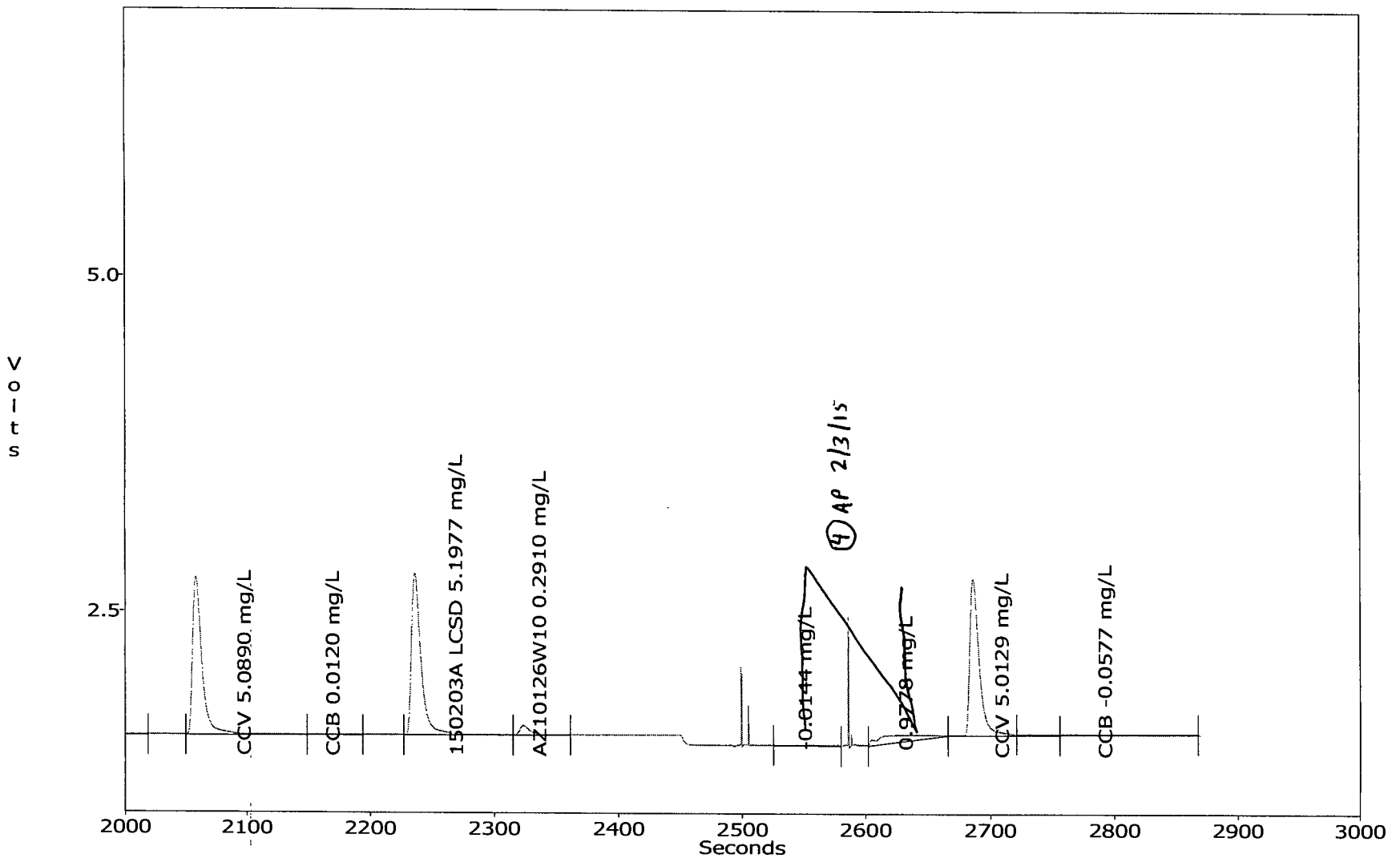
OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 13:33:27
DATA FILENAME: I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NA.TRA

Channel 1 - TOTOXN

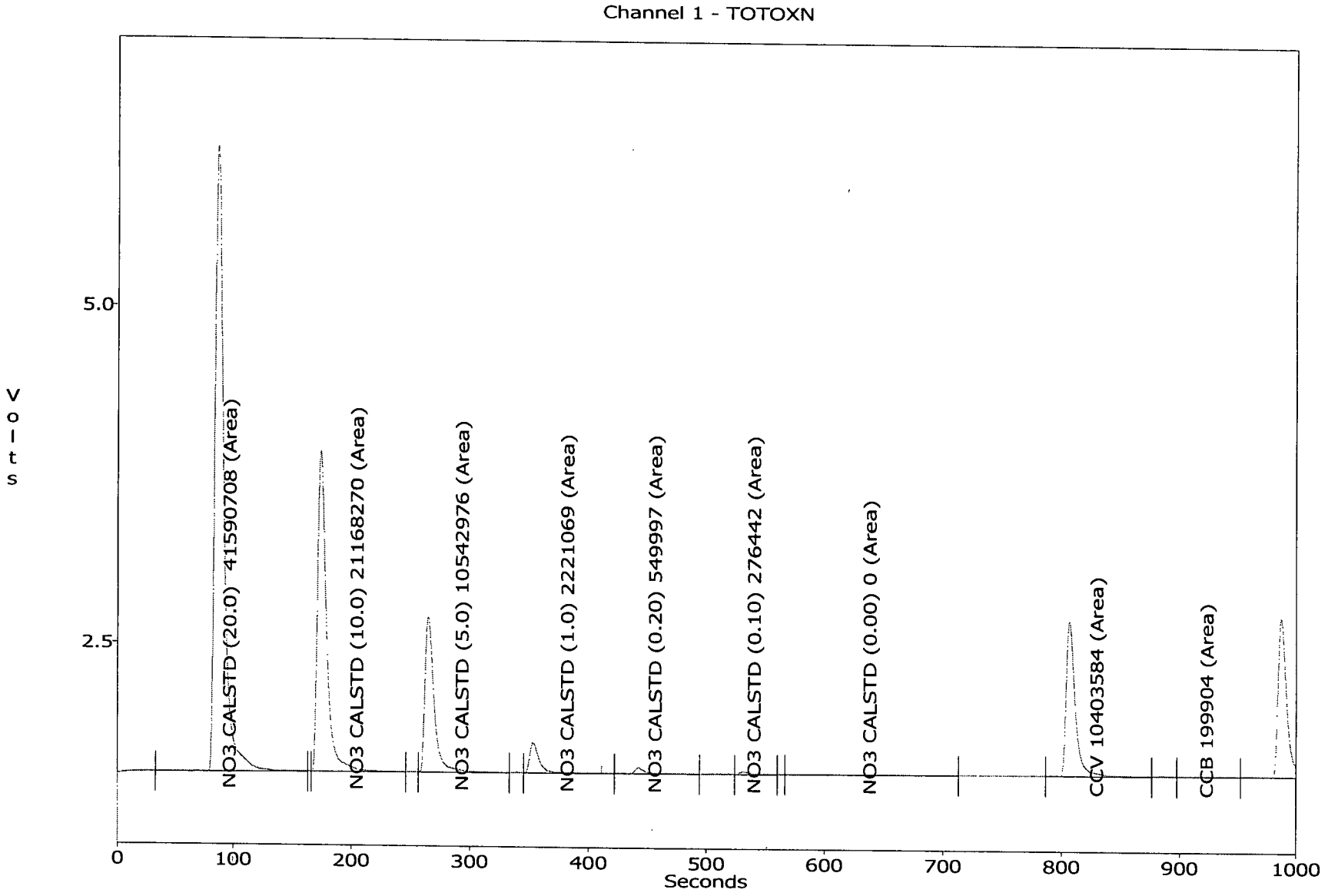


OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 13:33:27
DATA FILENAME: I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NA.TRA

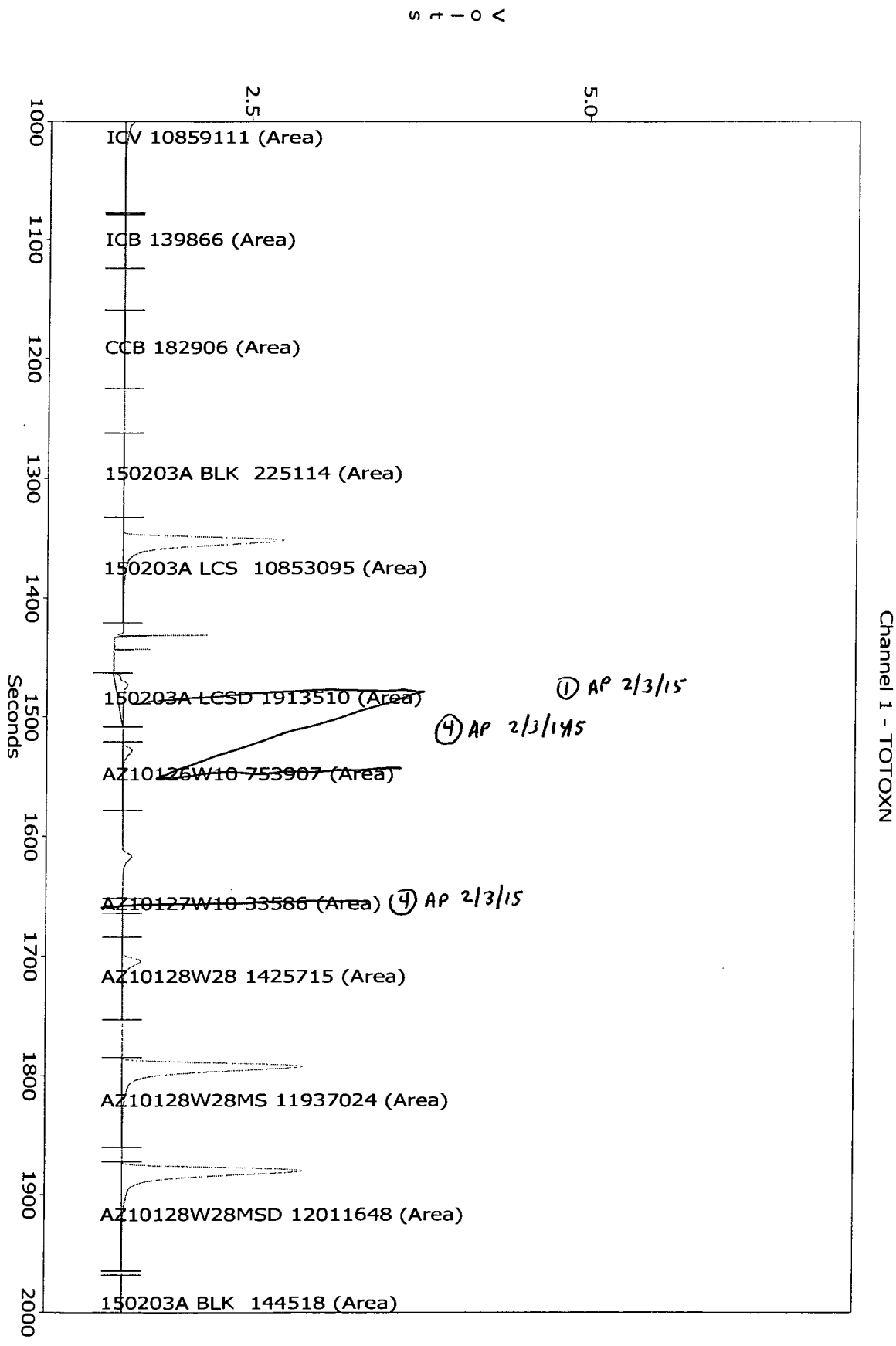
Channel 1 - TOTOXN



OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 13:33:27
DATA FILENAME: I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NA.TRA



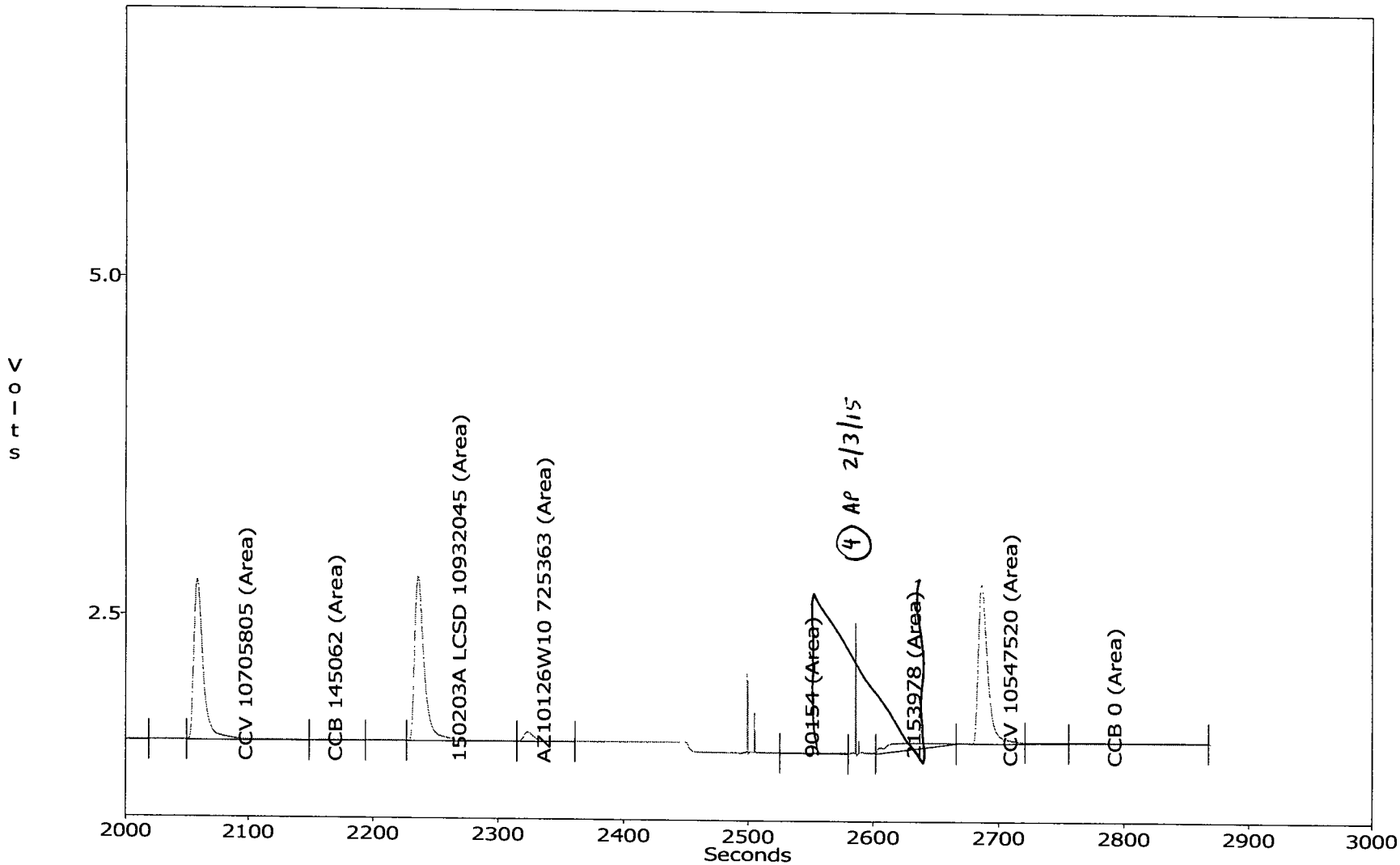
OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 13:33:27
DATA FILENAME: I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NA.TRA



① AP 2/3/15
④ AP 2/3/15
④ AP 2/3/15

OPERATOR:	Aileen
ACQ. TIME:	Feb 3, 2015 13:33:27
DATA FILENAME:	I:\LACHAT\OMNION\150203NA.FDT
METHOD FILENAME:	I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME:	I:\LACHAT\TRAYS\150203NA.TRA

Channel 1 - TOTOXN



INSTRUMENT: Flow Injection Analysis
TRAY: 150203NB.TRA METHOD: TOTOXN1.MET DATAFILE: 150203NB.FDT
DATE/TIME: Tue Feb 03 14:44:15 2015 OPERATOR: Aileen

***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1
Ch 1: TOTOXN = 5.0578 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 5.0578 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = 1.1569%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1
Ch 1: TOTOXN = 0.0193 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = 0.0193 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
Cup# 7 Sample: AZ10127W10 Type: Unknown Rep# 1/1
Ch 1: TOTOXN = 0.3253 mg/L
***** Auto DQM Begin *****
*** Starting DQM Set CONTINUING ***
Cup# 15 Sample: CCV Type: RelChkStd Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = 4.9984 mg/L
DQM Sample Results: CCV
Ch 1: TOTOXN = 4.9984 mg/L
Known Conc = 5.0000 mg/L - %Diff from Known = -0.0328%
Test 1: Passed
Cup# 6 Sample: CCB Type: Blank Rep# 1/1 Repeat# 1
Ch 1: TOTOXN = -0.0577 mg/L
DQM Sample Results: CCB
Ch 1: TOTOXN
Determined Conc = -0.0577 mg/L
Test 1: Passed
*** End of DQM Set CONTINUING - Set Passed ***
******* Tray Run Complete *******

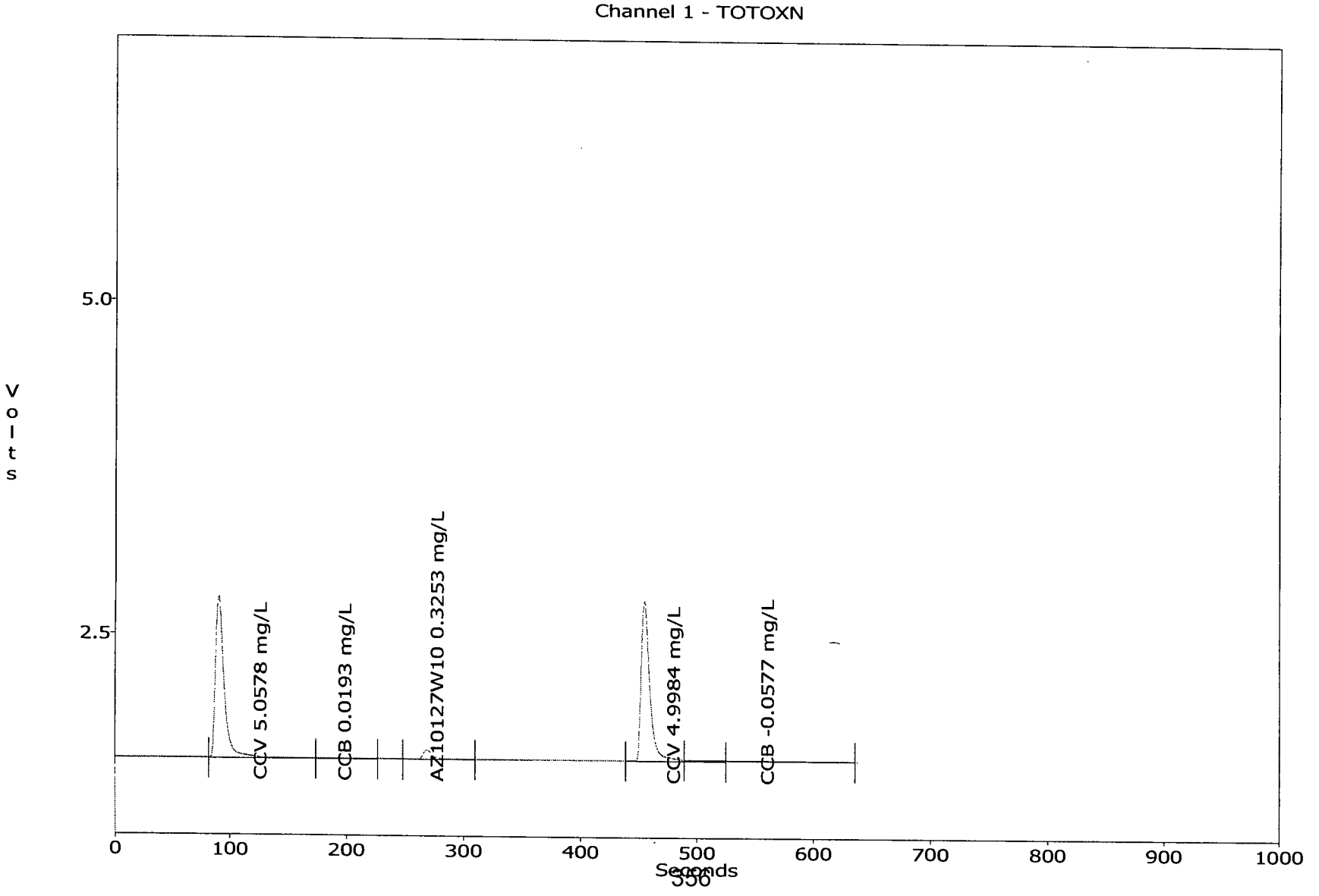
OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 14:44:15
DATA FILENAME: I:\LACHAT\OMNION\150203NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NB.TRA

TRAY DESCRIPTION:
Created: Feb 3, 2015 14:35:20
Modified: Feb 3, 2015 14:35:20
NO3/TOTOXN 150203NB
DATA DESCRIPTION:
Created: Feb 3, 2015 14:44:15
Modified: Feb 3, 2015 14:44:15

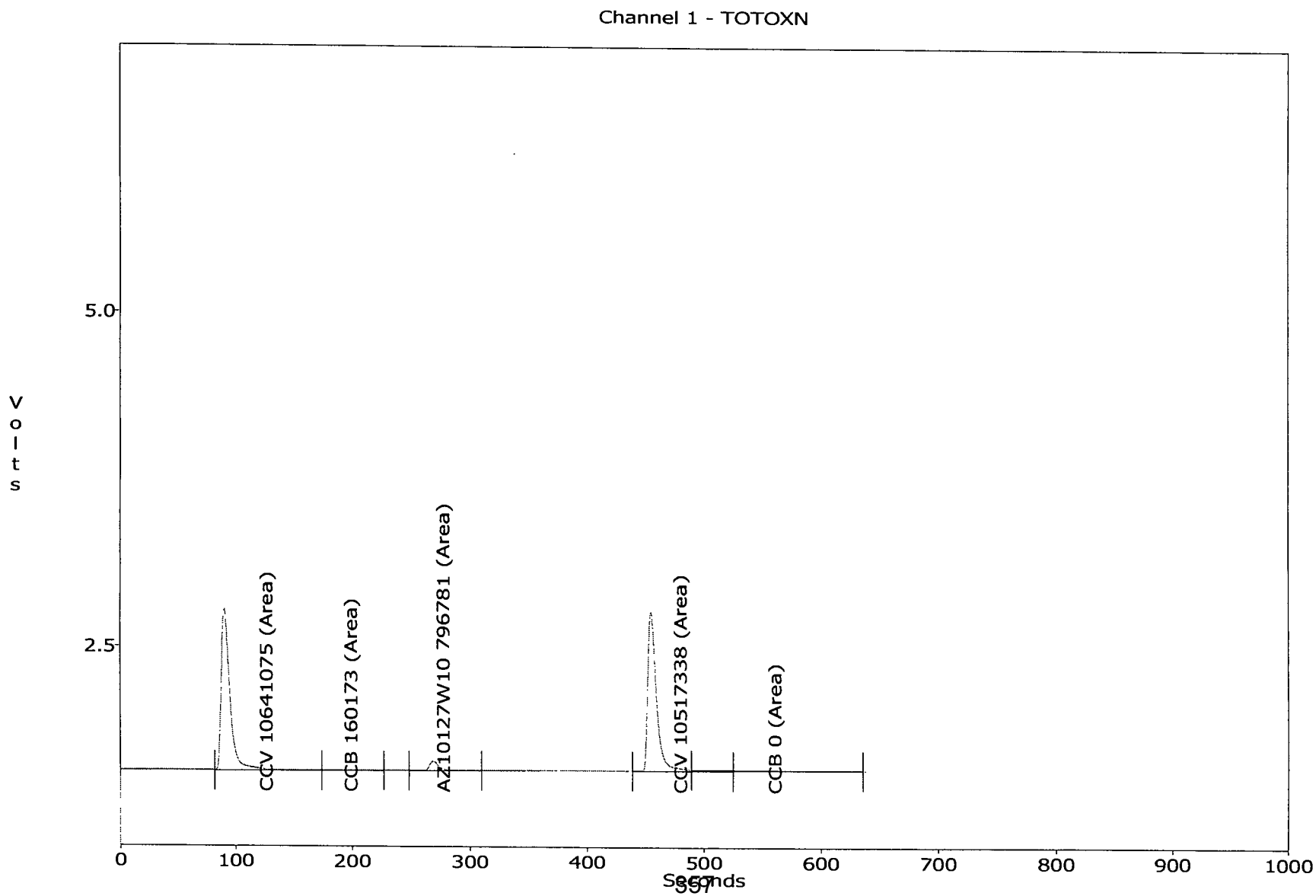
Multi-Channel Table
Type: Unknowns
Channel Range: 1 to 8 -- Cup Range: 1 to 40

Cup	Sample ID	Sampling Time	# of Reps	TOTOXN (mg/L)	Man Dil Factor
7	AZ10127W10	14:47:19	1	0.3253	1.0

OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 14:44:15
DATA FILENAME: I:\LACHAT\OMNION\150203NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NB.TRA



OPERATOR: Aileen
ACQ. TIME: Feb 3, 2015 14:44:15
DATA FILENAME: I:\LACHAT\OMNION\150203NB.FDT
METHOD FILENAME: I:\LACHAT\METHODS\TOTOXN1.MET
TRAY FILENAME: I:\LACHAT\TRAYS\150203NB.TRA



300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
7	27 Jan 2015	09:44	CCV 150126		150127a	1.
8	27 Jan 2015	09:55	CCB		150127a	1.
9	27 Jan 2015	10:06	150127A LCS		150127a	1.
11	27 Jan 2015	10:28	AZ10126W11 DF2		150127a	2.
12	27 Jan 2015	10:39	AZ10127W11 DF2		150127a	2.
19	27 Jan 2015	12:04	CCV 150126		150127a	1.
20	27 Jan 2015	12:15	CCB		150127a	1.
21	27 Jan 2015	12:26	AZ10128W31 DF5		150127a	5.
22	27 Jan 2015	12:37	AZ10128W31 DF5 Dup		150127a	5.
23	27 Jan 2015	12:48	AZ10128W31 DF5 MS		150127a	5.
24	27 Jan 2015	12:59	AZ10128W31 DF5 MSD		150127a	5.
25	27 Jan 2015	13:10	CCV 150126		150127a	1.
26	27 Jan 2015	13:21	CCB		150127a	1.

353.2 Injection Log

Directory: I:\Lachat\UPLOAD\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	03 Feb 2015	13:33	NO3 CALSTD (20.0)		150203NA	1.
2	03 Feb 2015	13:34	NO3 CALSTD (10.0)		150203NA	1.
3	03 Feb 2015	13:36	NO3 CALSTD (5.0)		150203NA	1.
4	03 Feb 2015	13:37	NO3 CALSTD (1.0)		150203NA	1.
5	03 Feb 2015	13:39	NO3 CALSTD (0.20)		150203NA	1.
6	03 Feb 2015	13:40	NO3 CALSTD (0.10)		150203NA	1.
7	03 Feb 2015	13:42	NO3 CALSTD (0.00)		150203NA	1.
8	03 Feb 2015	13:45	CCV		150203NA	1.
10	03 Feb 2015	13:48	ICV		150203NA	1.
11	03 Feb 2015	13:50	ICB		150203NA	1.
12	03 Feb 2015	13:51	CCB		150203NA	1.
14	03 Feb 2015	13:54	150203A LCS		150203NA	1.
18	03 Feb 2015	14:00	AZ10128W28		150203NA	1.
19	03 Feb 2015	14:01	AZ10128W28MS		150203NA	1.
20	03 Feb 2015	14:03	AZ10128W28MSD		150203NA	1.
21	03 Feb 2015	14:04	150203A BLK		150203NA	1.
22	03 Feb 2015	14:06	CCV		150203NA	1.
23	03 Feb 2015	14:07	CCB		150203NA	1.
24	03 Feb 2015	14:09	150203A LCSD		150203NA	1.
25	03 Feb 2015	14:10	AZ10126W10		150203NA	1.
26	03 Feb 2015	14:16	CCV		150203NA	1.
27	03 Feb 2015	14:18	CCB		150203NA	1.

353.2 Injection Log

Directory: I:\Lachat\UPLOAD\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	03 Feb 2015	14:44	CCV		150203NB	1.
2	03 Feb 2015	14:45	CCB		150203NB	1.
3	03 Feb 2015	14:47	AZ10127W10		150203NB	1.
4	03 Feb 2015	14:50	CCV		150203NB	1.
5	03 Feb 2015	14:51	CCB		150203NB	1.

300/9056A Injection Log

Directory: I:\Dionex\D1Anions\data\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
13	19 Jan 2015	10:13	CAL STD #1 01/19/15		150119a	19.
14	19 Jan 2015	10:24	CAL STD #2		150119a	1.
15	19 Jan 2015	10:35	CAL STD #3		150119a	1.
16	19 Jan 2015	10:46	CAL STD #4		150119a	1.
17	19 Jan 2015	10:57	CAL STD #5		150119a	1.
18	19 Jan 2015	11:09	CAL STD #6		150119a	1.
19	19 Jan 2015	11:20	CAL STD #7		150119a	1.
20	19 Jan 2015	11:31	150119 ICV		150119a	1.
21	19 Jan 2015	11:42	ICB		150119a	1.

SiO₂ For Method 370.1 or SM4500 Si D

Standards Prep Log Book# 62 page# 047

FINAL CONC. (mg/L)
100
0.1
0.2
1.0
5.0
10.0
20.0
5.00
FINAL CONC. (mg/L)
5
5

1/28/15 AP
Exp 2/4/15

AP 1/28/15

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	9/30/14	3/26/16	1000	5	50	100
		Lot 1065815					
1	100mg/L NH4 STOCK	1/28/15	2/4/15	100	0.0	100	0.0
2					0.35	100	0.35
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

1/28/15 AP
Exp 2/4/15

AP 1/28/15

NO3-N STDS	STANDARD / STOCK	PREP DATE / LOT	OPEN / EXP DATE	CONC STOCK OR STD [mg/L]	STOCK OR STD (mL)	FINAL VOL. W/DI H2O (mL)	FINAL CONC. NO3-N (mg/L)
100mg/L	O2SI	2/28/14	8/30/15	1000	5	50	100
		Lot 1057207					
0.1 mg/L	100mg/L NO3-N STOCK	1/28/15	2/4/15	100	0.1	100	0.1
0.2 mg/L					0.2	100	0.2
1.0 mg/L					1.0	100	1.0
5.0 mg/L					5.0	100	5.0
10.0 mg/L					10.0	100	10.0
20.0 mg/L					20.0	100	20.0
NO3-N ICV	CPI	6/12/14	12/11/15	1000	0.25	50	5.00

LOT 14F013

NO2-N Stds	STANDARD / STOCK	PREP DATE	EXP DATE	CONC STOCK OR STD [mg/L]	STOCK OR STD (mL)	FINAL VOL. W/DI H2O (mL)	FINAL CONC. NO2-N (mg/L)
100mg/L	O2SI	1062905	1/10/16	1000	5	50	100
		7/18/14					
0.1 mg/L	100mg/L NO2-N STOCK	1/28/15	2/4/15	100	0.1	100	0.1
0.2 mg/L					0.2	100	0.2
0.5 mg/L					0.5	100	0.5
2.5 mg/L					2.5	100	2.5
5.0 mg/L					5.0	100	5.0
NO2-N ICV	CPI LOT#13J007	2/24/14	8/20/15	304.5	1	100	3.045

	STOCK	LOT#	EXP DATE	CONC STOCK [mg/L]	STOCK (mL)	FINAL VOL.	FINAL CONC.
LCS/LCSD	O2SI	1057207	2/4/15	1000	0.2	50 mL w/ DI H20	4
	O2SI	1062905	2/4/15	1000	0.1		2
MS / MSD	O2SI	1057207	2/4/15	1000	0.2	50 mL w/ SAMPLE	4
	O2SI	1062905	2/4/15	1000	0.1		2

For TOXN LCS/LCSD, used 0.250 ml 1000 mg/L NO3-N/50 ml DI = 5 mg/L.
For TOXN MS/MSD, used 0.250 ml 1000 mg/L NO3-N/50 ml sample = 5 mg/L..

1/29/15 BB
exp 1/29/15

0.1N H_2SO_4 Titrant for Alkalinity
3 mL H_2SO_4 JT Baker lot #0000007133
Final vol 1L w/DI water

1/29/15 BB
exp 1/29/15

0.02N H_2SO_4 Titrant for Alkalinity
200 mL 0.1N H_2SO_4 (prep 1/29/15)
Final vol 1L w/DI water

1-29-15 ck
exp
1-30-15

ck 1-29-15

OPO_4-P For Method SM4500PE exp 1-30-15

1mL X 1000ppm PO_4-P CPI LOT 12G005-32026 / 100mL DI→10ppm PO_4-P
10ppm PO_4-P (1-29-15) X 10mL / 100mL DI → 1ppm PO_4-P
1ppm PO_4-P (1-29-15) 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 (1-29-15)X 0.75mL / 50mL DI → 0.15ppm PO_4-P
LCS: 0.75mL X 10ppm PO_4-P (1-29-15 / 50mL DI → 0.15ppm PO_4-P
MS: 0.75mL X 10ppm PO_4-P (1-29-15) / 50mL sample → 0.15ppm PO_4-P

1-30-15 ck
exp 7-30-15

0.025N I_2 (for Sulfide)
3.20 g I_2 EMD LOT 2011121240-03046
+25.00 g KI VWR BDH LOT 143987-03113
} 1 L DI

1-30-15 ck
exp 7-30-15

0.025N $Na_2S_2O_3$ (for Sulfide)
6.205 g $Na_2S_2O_3 \cdot 5H_2O$ Alaeron LOT 0000024050-03097
+9 mL NaOH 1N 1-21-15
} 1 L DI

1-28-15 CK

exp 1-29-15

CK 1-28-15

SiO_2 For Method 370.1 or SM4500 Si D

1000ppm SiO2 O2SI Lot 1051539-32897 X 10mL/ 100mL DI → 100ppm SiO_2

100ppm SiO_2 (01-28-15) X 0.25mL / 25mL DI → 1ppm SiO_2
↓ X 0.5mL ↓ → 2ppm SiO_2
↓ X 1.0mL ↓ → 4ppm SiO_2
↓ X 2.5mL ↓ → 10ppm SiO_2
↓ X 5.0mL ↓ → 20ppm SiO_2

ICV = 4ppm SiO_2
1000ppm SiO_2 Ultra Scientific Lot P01064-32895 X 0.1mL / 25mL DI

LCS / MS = 4ppm SiO_2
1000ppm SiO_2 O2SI Lot 1051539-32897 X 0.1mL / 25mL DI

1-29-15 CK

exp 1-30-15

CK 1-29-15

SiO_2 For Method 370.1 or SM4500 Si D

1000ppm SiO2 O2SI Lot 1051539-32897 X 10mL/ 100mL DI → 100ppm SiO_2

100ppm SiO_2 (01-29-15) X 0.25mL / 25mL DI → 1ppm SiO_2
↓ X 0.5mL ↓ → 2ppm SiO_2
↓ X 1.0mL ↓ → 4ppm SiO_2
↓ X 2.5mL ↓ → 10ppm SiO_2
↓ X 5.0mL ↓ → 20ppm SiO_2

ICV = 4ppm SiO_2
1000ppm SiO_2 Ultra Scientific Lot P01064-32895 X 0.1mL / 25mL DI

LCS / MS = 4ppm SiO_2
1000ppm SiO_2 O2SI Lot 1051539-32897 X 0.1mL / 25mL DI

1/29/15 BB
exp 1/29/16

Inorganic Spiking Solution (ISS)
7.001g $NaHCO_3$ BDH lot# 183064
Final vol 1L w/DI water

BB 12/30/14

BB 12/30/14

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 1/9/15

BB 1/9/15

NORMALITY OF TITRANT (0.02 N H2SO4)

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.85

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02110

BB 1/19/15

BB 1/19/15

NORMALITY OF TITRANT (0.02 N H2SO4)

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.9

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000030806

Normality --> 0.02101

BB 1/27/15

BB 1/27/15

NORMALITY OF TITRANT (0.02 N H2SO4)

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 11.9

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000065274

Normality --> 0.02101

BB 1/29/15

BB 1/29/15

NORMALITY OF TITRANT (0.02 N H2SO4)

NaCO3 titrated (mL) 0.25
normality of Na2CO3 1.0
Acid used (mL) 12.05

*Begin all titrations with full buret reading 0.00
*Na2CO3 JT Baker 0000065274

Normality --> 0.02075

12/22/14 MM exp 12/23/14	Anion CCV, LCS, MS/MSD made as per page 48.
12/26/14 MM exp 12/27/14	Anion CCV, LCS, MS/MSD made as per page 48
12/30/14 MM exp 12/31/14	Anion CCV made as per page 48
01/02/15 MM exp 01/03/15	Anion CCV, LCS, MS/MSD made as per page 48.
01/06/15 MM exp 01/07/15	Anion CCV/LCS, MS/MSD made as per page 48.
01/06/15 MM	Anion Eluent made as per page 22.
01/07/15 MM exp 01/08/15	Anion CCV, LCS, MS/MSD made as per page 48.
01/09/15 MM	Anion ICAL stock, curve, & ICV made as per page 47.
01/13/15 MM exp 01/14/15	Anion CCV made as per page 48.
01/13/15 MM	Anion Eluent made as per page 22.
01/14/15 MM	Anion LCS, MS/MSD made as per page 48.
01/15/15 MM exp 01/16/15	Anion CCV, LCS, MS/MSD made as per page 48.
01/19/15 MM	Anion ICAL stock, curve, and ICV made as per page 47.

made as per p. 29
"
per p. 29
e as per p. 29
CB2.

11-11-13
exp 11-12-13

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

11-11-13

11-11-13
exp 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

11-11-13

11-11-13
exp 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	

11-11-13

074

01/19/15 mm exp 01/20/15	Anion CCV, LCS, made as per page 48.
01/21/15 mm exp 01/22/15	Anion CCV, LCS, MS/MSD made as per page 48.
01/22/15 mm exp 01/23/15	Anion CCV, LCS, MS/MSD made as per page 48.
01/23/15 mm exp 01/24/15	Anion CCV, MS/MSD made as per page 48.
01/26/15 mm exp 01/27/15	Anion CCV, LCS, MS/MSD made as per page 48.
01/27/15 mm	Anion Eluent made as per page 22.
01/27/15 mm	Anion MS/MSD made as per page 48.
01/28/15 mm exp 01/29/15	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

EMAX

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CLIENT: **BATTELLE**

PROJECT: **RED HILL PHASE 1B**

SDG: **15A141**

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GC-VOA	METHOD 5030B/8015B	4000 – 4048
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METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 02-13-2015
EMAX Batch No.: 15A141

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 01/24/15.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
RHMW07-GW-02	A141-01	01/22/15	WATER	TPH GASOLINE
				TPH
				PAH BY 8270C SIM ULTRA LOW
RHMW07-GW-02FD	A141-02	01/22/15	WATER	TPH GASOLINE
				TPH
				PAH BY 8270C SIM ULTRA LOW
RHMW06-GW-02	A141-03	01/23/15	WATER	TPH GASOLINE
				TPH
				PAH BY 8270C SIM ULTRA LOW
TRIP BLANK 1/23/15	A141-04	01/23/15	WATER	TPH GASOLINE
RHMW06-GW-02MS	A141-03M	01/23/15	WATER	TPH GASOLINE
				TPH
				PAH BY 8270C SIM ULTRA LOW
RHMW06-GW-02MSD	A141-03S	01/23/15	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

①

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. * 15A141

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 Battelle
COMPANY 301 South State St., Ste. N001, Newtown PA 18940
ADDRESS
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) 1C	TPH-GRO (EPA 8015B-P) 1C	TPH-DRO/KRO (EPA 8015Am-E) 1C	COMMENTS
1	RHMW07-GW-02	RHMW07	1/22/15	1300	7	40mL 1L	VOA + Amber	0		X	X	X	Date Shipped: 1/23/15
2	RHMW07-GW-02FD	RHMW07	1/22/15	1330	7			0		X	X	X	Carrier: FedEx
3	RHMW06-GW-02	RHMW06	1/23/15	0830	7			0		X	X	X	Way Bill No: 8764 1243 3004
3	RHMW06-GW-02MS	RHMW06	1/23/15	0840	7			0		X	X	X	
3	RHMW06-GW-02MSD	RHMW06	1/23/15	0850	7			0		X	X	X	
4	Trip Blank 1/23/15		1/23/15	0945	3	40mL	VOA	0	X		X		
7													
8													
9													
0													

Instructions

Cooler #	Temp. (°C)	Sample #s
1	3.4	
2	14.0	

SAMPLER

RELINQUISHED BY	Date	Time	RECEIVED BY
James Terry / James Terry	1/23/15	1130	
	01-24-15	1155	

COURIER/AIRBILL

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.

Custody Sealed cooler

1 of 1

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 15A141
☑ Fedex ☐ UPS ☐ GSO ☐ Others	7801 7001 3635	Recipient Shenfema
☐ EMAX Courier ☐ Client Delivery	8764 ~~7001~~ 1243 3004	Date 01-24-15/012615 Time 1155/0915

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 3.4 °C B ☑ Cooler 2 14.0 °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 130538305 B S/N 140257070 C - S/N D - S/N
Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.** FW 10/27/14
Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-3		D6		R1
3	25	D10		OK

1/26/15

☐ 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:

Cooler 1 arrived 01/24/15 @ 1155, at 3.4°C. Cooler 2 arrived 01/26/15 @ 14°C

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 Label	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 1/26/15 — SRF Date 1/26/15 — PM Date 1/26/15

Andy Mai

From: Andy Mai
Sent: Monday, January 26, 2015 12:25 PM
To: 'Scala, Carolyn'; Cecilia Chavez
Subject: RE: Red Hill groundwater monitoring; 15A141

Yup spot on. We will proceed with the analysis and let you know if we have any questions.

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:
Monday- February 16, 2015

From: Scala, Carolyn [mailto:ScalaC@battelle.org]
Sent: Monday, January 26, 2015 12:19 PM
To: Andy Mai; Cecilia Chavez
Subject: RE: Red Hill groundwater monitoring; 15A141

OK, thank you Andy! So to confirm, it looks like half of the amber bottles were in the first cooler and half were in the second cooler. So there are two bottles for each sample that arrived within temperature, from which we need the TPH-DRO/RRO and PAH analysis. I understand there may not be enough sample volume to rerun any of the samples. We'll figure out how to cross this bridge, if and when we need to. Please proceed with the requested analysis.
Thanks again, -Carolyn

From: Andy Mai [mailto:AMai@emaxlabs.com]
Sent: Monday, January 26, 2015 2:58 PM
To: Scala, Carolyn; Cecilia Chavez
Subject: RE: Red Hill groundwater monitoring; 15A141

Hi Carolyn,

It looks like there were only ambers in the out of temperature cooler (cooler #2; see Sample Receipt Form 2 for details). We should be still have enough sample to proceed with the analysis listed but we only have one shot. We can not re-extract/reanalyze if it is needed later. Please let me know if we should proceed with the analysis requested.

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:
Monday- February 16, 2015

From: Cecilia Chavez
Sent: Monday, January 26, 2015 9:54 AM
To: 'Scala, Carolyn'; Andy Mai
Subject: RE: Red Hill groundwater monitoring - PO 434913

Hi Carolyn and Andy,

The following bottles came in this morning:

RHMW07-GW-02 - 2 1L ambers
RHMW07-GW-02FD - 2 1L ambers
RMHW06-GW-02 / MS / MSD - 6 1L ambers

Thanks
Cecilia

From: Scala, Carolyn [mailto:ScalaC@battelle.org]
Sent: Monday, January 26, 2015 9:46 AM
To: Cecilia Chavez; Andy Mai
Subject: RE: Red Hill groundwater monitoring - PO 434913

Hi Cecilia. Can you please let me know which samples were in the cooler that was delayed and had the 14.1 temp? Thanks, -Carolyn

From: Cecilia Chavez [mailto:CChavez@emaxlabs.com]
Sent: Monday, January 26, 2015 12:19 PM
To: Scala, Carolyn; Andy Mai
Subject: RE: Red Hill groundwater monitoring - PO 434913

Andy

One cooler delayed it's arrival to the FEDEX station and did not get delivered until this morning. The temperatue is 14.1 degrees. Please advise on how to proceed.

Thank you
Cecilia

From: Scala, Carolyn [mailto:ScalaC@battelle.org]
Sent: Friday, January 23, 2015 5:21 PM
To: Andy Mai
Cc: Cecilia Chavez
Subject: RE: Red Hill groundwater monitoring - PO 434913

Hi Andy. You should be receiving 2 coolers tomorrow via FedEx. COC and FedEx air bill attached.
Thank you and have a nice weekend!
-Carolyn

From: Andy Mai [mailto:AMai@emaxlabs.com]
Sent: Friday, January 23, 2015 11:23 AM

FedEx
MPS# 0681 7801 7001 3635

WZ HHRA

MON – 26 JAN 10:30A
PRIORITY OVERNIGHT

90501
CA-US LAX

#58056 01/23 537J1/8F15/EE4B

FedEx Express

URGENT

Name

Co

Add

City, State ZIP

Telephone

1835 W. 205th st
Torr, CA. 90501

FROM

136596 REV 11/09 RRD

FedEx Express

S

US

FedEx Express

FedEx Express

15A 141
3.4°C

ORIGIN ID:HNLA (808) 833-2225
ENVIRONET, INCORPORATED
1286 QUEEN EMMA ST
HONOLULU, HI 968132303
UNITED STATES US

SHIP DATE: 23JAN15
ACTWGT: 67.9 LB
CAD: /POS1525
DIMS: 24x14x13 IN
BILL SENDER

TO SAMPLE RECVG
EMAX LABS
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889
INV:
PO: REF:
DEPT:

FedEx Express

J1510150114010v

1 of 2
TRK# 0215 8764 1243 3004
MASTER
WO HHRA

SATURDAY 12:00P
PRIORITY OVERNIGHT

90501
CA-US LAX

FedEx
MPS
23JAN 12:25
MASTER TRK#:
Pkg Trk#'s: 780170013635

Pcs: 2 1 of 1
Emp#: 58056 Rt#: 8TA
876412433004

Recipient Copy

1/24/15

RT 918 3 12:00 A
ST 21 3004 01.24

FedEx Express

SDR

151966 10/04 MWM

1005

FedEx Express SDR SDR FedEx Express

FedEx® Saturday Delivery 151968 10/04 MWI

FedEx® Saturday Delivery 151968 10/04 MWI

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8764 1243 3004

Recipient's Copy

This portion can be removed for Recipient's records.

FedEx Tracking Number 876412433004

Sender's Name James Terry ~~CARLINE HIGAKI~~ Phone 808 833-2225

Company ENVIRONET, INCORPORATED

Address 1286 Queen Emma St. 650 IWILEI RD STE 204 Dept./Floor/Suite/Room

City HONOLULU State HI ZIP 96817 96816

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Receiving Phone 310 614 8859

Company Emax Laboratories Inc.

Address 1835W 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.

0441295593

8764 1243 3004

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 new 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.
- [x] 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
- [x] Other

6 Special Handling and Delivery Signature Options

- [x] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
- [x] 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.

- [x] 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. [ ]

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages 2 Total Weight 128 lbs. Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

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RECIPIENT: PEEL

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

Align Open End of FedEx Pouch Here

100 1607

ORIGIN ID:HNLA (808) 833-2225
ENVIRONET, INCORPORATED

1286 QUEEN EMMA ST

HONOLULU, HI 968132303
UNITED STATES US

ACTWGT:
CAD: /POS1525
DIMS: 22x16x15 IN

BILL SENDER

TO **SAMPLE RECVG**
EMAX LABS
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF:
INV:
PO: DEPT:

FedEx Express

J15101501140101

2 of 2

MPS# 0681 **7801 7001 3635**

Mstr# 8764 1243 3004 0215

SATURDAY 12:00P
PRIORITY OVERNIGHT

WO HHRA

1/26/15

90501
CA-US **LAX**

1008

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#: 15A141

CASE NARRATIVE

Client : BATTELLE

Project: RED HILL PHASE 1B

SDG : 15A141

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

A total of three(3) water samples were received on 01/24/15 to be analyzed for Semi Volatile Organics Low Level by GC/MS SIM 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:RAL135) 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. SVA035WB - 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. SVA035WL/SVA035WC - all analytes were within LCS QC limits. Several %RPDs were above the limit. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. A141-03M/A141-03S - all analytes were within QC limits. Refer to Matrix QC summary form for details.

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. : 15A141
Instrument ID : T-OE9

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
LCS1W	SVA035WL	1	NA	01/30/1511:52	01/28/1510:15	RAL136	RLL004	SVA035W	Lab Control Sample (LCS)
LCD1W	SVA035WC	1	NA	01/30/1512:10	01/28/1510:15	RAL137	RLL004	SVA035W	LCS Duplicate
RHMW06-GW-02MS	A141-03M	1.03	NA	01/30/1512:34	01/28/1510:15	RAL138	RLL004	SVA035W	Matrix Spike Sample (MS)
RHMW06-GW-02MSD	A141-03S	1.12	NA	01/30/1512:57	01/28/1510:15	RAL139	RLL004	SVA035W	MS Duplicate (MSD)
MBLK1W	SVA035WB	1	NA	01/30/1513:21	01/28/1510:15	RAL140	RLL004	SVA035W	Method Blank
RHMW07-GW-02	A141-01	1.1	NA	01/30/1513:44	01/28/1510:15	RAL141	RLL004	SVA035W	Field Sample
RHMW07-GW-02FD	A141-02	1	NA	01/30/1514:08	01/28/1510:15	RAL142	RLL004	SVA035W	Field Sample
RHMW06-GW-02	A141-03	1.03	NA	01/30/1514:32	01/28/1510:15	RAL143	RLL004	SVA035W	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:	01/22/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/28/15 10:15
Sample ID:	RHMW07-GW-02	Date Analyzed:	01/30/15 13:44
Lab Samp ID:	A141-01	Dilution Factor:	1.1
Lab File ID:	RAL141	Matrix :	WATER
Ext Btch ID:	SVA035W	% Moisture :	NA
Calib. Ref.:	RLL004	Instrument ID :	T-OE9

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	0.503	0.5500	91.4	50-135

Quantitation Report (QT Reviewed)

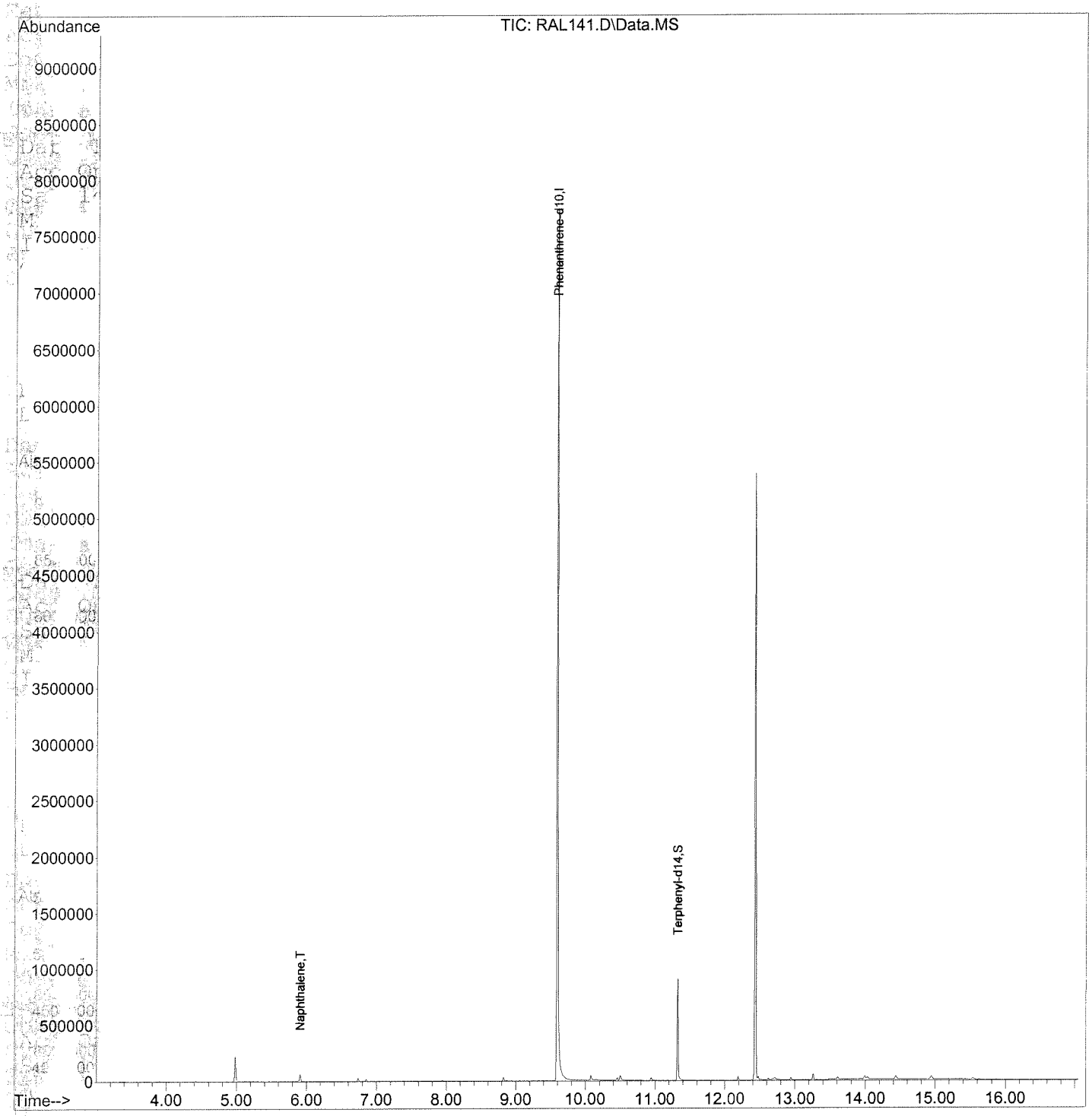
Data File : C:\msdchem\1\DATA\15A30\RAL141.D
Vial: 9
Acq On : 30 Jan 2015 13:44
Operator: KVu
Sample : 15A141-01
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 14:17:36 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:47 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

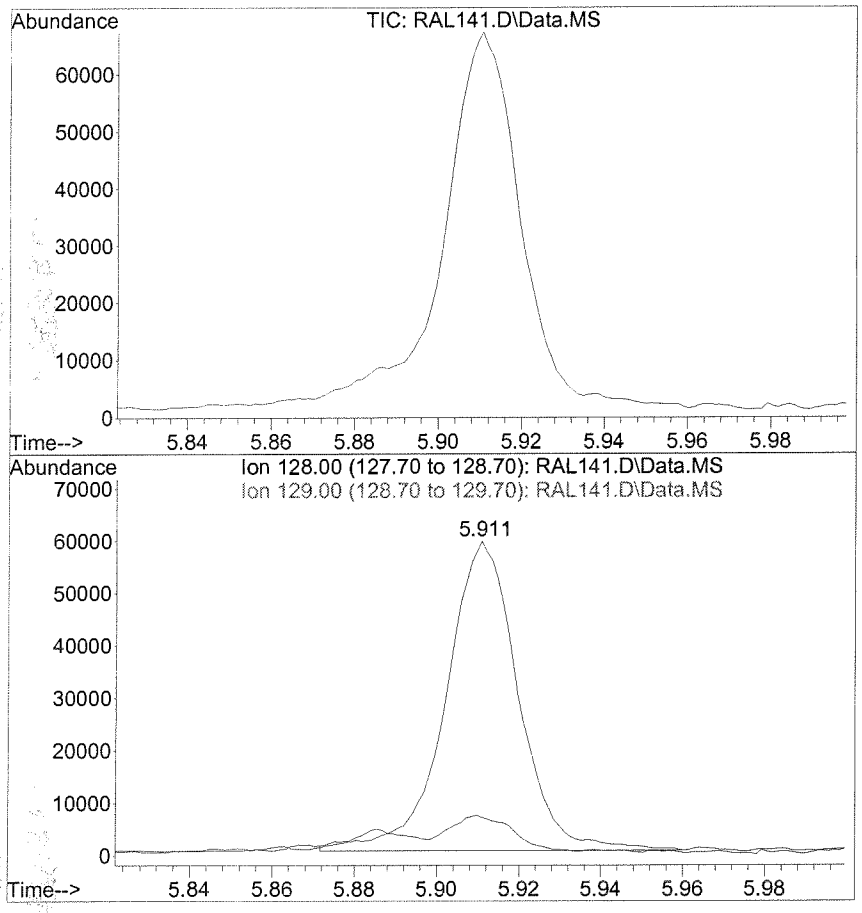
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.594	188	7049141	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.322	244	815014	456.85 ppb	0.00
Spiked Amount 500.000			Recovery	= 91.37%	
Target Compounds					Qvalue
2) Naphthalene	5.911	128	72243	13.24 ppb	97

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL141.D
Vial: 9
Acq On : 30 Jan 2015 13:44
Operator: KVu
Sample : 15A141-01
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 14:17:36 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:47 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M





#2
Naphthalene
Concen: 13.24 ppb
RT: 5.911 min Scan# 2298
Delta R.T. -0.007 min
Lab File: RAL141.D
Acq: 30 Jan 2015 13:44

Tgt Ion:128 Resp: 72243

Ion	Ratio	Lower	Upper
128	100		
129	10.1	0.0	41.2

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

Client	: BATTELLE	Date Collected:	01/22/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/28/15 10:15
Sample ID:	RHMW07-GW-02FD	Date Analyzed:	01/30/15 14:08
Lab Samp ID:	A141-02	Dilution Factor:	1
Lab File ID:	RAL142	Matrix	: WATER
Ext Btch ID:	SVA035W	% Moisture	: NA
Calib. Ref.:	RLL004	Instrument ID	: T-OE9

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	0.433	0.5000	86.6	50-135

Quantitation Report (QT Reviewed)

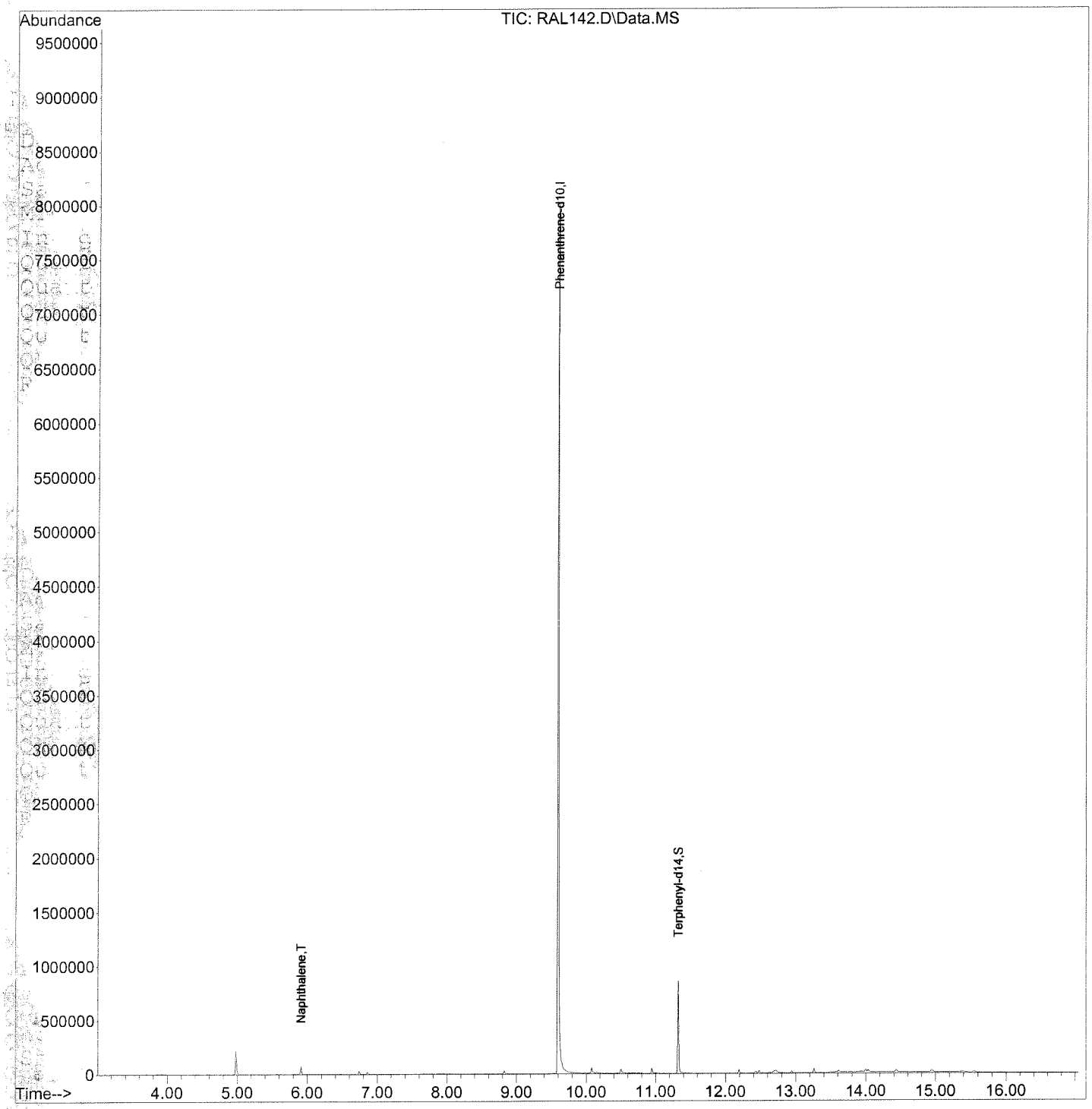
Data File : C:\msdchem\1\DATA\15A30\RAL142.D Vial: 10
Acq On : 30 Jan 2015 14:08 Operator: KVu
Sample : 15A141-02 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 14:53:35 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:47 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

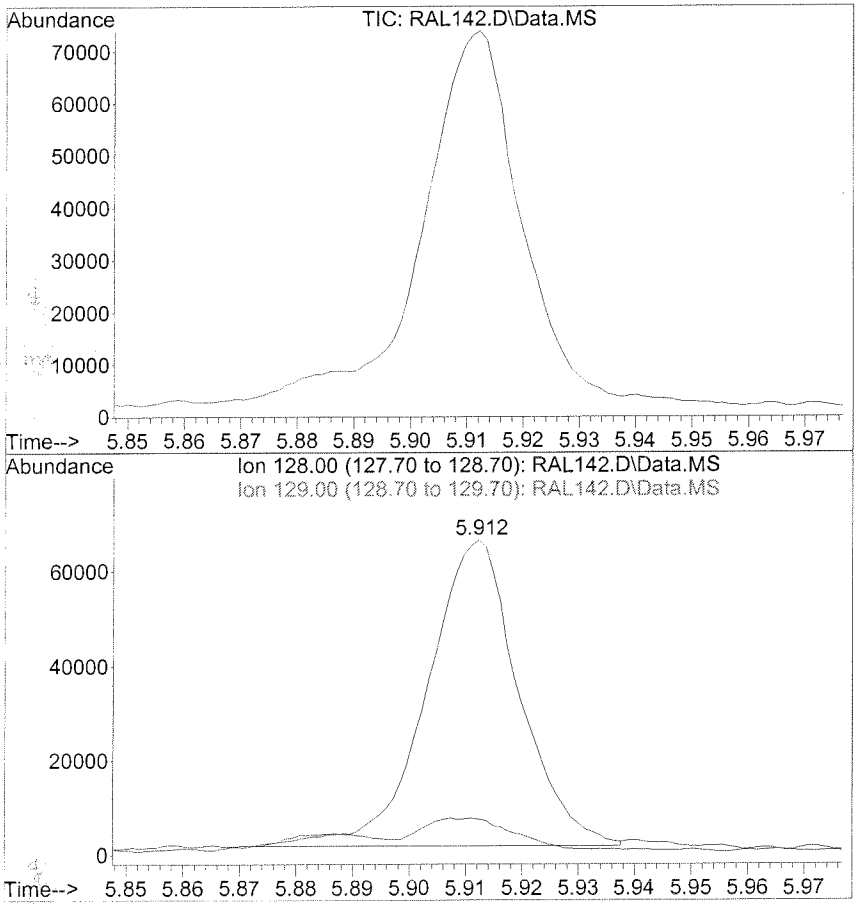
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.596	188	6950436	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.322	244	761260	432.78 ppb	0.00
Spiked Amount 500.000			Recovery =	86.56%	
Target Compounds					Qvalue
2) Naphthalene	5.912	128	73514	13.66 ppb	77

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL142.D
Vial: 10
Acq On : 30 Jan 2015 14:08
Operator: KVu
Sample : 15A141-02
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 14:53:35 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:47 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M





#2
Naphthalene
Concen: 13.66 ppb
RT: 5.912 min Scan# 2298
Delta R.T. -0.006 min
Lab File: RAL142.D
Acq: 30 Jan 2015 14:08

Tgt Ion:128 Resp: 73514

Ion	Ratio	Lower	Upper
128	100		
129	2.5	0.0	41.2

METHOD SW3520C/8270C SIM
SEMI VOLATILE ORGANICS LOW LEVEL BY GC/MS SIM

Client	: BATTELLE	Date Collected:	01/23/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/28/15 10:15
Sample ID:	RHMW06-GW-02	Date Analyzed:	01/30/15 14:32
Lab Samp ID:	A141-03	Dilution Factor:	1.03
Lab File ID:	RAL143	Matrix :	WATER
Ext Btch ID:	SVA035W	% Moisture :	NA
Calib. Ref.:	RLL004	Instrument ID :	T-OE9

PARAMETERS	RESULTS (ug/L)	LOQ (ug/L)	DL (ug/L)	LOD (ug/L)
ACENAPHTHENE	ND	0.021	0.0052	0.010
ACENAPHTHYLENE	ND	0.021	0.0052	0.010
ANTHRACENE	ND	0.021	0.0052	0.010
BENZO(A)ANTHRACENE	ND	0.021	0.0052	0.010
BENZO(A)PYRENE	ND	0.021	0.0052	0.010
BENZO(B)FLUORANTHENE	ND	0.021	0.0052	0.010
BENZO(K)FLUORANTHENE	ND	0.021	0.0052	0.010
BENZO(G,H,I)PERYLENE	ND	0.021	0.0052	0.010
CHRYSENE	ND	0.021	0.0052	0.010
DIBENZO(A,H)ANTHRACENE	ND	0.021	0.0052	0.010
FLUORANTHENE	ND	0.021	0.0052	0.010
FLUORENE	ND	0.021	0.0052	0.010
INDENO(1,2,3-CD)PYRENE	ND	0.021	0.0052	0.010
NAPHTHALENE	ND	0.10	0.026	0.052
PHENANTHRENE	ND	0.021	0.0052	0.010
PYRENE	ND	0.021	0.0052	0.010
2-METHYLNAPHTHALENE	ND	0.021	0.0052	0.010
1-METHYLNAPHTHALENE	ND	0.021	0.0052	0.010

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TERPHENYL-D14	0.465	0.5150	90.3	50-135

Quantitation Report (QT Reviewed)

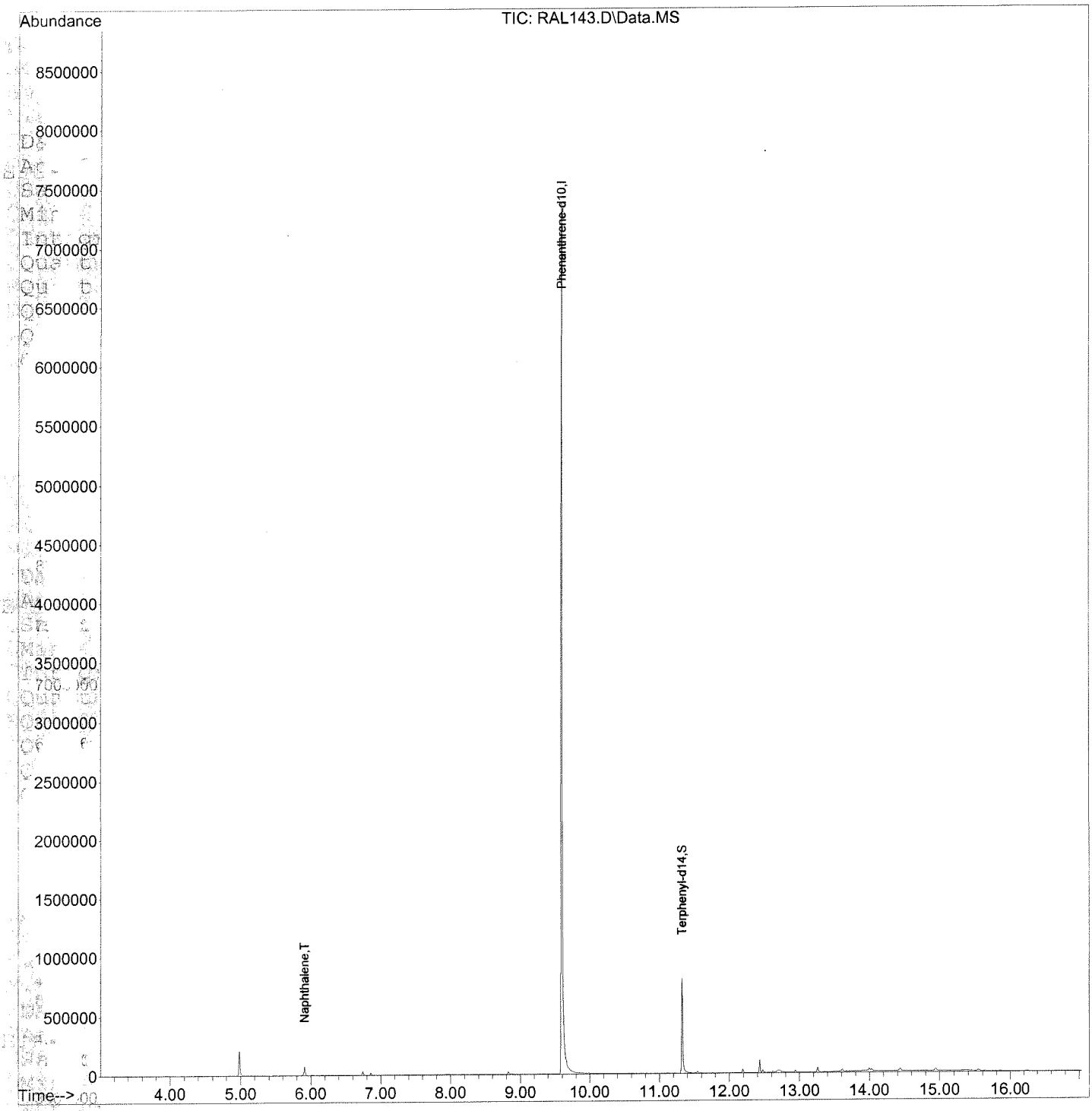
Data File : C:\msdchem\1\DATA\15A30\RAL143.D
Vial: 11
Acq On : 30 Jan 2015 14:32
Operator: KVu
Sample : 15A141-03
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 15:22:29 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:47 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

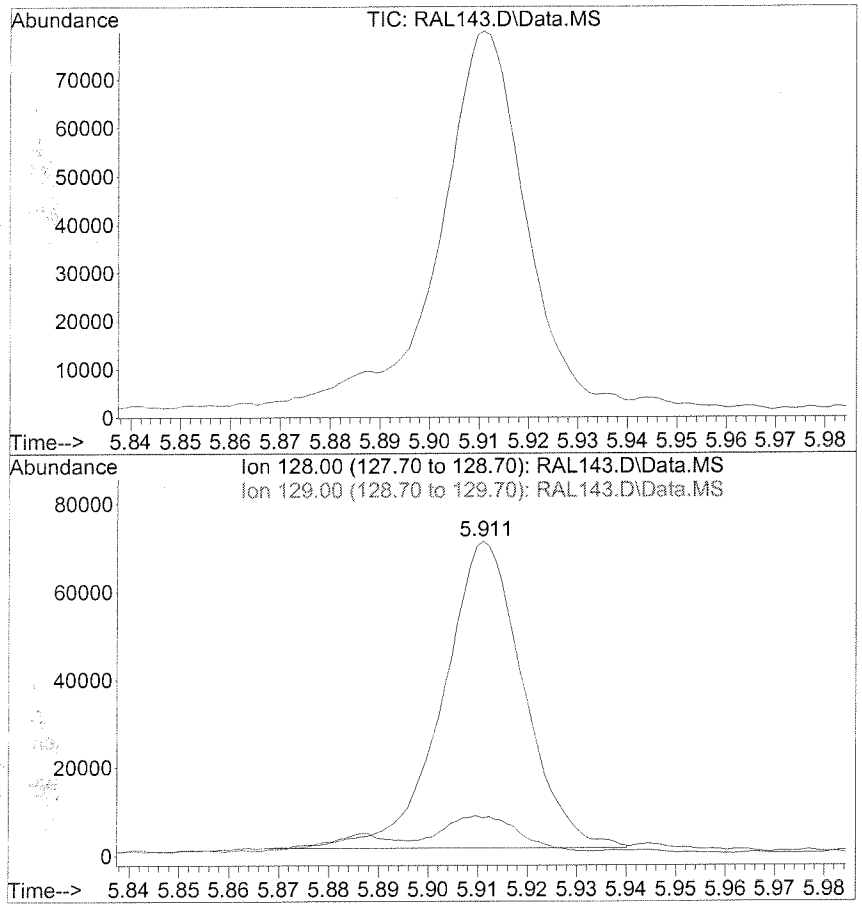
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.596	188	7027975	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.324	244	803059	451.50 ppb	0.00
Spiked Amount 500.000			Recovery	= 90.30%	
Target Compounds					Qvalue
2) Naphthalene	5.911	128	78968	14.51 ppb	98

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL143.D
Vial: 11
Acq On : 30 Jan 2015 14:32
Operator: KVu
Sample : 15A141-03
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 15:22:29 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:47 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M





#2
Naphthalene
Concen: 14.51 ppb
RT: 5.911 min Scan# 2298
Delta R.T. -0.007 min
Lab File: RAL143.D
Acq: 30 Jan 2015 14:32

Tgt Ion:128 Resp: 78968

Ion	Ratio	Lower	Upper
128	100		
129	10.5	0.0	41.2

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:	01/28/15
Batch No.	: 15A141	Date Extracted:	01/28/15 10:15
Sample ID:	MBLK1W	Date Analyzed:	01/30/15 13:21
Lab Samp ID:	SVA035WB	Dilution Factor:	1
Lab File ID:	RAL140	Matrix :	WATER
Ext Btch ID:	SVA035W	% Moisture :	NA
Calib. Ref.:	RLL004	Instrument ID :	T-OE9

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	0.356	0.5000	71.1	50-135

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 15A141
METHOD: SW3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVA035WB	SVA035WL	SVA035WC		
LAB FILE ID:	RAL140	RAL136	RAL137		
DATE EXTRACTED:	01/28/1510:15	01/28/1510:15	01/28/1510:15	DATE COLLECTED:	NA
DATE ANALYZED:	01/30/1513:21	01/30/1511:52	01/30/1512:10	DATE RECEIVED:	01/28/15
PREP. BATCH:	SVA035W	SVA035W	SVA035W		
CALIB. REF:	RLL004	RLL004	RLL004		

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	0.306	61	0.500	0.318	64	4	45-110	30
Acenaphthylene	ND	0.500	0.307	61	0.500	0.321	64	4	50-105	30
Anthracene	ND	0.500	0.298	60	0.500	0.310	62	4	55-110	30
Benzo(a)anthracene	ND	0.500	0.363	73	0.500	0.478	96	27	55-110	30
Benzo(a)pyrene	ND	0.500	0.346	69	0.500	0.485	97	33*	55-110	30
Benzo(b)fluoranthene	ND	0.500	0.358	72	0.500	0.484	97	30	45-120	30
Benzo(k)fluoranthene	ND	0.500	0.354	71	0.500	0.488	98	32*	45-125	30
Benzo(g,h,i)perylene	ND	0.500	0.325	65	0.500	0.471	94	37*	40-125	30
Chrysene	ND	0.500	0.371	74	0.500	0.500	100	30	55-110	30
Dibenzo(a,h)anthracene	ND	0.500	0.356	71	0.500	0.518	104	37*	40-125	30
Fluoranthene	ND	0.500	0.346	69	0.500	0.425	85	20	55-115	30
Fluorene	ND	0.500	0.293	59	0.500	0.316	63	7	50-110	30
Indeno(1,2,3-cd)pyrene	ND	0.500	0.336	67	0.500	0.476	95	35*	45-125	30
Naphthalene	ND	0.500	0.327	65	0.500	0.333	67	2	40-100	30
Phenanthrene	ND	0.500	0.296	59	0.500	0.302	60	2	50-115	30
Pyrene	ND	0.500	0.340	68	0.500	0.416	83	20	50-130	30
2-Methylnaphthalene	ND	0.500	0.295	59	0.500	0.305	61	3	45-105	30
1-Methylnaphthalene	ND	0.500	0.307	61	0.500	0.321	64	4	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	0.357	71	0.500	0.472	94	50-135

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 15A141
METHOD: SW3520C/8270C SIM

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1.03	1.03	1.12		
SAMPLE ID:	RHMW06-GW-02				
LAB SAMP ID:	A141-03	A141-03M	A141-03S		
LAB FILE ID:	RAL143	RAL138	RAL139		
DATE EXTRACTED:	01/28/1510:15	01/28/1510:15	01/28/1510:15	DATE COLLECTED:	01/23/15
DATE ANALYZED:	01/30/1514:32	01/30/1512:34	01/30/1512:57	DATE RECEIVED:	01/24/15
PREP. BATCH:	SVA035W	SVA035W	SVA035W		
CALIB. REF:	RLL004	RLL004	RLL004		

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	0.515	0.315	61	0.560	0.294	52	16	45-110	30
Acenaphthylene	ND	0.515	0.315	61	0.560	0.298	53	14	50-105	30
Anthracene	ND	0.515	0.307	60	0.560	0.330	59	2	55-110	30
Benzo(a)anthracene	ND	0.515	0.451	88	0.560	0.514	92	4	55-110	30
Benzo(a)pyrene	ND	0.515	0.445	86	0.560	0.529	94	9	55-110	30
Benzo(b)fluoranthene	ND	0.515	0.457	89	0.560	0.543	97	9	45-120	30
Benzo(k)fluoranthene	ND	0.515	0.473	92	0.560	0.543	97	5	45-125	30
Benzo(g,h,i)perylene	ND	0.515	0.428	83	0.560	0.491	88	6	40-125	30
Chrysene	ND	0.515	0.473	92	0.560	0.544	97	5	55-110	30
Dibenzo(a,h)anthracene	ND	0.515	0.473	92	0.560	0.554	99	7	40-125	30
Fluoranthene	ND	0.515	0.376	73	0.560	0.376	67	9	55-115	30
Fluorene	ND	0.515	0.302	59	0.560	0.284	51	15	50-110	30
Indeno(1,2,3-cd)pyrene	ND	0.515	0.442	86	0.560	0.507	91	6	45-125	30
Naphthalene	ND	0.515	0.341	66	0.560	0.325	58	13	40-100	30
Phenanthrene	ND	0.515	0.298	58	0.560	0.287	51	13	50-115	30
Pyrene	ND	0.515	0.374	73	0.560	0.376	67	9	50-130	30
2-Methylnaphthalene	ND	0.515	0.305	59	0.560	0.282	50	17	45-105	30
1-Methylnaphthalene	ND	0.515	0.320	62	0.560	0.296	53	16	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	0.515	0.431	84	0.560	0.475	85	50-135

QC DATA

Quantitation Report (QT Reviewed)

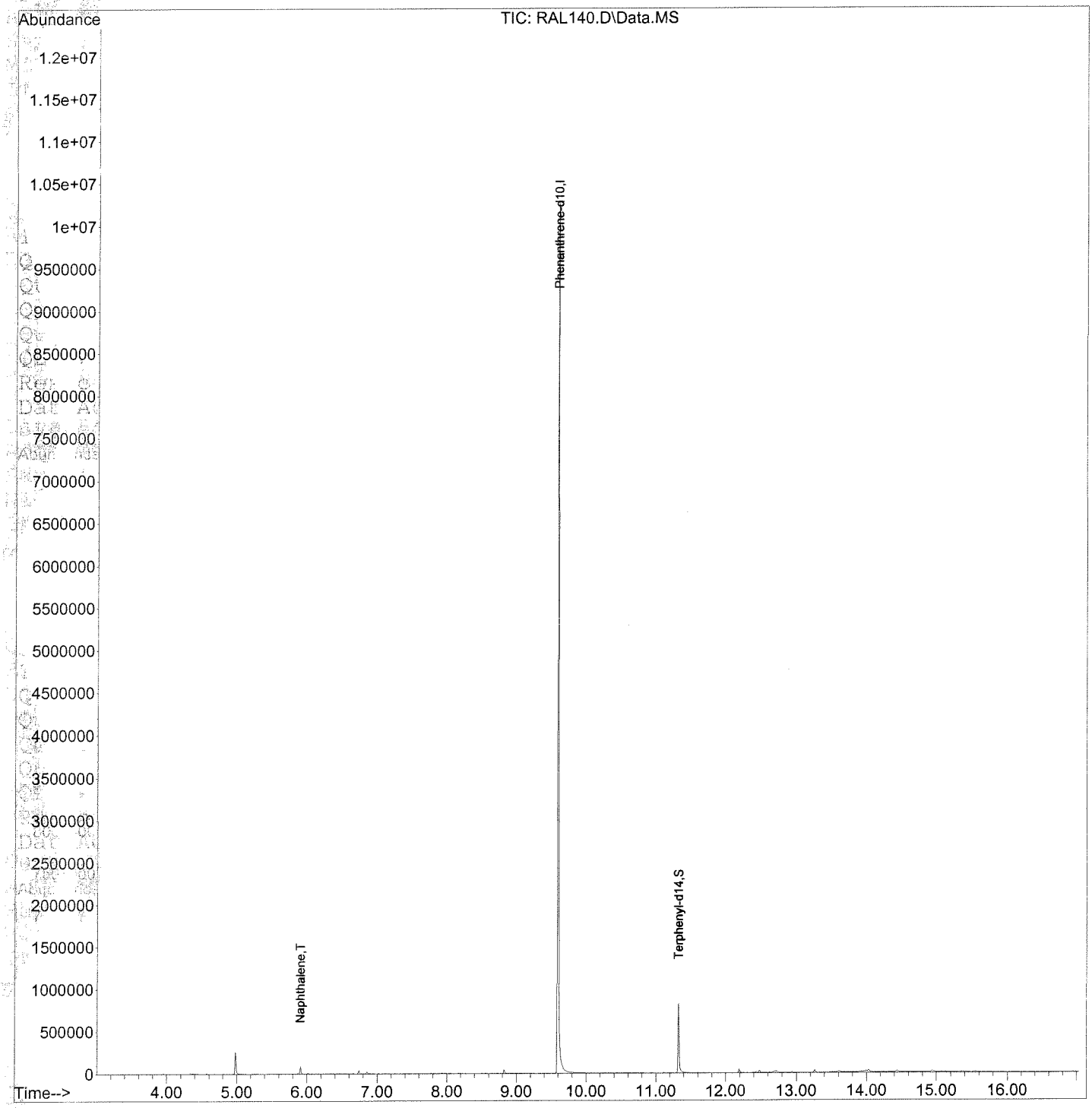
Data File : C:\msdchem\1\DATA\15A30\RAL140.D Vial: 8
Acq On : 30 Jan 2015 13:21 Operator: KVu
Sample : SVA035WB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 13:48:34 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

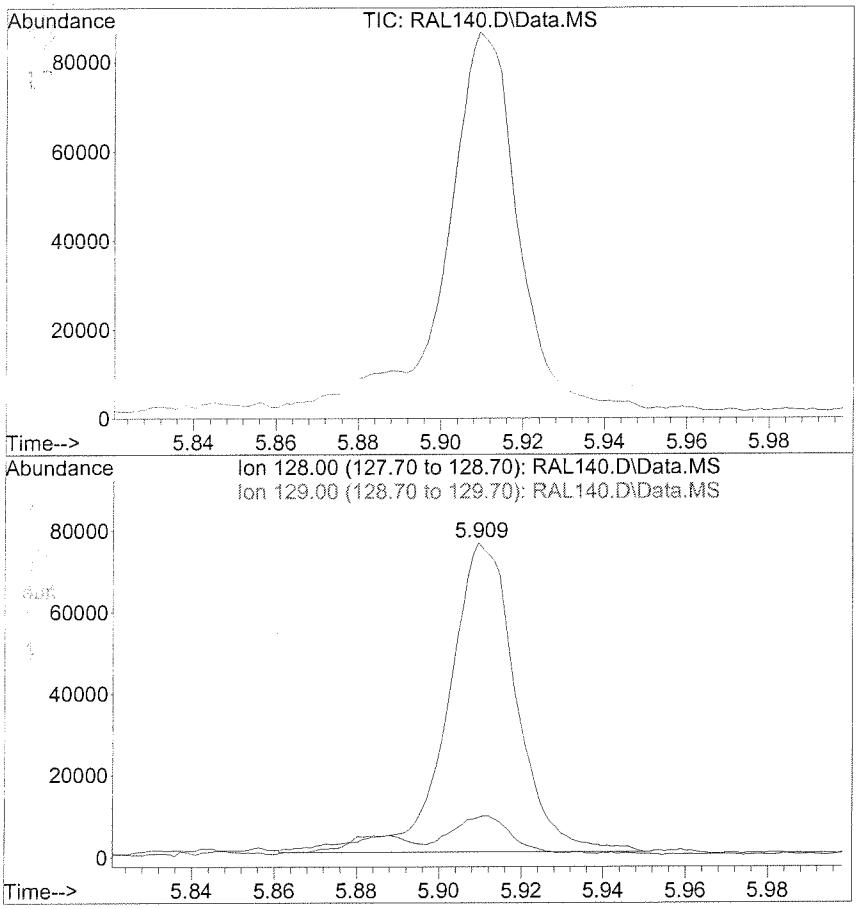
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.593	188	8811620	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.324	244	792928	355.57 ppb	0.00
Spiked Amount 500.000			Recovery	= 71.11%	
Target Compounds					Qvalue
2) Naphthalene	5.909	128	88529	12.98 ppb	97

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL140.D
Vial: 8
Acq On : 30 Jan 2015 13:21
Operator: KVu
Sample : SVA035WB
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 13:48:34 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M





#2
Naphthalene
Concen: 12.98 ppb
RT: 5.909 min Scan# 2297
Delta R.T. -0.009 min
Lab File: RAL140.D
Acq: 30 Jan 2015 13:21

Tgt Ion:128 Resp: 88529

Ion	Ratio	Lower	Upper
128	100		
129	10.0	0.0	41.2

Quantitation Report (QT Reviewed)

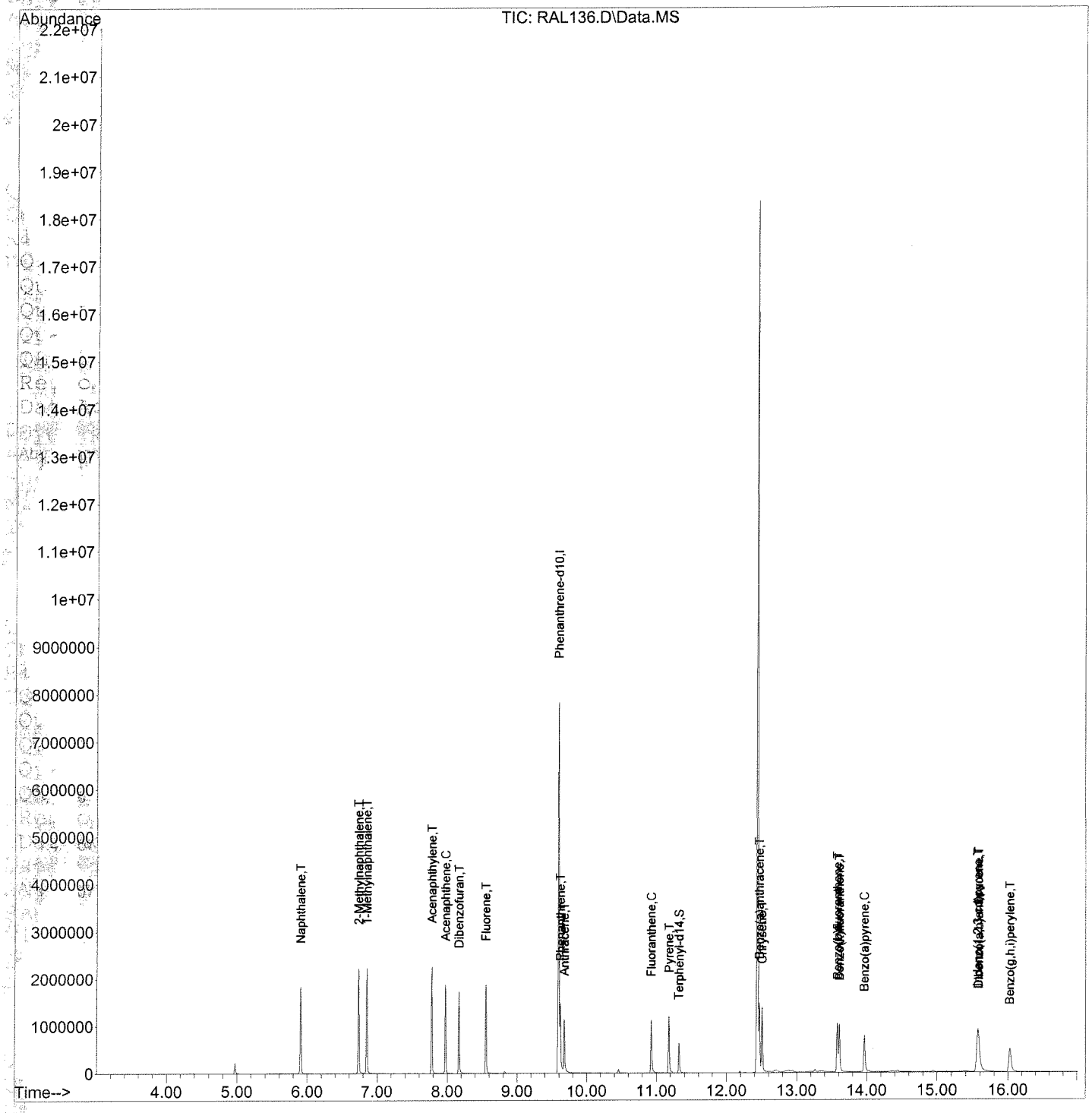
Data File : C:\msdchem\1\DATA\15A30\RAL136.D
Vial: 4
Acq On : 30 Jan 2015 11:52
Operator: KVu
Sample : SVA035WL
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 15:57:43 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Phenanthrene-d10	9.594	188	6423996	2000.00 ppb		0.00
System Monitoring Compounds						
13) Terphenyl-d14	11.322	244	581069	357.41 ppb		0.00
Spiked Amount 500.000			Recovery	= 71.48%		
Target Compounds						Qvalue
2) Naphthalene	5.907	128	1628333	327.37 ppb		99
3) 2-Methylnaphthalene	6.734	142	1159601	295.14 ppb		97
4) 1-Methylnaphthalene	6.852	142	1108072	306.71 ppb		97
5) Acenaphthylene	7.778	152	1547322	307.02 ppb		98
6) Acenaphthene	7.973	153	1020961	305.54 ppb		100
7) Dibenzofuran	8.167	168	1153279	289.70 ppb		91
8) Fluorene	8.553	166	927785	293.20 ppb		96
9) Phenanthrene	9.621	178	1120459	296.41 ppb		94
10) Anthracene	9.677	178	1105202	297.71 ppb		96
11) Fluoranthene	10.925	202	991103	345.73 ppb		97
12) Pyrene	11.179	202	1032322	340.12 ppb		98
14) Benzo(a)anthracene	12.466	228	1313732	363.26 ppb	#	56
15) Chrysene	12.505	228	1251559	370.84 ppb	#	52
16) Benzo(b)fluoranthene	13.578	252	1010375	358.34 ppb		98
17) Benzo(k)fluoranthene	13.608	252	1060425	354.42 ppb		99
18) Benzo(a)pyrene	13.964	252	915312	345.99 ppb		97
19) Indeno(1,2,3-cd)pyrene	15.566	276	944315	335.97 ppb		97
20) Dibenzo(a,h)anthracene	15.578	278	763627	356.23 ppb		97
21) Benzo(g,h,i)perylene	16.028	276	785378	324.93 ppb		99

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL136.D
Vial: 4
Acq On : 30 Jan 2015 11:52
Operator: KVu
Sample : SVA035WL
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 15:57:43 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

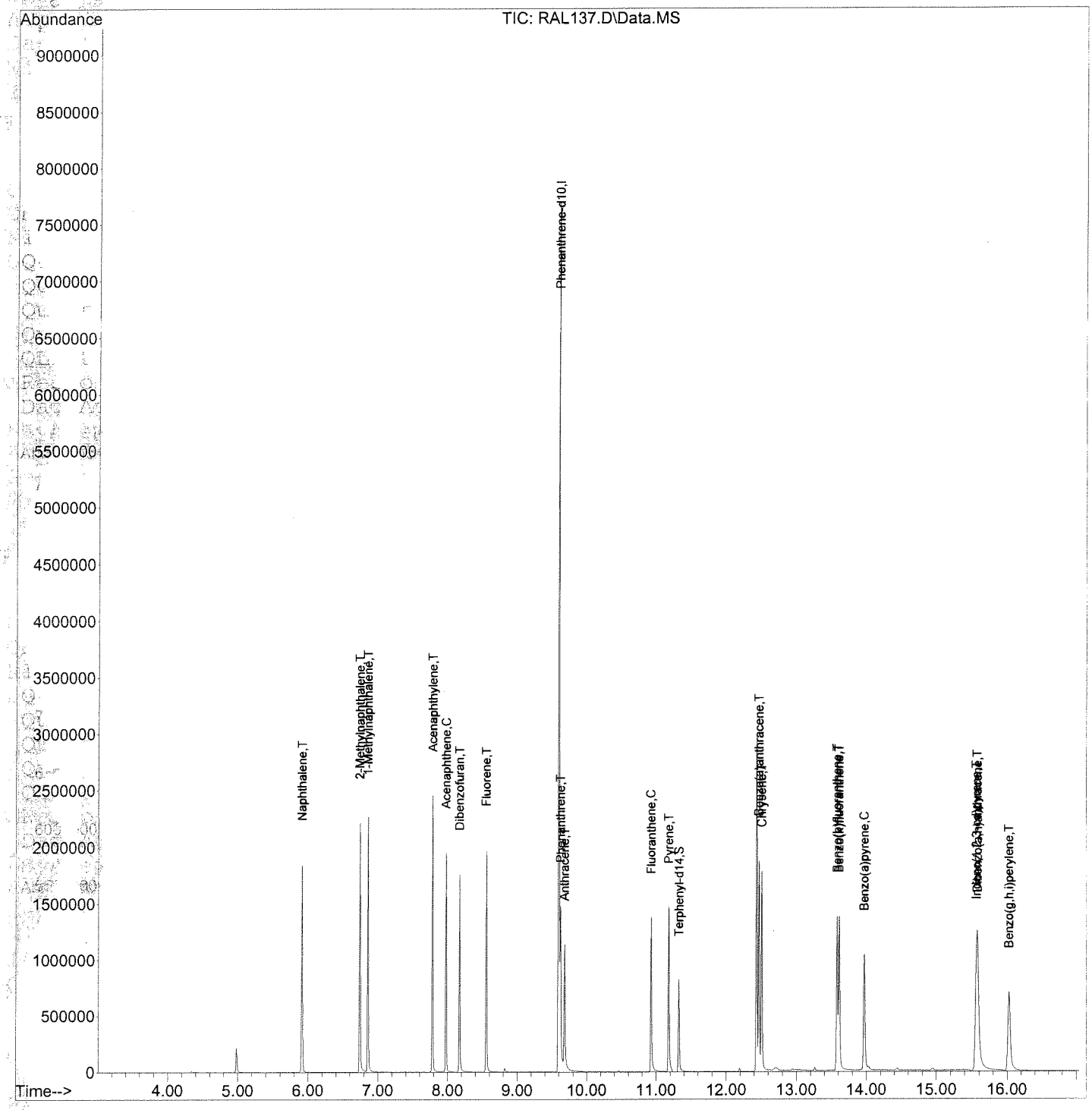
Data File : C:\msdchem\1\DATA\15A30\RAL137.D Vial: 5
Acq On : 30 Jan 2015 12:10 Operator: KVu
Sample : SVA035WC Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 12:52:40 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Phenanthrene-d10	9.596	188	6395837	2000.00	ppb	0.00
System Monitoring Compounds						
13) Terphenyl-d14	11.324	244	763863	471.91	ppb	0.00
Spiked Amount 500.000			Recovery	=	94.38%	
Target Compounds						Qvalue
2) Naphthalene	5.912	128	1649972	333.18	ppb	99
3) 2-Methylnaphthalene	6.739	142	1193564	305.13	ppb	95
4) 1-Methylnaphthalene	6.854	142	1153814	320.78	ppb	96
5) Acenaphthylene	7.782	152	1608490	320.56	ppb	97
6) Acenaphthene	7.976	153	1059371	318.43	ppb	100
7) Dibenzofuran	8.169	168	1219298	307.64	ppb	92
8) Fluorene	8.555	166	993982	315.50	ppb	96
9) Phenanthrene	9.621	178	1135415	301.69	ppb	94
10) Anthracene	9.679	178	1147233	310.40	ppb	98
11) Fluoranthene	10.927	202	1211930	424.63	ppb	94
12) Pyrene	11.179	202	1256651	415.85	ppb	95
14) Benzo(a)anthracene	12.466	228	1722619	478.42	ppb	93
15) Chrysene	12.504	228	1680846	500.24	ppb	91
16) Benzo(b)fluoranthene	13.579	252	1358266	483.84	ppb	95
17) Benzo(k)fluoranthene	13.609	252	1454733	488.35	ppb	94
18) Benzo(a)pyrene	13.965	252	1276617	484.68	ppb	95
19) Indeno(1,2,3-cd)pyrene	15.562	276	1332207	476.06	ppb	97
20) Dibenzo(a,h)anthracene	15.577	278	1105946	518.19	ppb	91
21) Benzo(g,h,i)perylene	16.024	276	1134594	471.47	ppb	94

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL137.D
Vial: 5
Acq On : 30 Jan 2015 12:10
Operator: KVu
Sample : SVA035WC
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 12:52:40 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

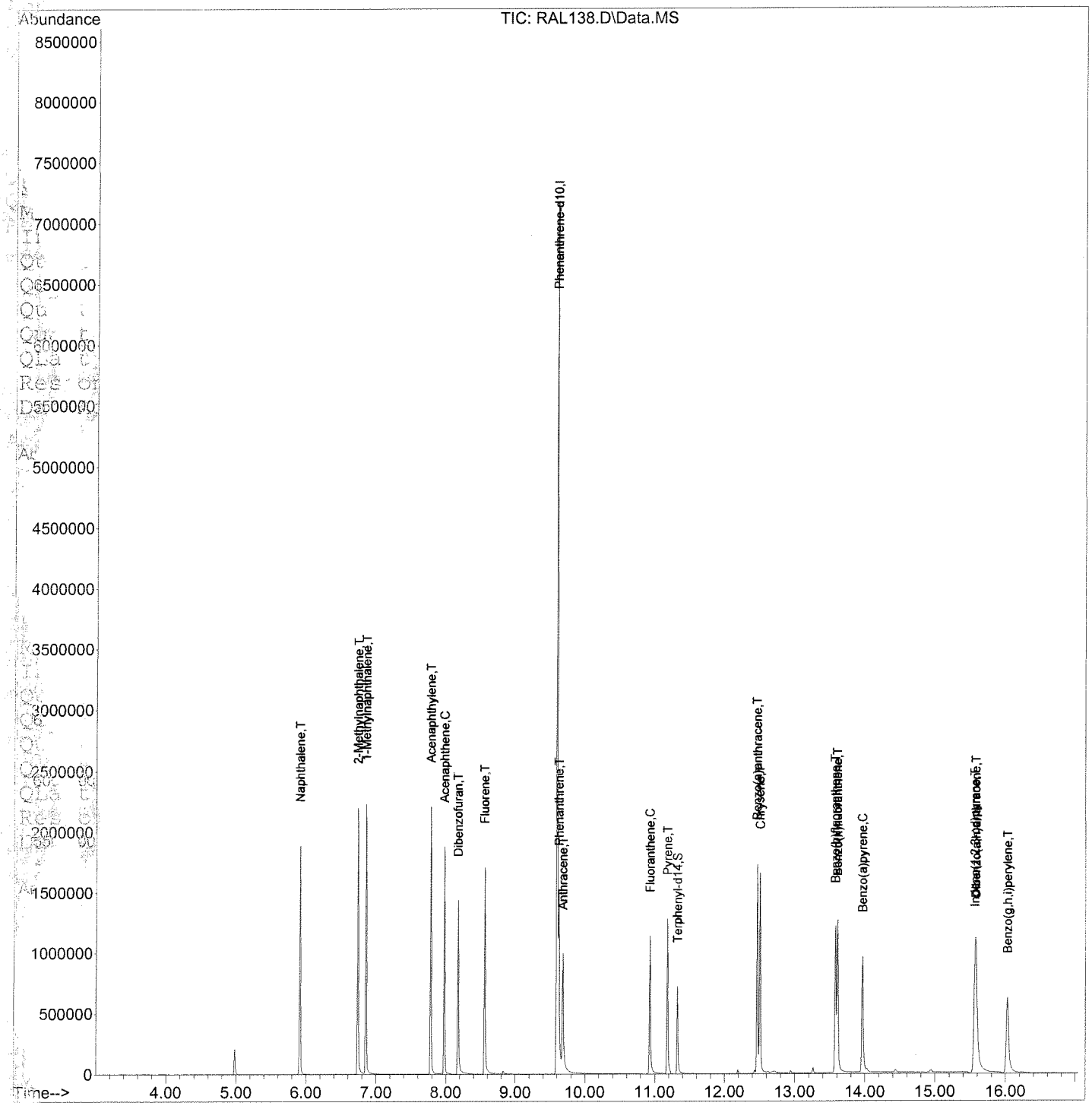
Data File : C:\msdchem\1\DATA\15A30\RAL138.D
Vial: 6
Acq On : 30 Jan 2015 12:34
Operator: KVu
Sample : 15A141-03M
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 12:59:13 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.596	188	6517273	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.324	244	690715	418.77 ppb	0.00
Spiked Amount 500.000			Recovery	= 83.75%	
Target Compounds					Qvalue
2) Naphthalene	5.912	128	1670043	330.95 ppb	100
3) 2-Methylnaphthalene	6.739	142	1179706	295.96 ppb	96
4) 1-Methylnaphthalene	6.856	142	1138635	310.66 ppb	95
5) Acenaphthylene	7.782	152	1565139	306.11 ppb	97
6) Acenaphthene	7.978	153	1036892	305.87 ppb	100
7) Dibenzofuran	8.172	168	1159169	287.02 ppb	93
8) Fluorene	8.558	166	942308	293.53 ppb	96
9) Phenanthrene	9.623	178	1109290	289.25 ppb	95
10) Anthracene	9.681	178	1121778	297.85 ppb	96
11) Fluoranthene	10.929	202	1061384	364.95 ppb	96
12) Pyrene	11.181	202	1117547	362.93 ppb	95
14) Benzo(a)anthracene	12.468	228	1605268	437.52 ppb	93
15) Chrysene	12.507	228	1573322	459.51 ppb	91
16) Benzo(b)fluoranthene	13.578	252	1268671	443.50 ppb	95
17) Benzo(k)fluoranthene	13.610	252	1394316	459.34 ppb	94
18) Benzo(a)pyrene	13.966	252	1160686	432.46 ppb	99
19) Indeno(1,2,3-cd)pyrene	15.563	276	1224023	429.25 ppb	97
20) Dibenzo(a,h)anthracene	15.578	278	997722	458.77 ppb	91
21) Benzo(g,h,i)perylene	16.027	276	1019118	415.59 ppb	93

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL138.D
Vial: 6
Acq On : 30 Jan 2015 12:34
Operator: KVu
Sample : 15A141-03M
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 12:59:13 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL139.D
Vial: 7
Acq On : 30 Jan 2015 12:57
Operator: KVu
Sample : 15A141-03S
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 15:51:42 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

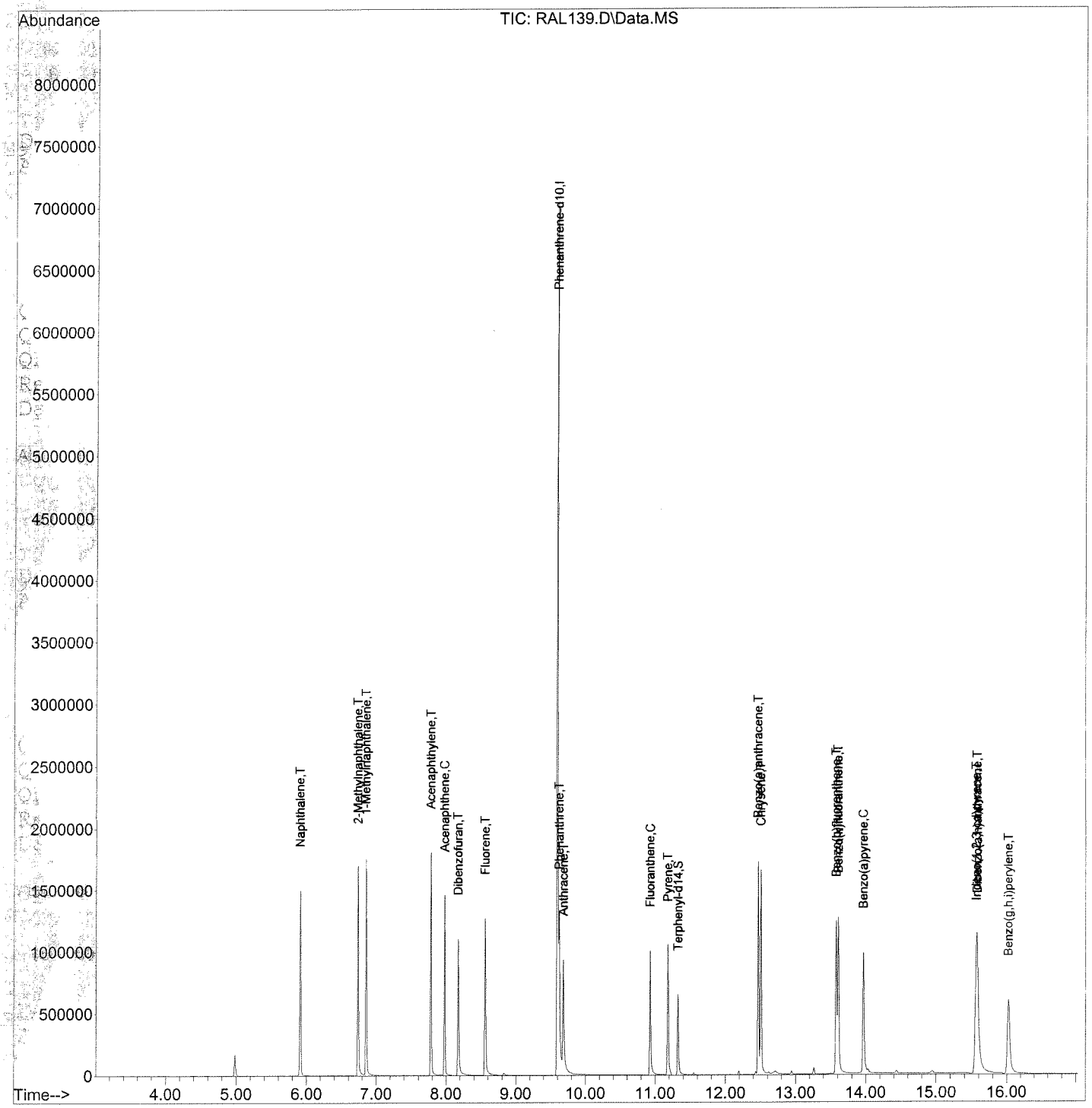
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.596	188	6083234	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.324	244	653305	424.35 ppb	0.00
Spiked Amount 500.000			Recovery	= 84.87%	
Target Compounds					Qvalue
2) Naphthalene	5.912	128	1368799	290.61 ppb	99
3) 2-Methylnaphthalene	6.739	142	938045	252.13 ppb	96
4) 1-Methylnaphthalene	6.856	142	905440	264.66 ppb	95
5) Acenaphthylene	7.782	152	1270426	266.20 ppb	98
6) Acenaphthene	7.978	153	829879	262.27 ppb	99
7) Dibenzofuran	8.172	168	937423	248.67 ppb	96
8) Fluorene	8.558	166	758571	253.15 ppb	96
9) Phenanthrene	9.623	178	918178	256.50 ppb	98
10) Anthracene	9.681	178	1036331	294.80 ppb	96
11) Fluoranthene	10.927	202	911806	335.89 ppb	96
12) Pyrene	11.179	202	964409	335.54 ppb	95
14) Benzo(a)anthracene	12.468	228	1572573	459.19 ppb	93
15) Chrysene	12.507	228	1553257	486.02 ppb	91
16) Benzo(b)fluoranthene	13.578	252	1293844	484.57 ppb	94
17) Benzo(k)fluoranthene	13.608	252	1374032	484.96 ppb	94
18) Benzo(a)pyrene	13.964	252	1183063	472.24 ppb	97
19) Indeno(1,2,3-cd)pyrene	15.563	276	1205755	453.02 ppb	97
20) Dibenzo(a,h)anthracene	15.576	278	1004950	495.06 ppb	91
21) Benzo(g,h,i)perylene	16.023	276	1004005	438.64 ppb	95

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL139.D
Acq On : 30 Jan 2015 12:57
Sample : 15A141-03S
Misc : E9
Integrator: RTE
Quant Time: Jan 30 15:51:42 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 7
Operator: KVu
Inst : DSQ
Multiplr: 1.00



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RLL002
Instrument ID: TOE9

Project: RED HILL PHASE 1B
SDG No.: 15A141
DFTPP Injection Date: 12/10/14
DFTPP Injection Time: 10:58

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	36.89
68	Less than 2% of mass 69	0.23(1.5)1
69	Relative abundance of mass 198	15.32
70	Less than 2.0% of mass 69	0.04(0.2)1
127	40.0 - 60.0% of mass 198	40.63
197	Less than 1.0% of mass 198	0.60
198	Base Peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.48
275	10.0 - 30.0% of mass 198	17.84
365	Greater than 1.00% of mass 198	1.01
441	Present, but less than mass 443	12.36(93.2)3
442	Greater than 40.0% of mass 198	68.32
443	17.0 - 23.0% of mass 442	13.26(19.4)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	SVE9L101	RLL003	12/10/14	15:43
2	SSTD500	SVE9L102	RLL004	12/10/14	16:02
3	SSTD100	SVE9L103	RLL005	12/10/14	16:25
4	SSTD050	SVE9L104	RLL006	12/10/14	16:48
5	SSTD040	SVE9L105	RLL007	12/10/14	17:11
6	SSTD020	SVE9L106	RLL008	12/10/14	17:34

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RLL004
Instrument ID: TOE9

Project:ICAL
SDG No.:ICAL
Date AnalyzeZd: 12/10/14
Time Analyzed: 16:02

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	6944856	9.60	0	0.00	0	0.00
	UPPER LIMIT	13889712	10.10	0	0.50	0	0.50
	LOWER LIMIT	3472428	9.10	0	-0.50	0	-0.50
	SAMPLE ID						
1	SVFOE081	6288406	9.60	0	0.00	0	0.00
2	SVFOE083	5870793	9.60	0	0.00	0	0.00
3	SVFOE084	7276903	9.60	0	0.00	0	0.00
4	SVFOE085	6463648	9.60	0	0.00	0	0.00
5	SVFOE086	6074861	9.60	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

12/18/14

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :E9 Column Spec :ZB-SEMI ID :0.25MM
Beginning DateTime :12/10/14 15:43 Ending DateTime :12/10/14 17:34
IC File :RLL004 HPChem Method :SVE9L10

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	RLL008
3	2-Methylnaphthalene	20	.02	.6667	RLL008
4	1-Methylnaphthalene	20	.02	.6667	RLL008
5	Acenaphthylene	20	.02	.6667	RLL008
6	Acenaphthene	20	.02	.6667	RLL008
7	Dibenzofuran	20	.02	.6667	RLL008
8	Fluorene	20	.02	.6667	RLL008
9	Phenanthrene	20	.02	.6667	RLL008
10	Anthracene	20	.02	.6667	RLL008
11	Fluoranthene	20	.02	.6667	RLL008
12	Pyrene	20	.02	.6667	RLL008
13	Terphenyl-d14	20	.02	.6667	RLL008
14	Benzo(a)anthracene	20	.02	.6667	RLL008
15	Chrysene	20	.02	.6667	RLL008
16	Benzo(b)fluoranthene	20	.02	.6667	RLL008
17	Benzo(k)fluoranthene	20	.02	.6667	RLL008
18	Benzo(a)pyrene	20	.02	.6667	RLL008
19	Indeno(1,2,3-cd)pyrene	20	.02	.6667	RLL008
20	Dibenzo(a,h)anthracene	20	.02	.6667	RLL008
21	Benzo(g,h,i)perylene	20	.02	.6667	RLL008

pu
12/18/14

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :E9
Beginning DateTime :12/10/14 15:43
Spike Units :PPB
IC File :RLL004

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :12/10/14 17:34
HPChem Method :SVE9L10

IDX	Parameters	20 17:34 RLL008	40 17:11 RLL007	80 16:48 RLL006	100 16:25 RLL005	500 16:02 RLL004	1000 15:43 RLL003	Av_RRF	%_RSD	Av_Rt_M
1	Phenanthrene-d10	1	1	1	1	1	1	1	0	9.6001
2	Naphthalene	1.595	1.527	1.365	1.683	1.448	1.672	1.549	8.15	5.9182
3	2-Methylnaphthalene	1.207	1.205	1.069	1.323	1.179	1.356	1.223	8.46	6.7445
4	1-Methylnaphthalene	1.125	1.105	0.986	1.221	1.075	1.238	1.125	8.35	6.8606
5	Acenaphthylene	1.572	1.506	1.359	1.715	1.509	1.754	1.569	9.34	7.7866
6	Acenaphthene	1.060	1.018	0.919	1.136	0.991	1.118	1.040	7.81	7.9816
7	Dibenzofuran	1.230	1.209	1.080	1.359	1.199	1.359	1.239	8.59	8.1758
8	Fluorene	0.978	0.964	0.860	1.086	0.950	1.072	0.985	8.52	8.5611
9	Phenanthrene	1.202	1.192	1.027	1.322	1.122	1.198	1.177	8.30	9.6270
10	Anthracene	1.159	1.116	1.019	1.291	1.129	1.221	1.156	8.07	9.6839
11	Fluoranthene	0.993	0.835	0.763	0.998	0.848	0.918	0.892	10.52	10.9326
12	Pyrene	1.046	0.883	0.804	1.058	0.904	0.974	0.945	10.52	11.1841
13	Terphenyl-d14	0.551	0.460	0.426	0.565	0.495	0.540	0.506	10.93	11.3304
14	Benzo(a)anthracene	1.397	1.065	0.911	1.213	1.031	1.139	1.126	14.87	12.4720
15	Chrysene	1.207	1.006	0.883	1.166	0.971	1.072	1.051	11.62	12.5108
16	Benzo(b)fluoranthene	0.928	0.796	0.712	0.977	0.883	0.971	0.878	11.97	13.5824
17	Benzo(k)fluoranthene	0.947	0.884	0.779	1.031	0.901	1.048	0.932	10.74	13.6127
18	Benzo(a)pyrene	0.861	0.744	0.659	0.904	0.838	0.936	0.824	12.62	13.9701
19	Indeno(1,2,3-cd)pyrene	0.883	0.793	0.688	0.951	0.899	1.037	0.875	13.95	15.5675
20	Dibenzo(a,h)anthracene	0.676	0.598	0.514	0.729	0.706	0.781	0.667	14.49	15.5813
21	Benzo(g,h,i)perylene	0.793	0.669	0.598	0.826	0.760	0.868	0.753	13.47	16.0295

Ave_%RSD : 10.6 Max_%RSD : 14.9

JW 12-15-14

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :E9
Beginning DateTime :12/10/14 15:43
Spike Units :PPB
IC File :RLL004

Column Spec :ZB-SEMI ID :0.25MM
Ending DateTime :12/10/14 17:34
HPChem Method :SVE9L10

IDX	Parameters	20 17:34 RLL008	40 17:11 RLL007	80 16:48 RLL006	100 16:25 RLL005	500 16:02 RLL004	1000 15:43 RLL003	AvDRec	%_RSD	Av_Rt_M
1	Phenanthrene-d10	1	1	1	1	1	1	1	0	9.6001
2	Naphthalene	103	99	88	109	93	108	6.6	8.15	5.9182
3	2-Methylnaphthalene	99	99	87	108	96	111	6.3	8.46	6.7445
4	1-Methylnaphthalene	100	98	88	109	96	110	6.2	8.35	6.8606
5	Acenaphthylene	100	96	87	109	96	112	7.1	9.34	7.7866
6	Acenaphthene	102	98	88	109	95	108	6.2	7.81	7.9816
7	Dibenzofuran	99	98	87	110	97	110	6.4	8.59	8.1758
8	Fluorene	99	98	87	110	96	109	6.4	8.52	8.5611
9	Phenanthrene	102	101	87	112	95	102	5.8	8.30	9.6270
10	Anthracene	100	97	88	112	98	106	5.9	8.07	9.6839
11	Fluoranthene	111	94	86	112	95	103	8.7	10.52	10.9326
12	Pyrene	111	93	85	112	96	103	8.6	10.52	11.1841
13	Terphenyl-d14	109	91	84	112	98	107	9.1	10.93	11.3304
14	Benzo(a)anthracene	124	95	81	108	92	101	11	14.87	12.4720
15	Chrysene	115	96	84	111	92	102	9.3	11.62	12.5108
16	Benzo(b)fluoranthene	106	91	81	111	101	111	9.4	11.97	13.5824
17	Benzo(k)fluoranthene	102	95	84	111	97	112	8.3	10.74	13.6127
18	Benzo(a)pyrene	104	90	80	110	102	114	9.9	12.62	13.9701
19	Indeno(1,2,3-cd)pyrene	101	91	79	109	103	119	10.3	13.95	15.5675
20	Dibenzo(a,h)anthracene	101	90	77	109	106	117	11.1	14.49	15.5813
21	Benzo(g,h,i)perylene	105	89	79	110	101	115	10.5	13.47	16.0295

✓

JU 12/19/14

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVE9L10.M
Title : SEMIVOLATILES - SIM
Last Update : Wed Dec 10 18:52:46 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	9.601	1.000	A	1	A	B
2	T	Naphthalene	128	5.918	0.616	A	1	A	B
3	T	2-Methylnaphthalene	142	6.745	0.703	A	1	A	B
4	T	1-Methylnaphthalene	142	6.861	0.715	A	1	A	B
5	T	Acenaphthylene	152	7.788	0.811	A	1	A	B
6	C	Acenaphthene	153	7.982	0.831	A	1	A	B
7	T	Dibenzofuran	168	8.176	0.852	A	1	A	B
8	T	Fluorene	166	8.562	0.892	A	1	A	B
9	T	Phenanthrene	178	9.628	1.003	A	1	A	B
10	T	Anthracene	178	9.684	1.009	A	1	A	B
11	C	Fluoranthene	202	10.932	1.139	A	1	A	B
12	T	Pyrene	202	11.184	1.165	A	1	A	B
13	S	Terphenyl-d14	244	11.329	1.180	A	1	A	B
14	T	Benzo(a)anthracene	228	12.473	1.299	A	1	A	B
15	T	Chrysene	228	12.511	1.303	A	1	A	B
16	T	Benzo(b)fluoranthene	252	13.582	1.415	A	1	A	B
17	T	Benzo(k)fluoranthene	252	13.612	1.418	A	1	A	B
18	C	Benzo(a)pyrene	252	13.971	1.455	A	1	A	B
19	T	Indeno(1,2,3-cd)pyrene	276	15.563	1.621	A	1	A	B
20	T	Dibenzo(a,h)anthracene	278	15.575	1.622	A	1	A	B
21	T	Benzo(g,h,i)perylene	276	16.027	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

SVE9L10.M Thu Dec 11 09:50:31 2014 E9

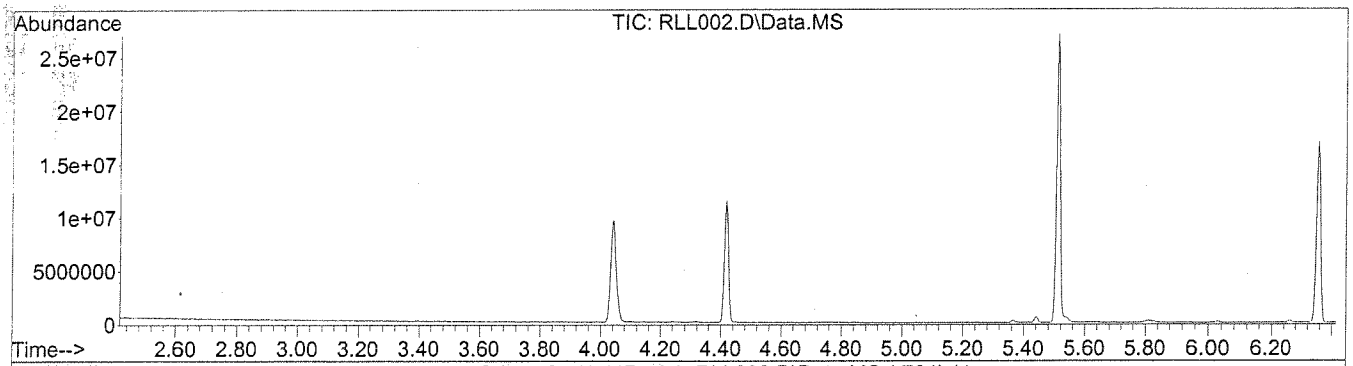
pu 12/19/14

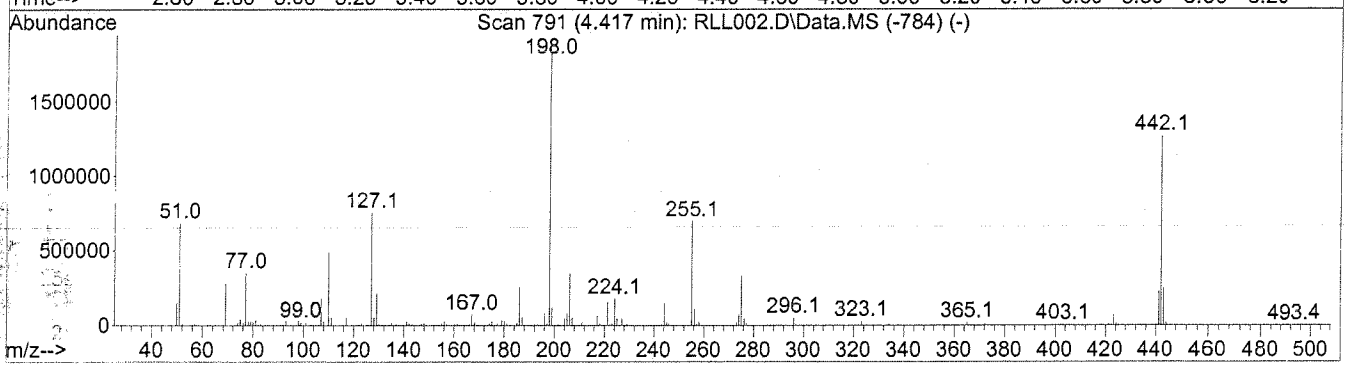
DFTPP

Data Path : C:\msdchem\1\DATA\14L10\
Data File : RLL002.D
Acq On : 10 Dec 2014 10:58
Operator : KVu
Sample : DFTE9L1001
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Thu Dec 11 09:42:46 2014





Spectrum Information: Scan 791

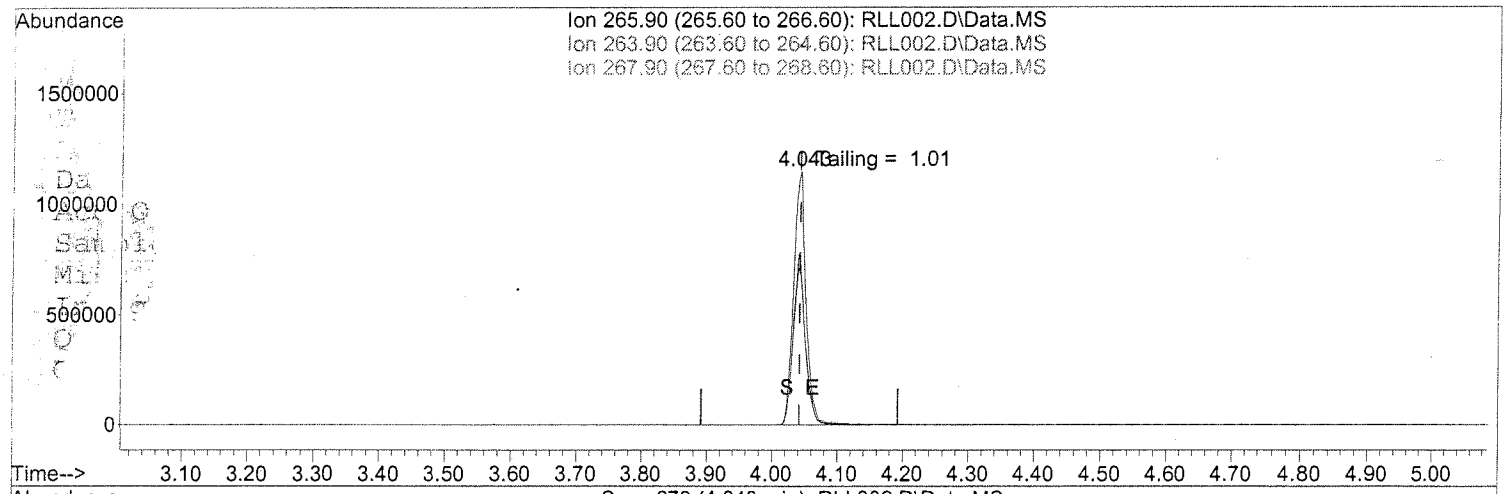
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	36.9	684616	PASS
68	69	0.00	2	1.5	4368	PASS
69	198	0.00	100	15.3	284288	PASS
70	69	0.00	2	0.2	657	PASS
127	198	40	60	40.6	754112	PASS
197	198	0.00	1	0.6	11041	PASS
198	198	100	100	100.0	1856000	PASS
199	198	5	9	6.5	120320	PASS
275	198	10	30	17.8	331152	PASS
365	198	1	100	1.0	18816	PASS
441	443	0.01	100	93.2	229376	PASS
442	198	40	100	68.3	1268117	PASS
443	442	17	23	19.4	246099	PASS

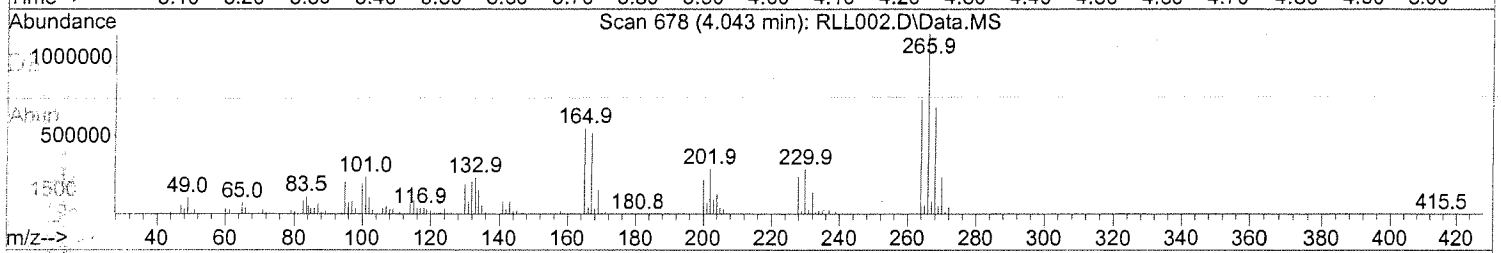
TW 12-18-14

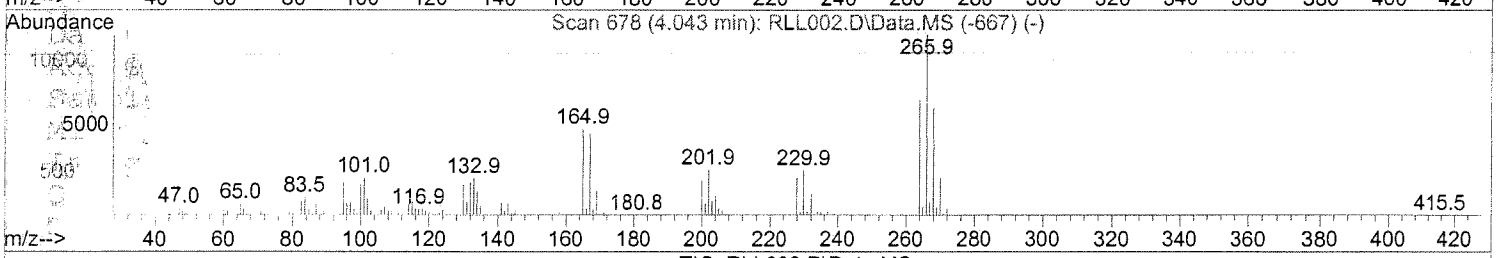
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14L10\RLL002.D
Acq On : 10 Dec 2014 10:58
Sample : DFTE9L1001
Misc : E9
Integrator: RTE
Quant Time: Dec 11 09:42:52 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RLL002.D\Data.MS

(1) Pentachlorophenol (T)

4.043min (+0.000) 50.00 ppm

response 1504817

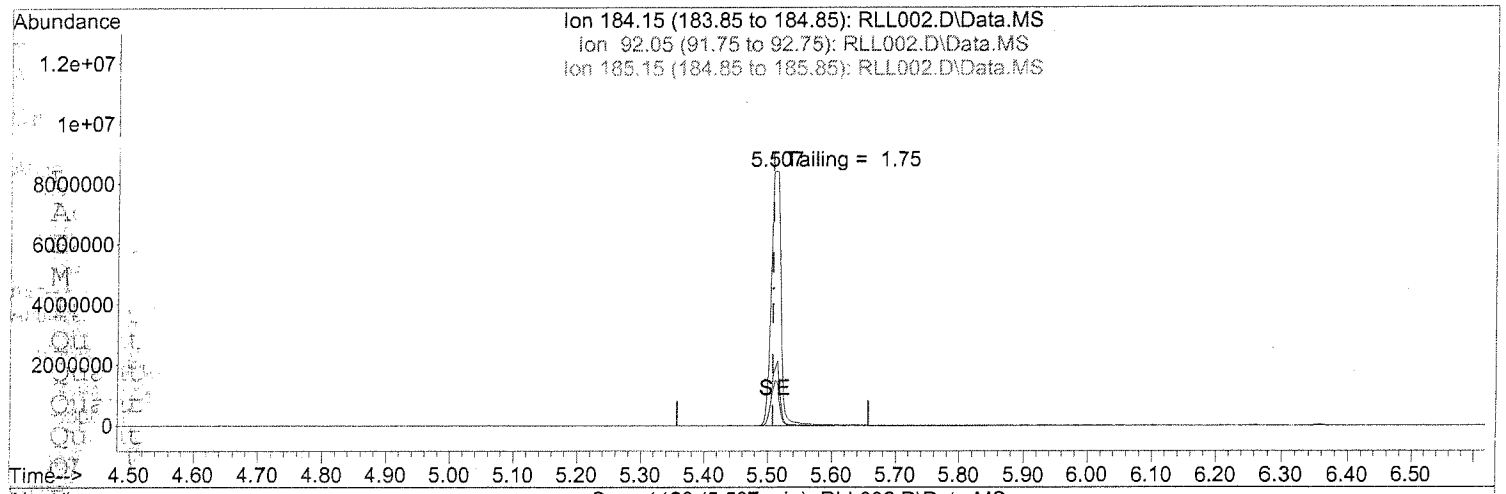
Ion	Exp%	Act%
265.90	100	100
263.90	65.60	65.60
267.90	62.70	62.71
0.00	0.00	0.00

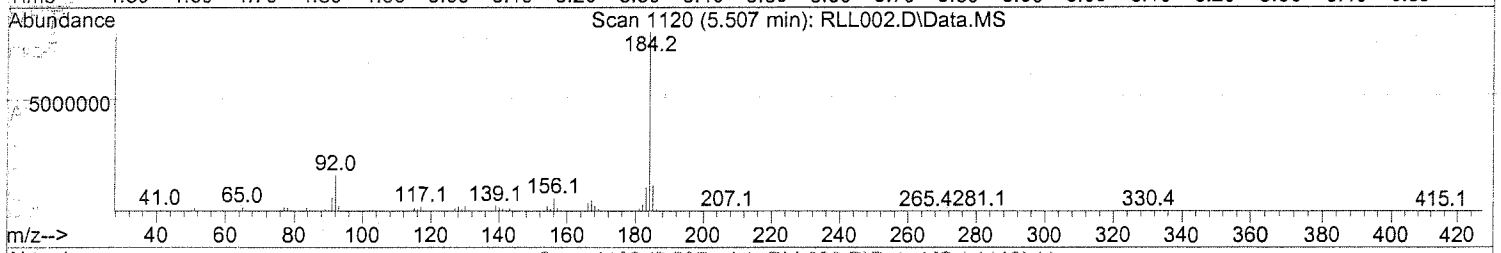
12-19-14

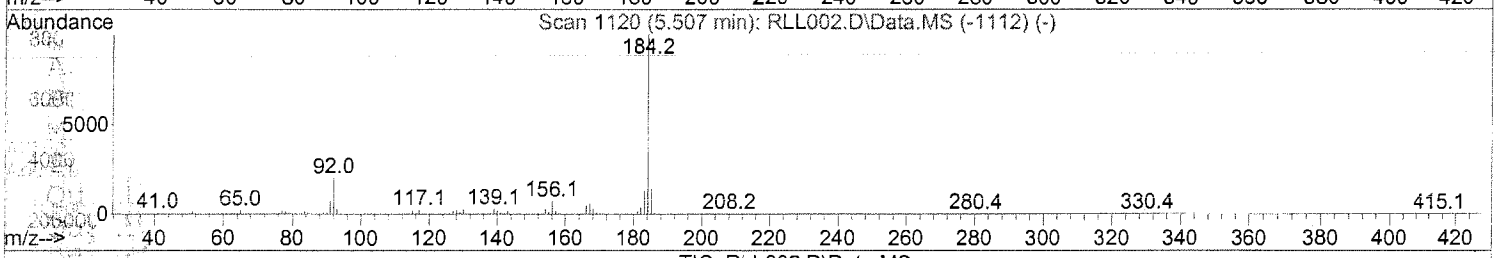
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14L10\RLL002.D
Acq On : 10 Dec 2014 10:58
Sample : DFTE9L1001
Misc : E9
Integrator: RTE
Quant Time: Dec 11 09:42:52 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RLL002.D\Data.MS

(3) Benzidine (T)

5.507min (0.000) 50.00 ppm

response 9001020

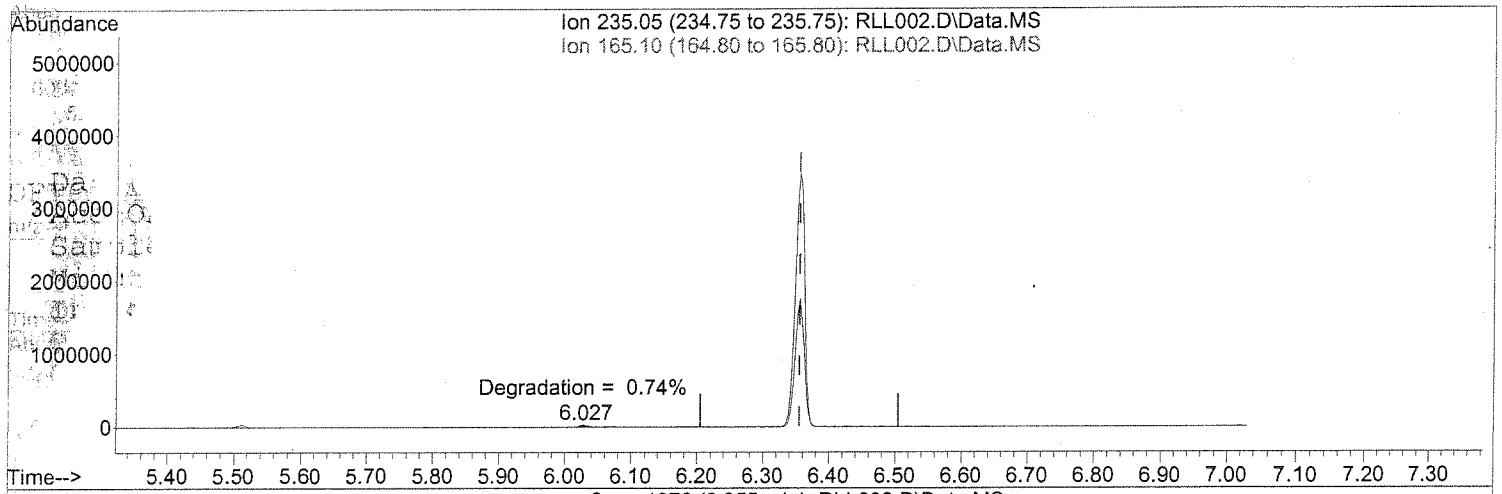
Ion	Exp%	Act%
184.15	100	100
92.05	20.90	20.85
185.15	14.90	14.92
0.00	0.00	0.00

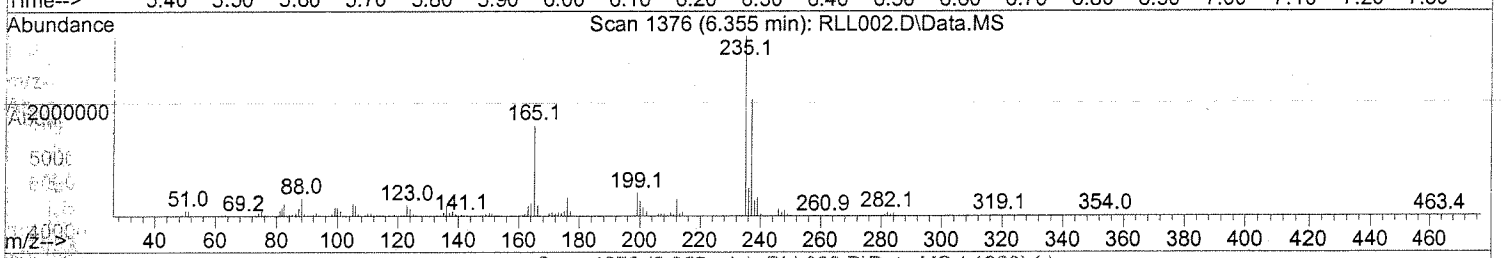
JCC 12/18/14

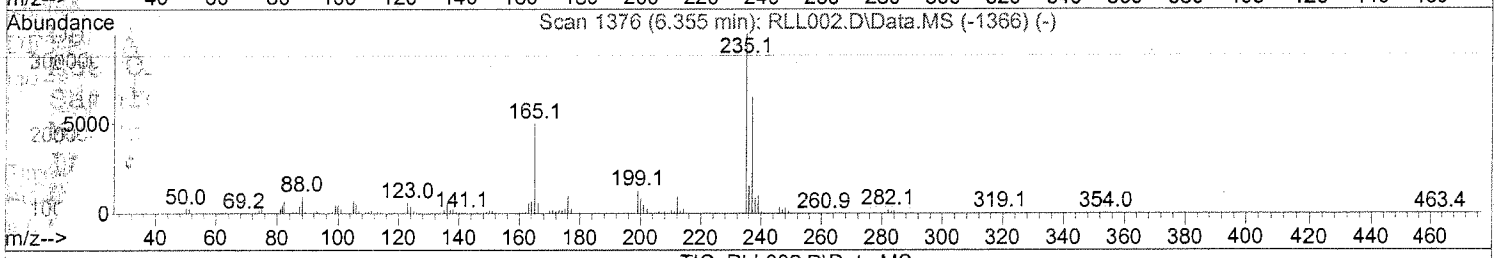
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14L10\RLL002.D
Acq On : 10 Dec 2014 10:58
Sample : DFTE9L1001
Misc : E9
Integrator: RTE
Quant Time: Dec 11 09:42:52 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RLL002.D\Data.MS

(6) DDT (T)

6.355min (0.000) 50.00 ppm

response 3433064

Ion	Exp%	Act%
235.05	100	100
165.10	49.60	49.56
0.00	0.00	0.00
0.00	0.00	0.00

pu 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL008.D
Vial: 8
Acq On : 10 Dec 2014 17:34
Operator: KVu
Sample : SVE9L106 20PPB
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:42 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.600	188	6074861	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.335	244	33457	21.76 ppb	0.00
Spiked Amount 500.000			Recovery =	4.35%	
Target Compounds					Qvalue
2) Naphthalene	5.919	128	96923	20.61 ppb	98
3) 2-Methylnaphthalene	6.745	142	73315	19.73 ppb	99
4) 1-Methylnaphthalene	6.863	142	68319	20.00 ppb	100
5) Acenaphthylene	7.788	152	95485	20.04 ppb	99
6) Acenaphthene	7.981	153	64404	20.38 ppb	98
7) Dibenzofuran	8.178	168	74718	19.85 ppb	99
8) Fluorene	8.562	166	59433	19.86 ppb	99
9) Phenanthrene	9.627	178	72997	20.42 ppb	98
10) Anthracene	9.685	178	70410	20.06 ppb	98
11) Fluoranthene	10.936	202	60315	22.25 ppb	99
12) Pyrene	11.185	202	63569	22.15 ppb	99
14) Benzo(a)anthracene	12.474	228	84855	24.81 ppb	95
15) Chrysene	12.510	228	73310	22.97 ppb	97
16) Benzo(b)fluoranthene	13.584	252	56360	21.14 ppb	96
17) Benzo(k)fluoranthene	13.614	252	57499	20.32 ppb	68
18) Benzo(a)pyrene	13.970	252	52317	20.91 ppb	99
19) Indeno(1,2,3-cd)pyrene	15.574	276	53623	20.17 ppb	89
20) Dibenzo(a,h)anthracene	15.589	278	41075	20.26 ppb #	56
21) Benzo(g,h,i)perylene	16.031	276	48192	21.08 ppb	98

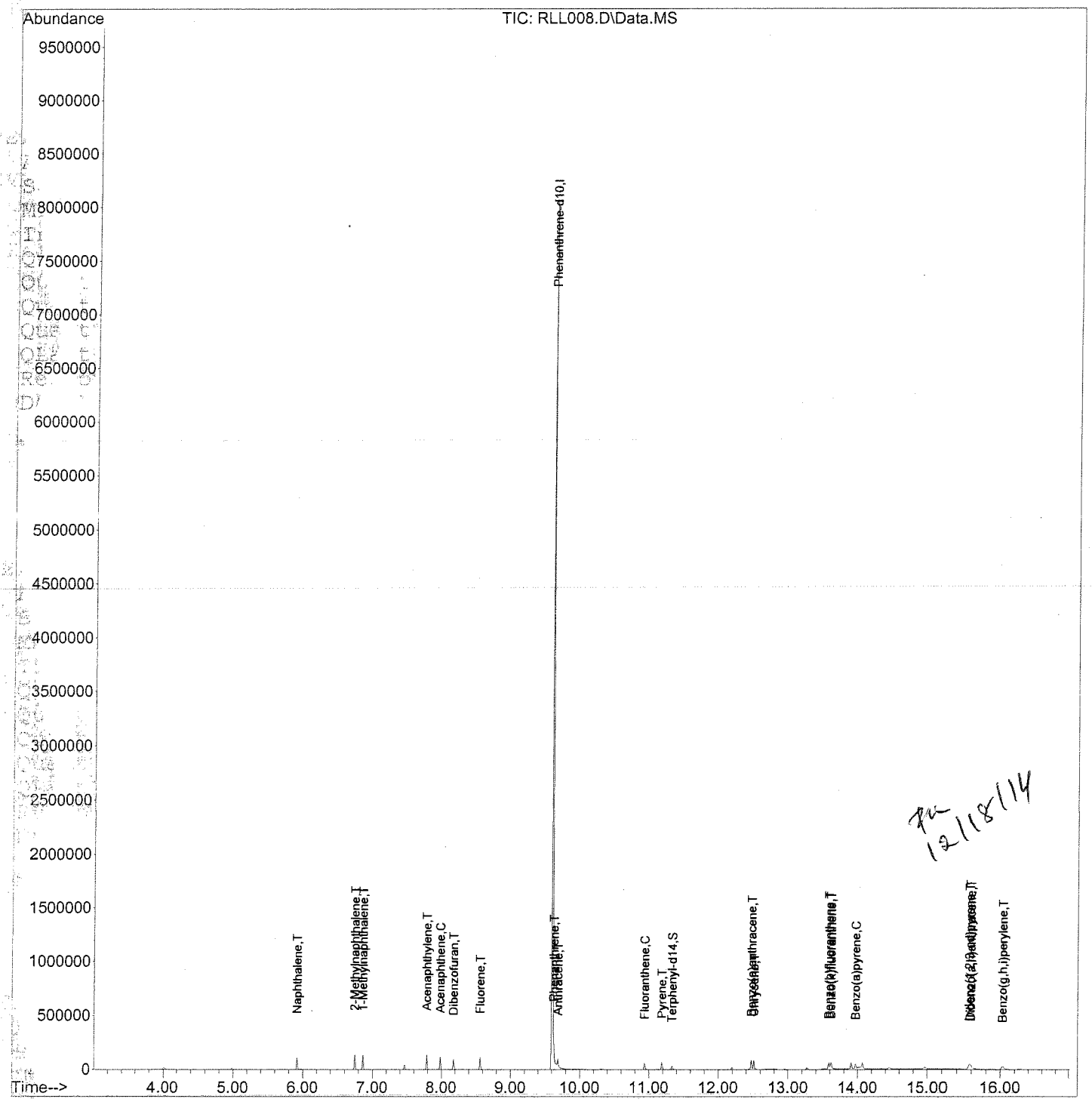
(#) = qualifier out of range (m) = manual integration (+) = signals summed

12/18/14

3043

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL008.D Vial: 8
Acq On : 10 Dec 2014 17:34 Operator: KVu
Sample : SVE9L106 20PPB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:42 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



TW 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL007.D
Vial: 7
Acq On : 10 Dec 2014 17:11
Operator: KVu
Sample : SVE9L105 40PPB
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:38 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

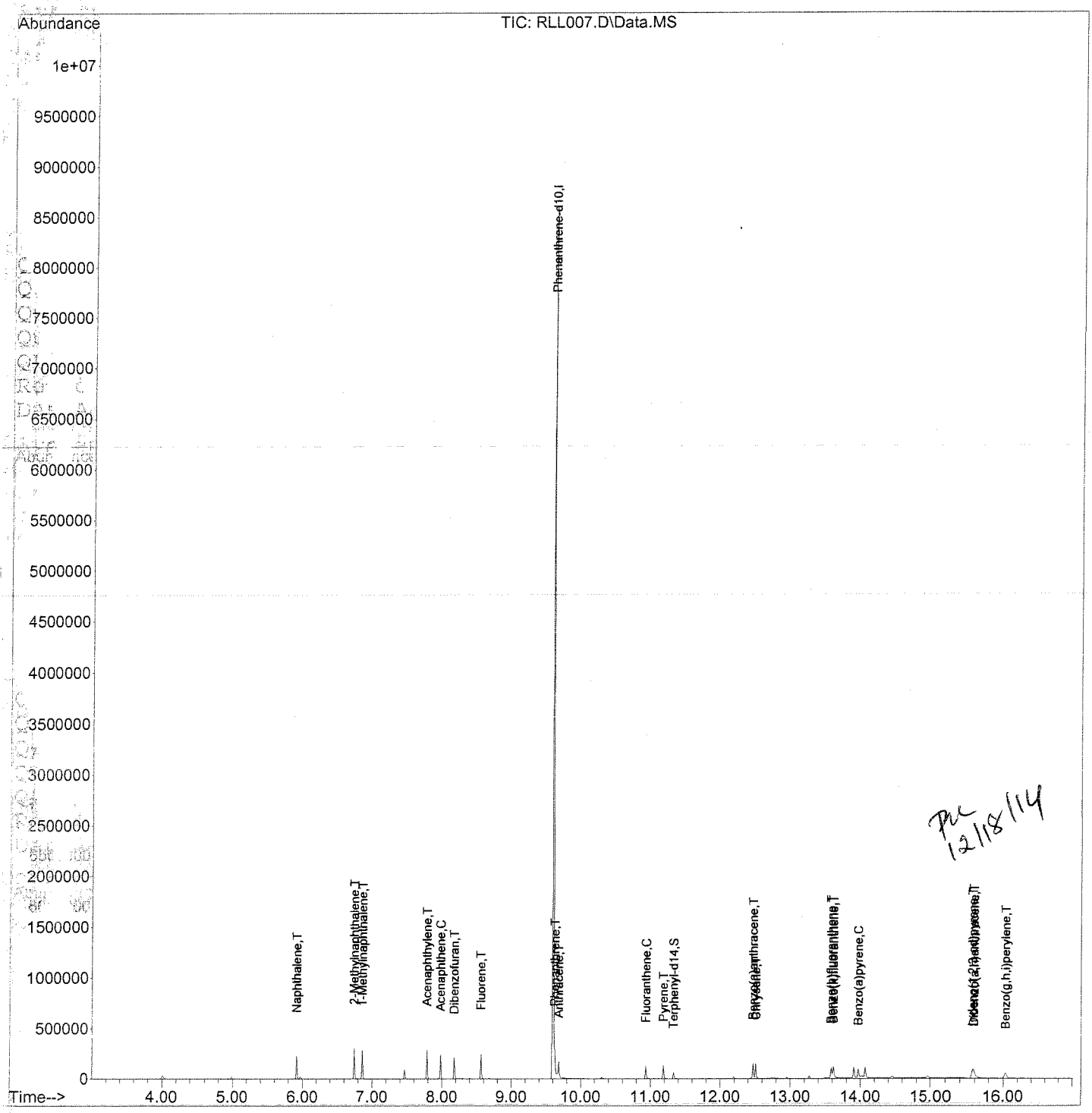
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.601	188	6463648	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.333	244	59401	36.31 ppb	0.00
Spiked Amount 500.000			Recovery	= 7.26%	
Target Compounds					Qvalue
2) Naphthalene	5.918	128	197364	39.44 ppb	98
3) 2-Methylnaphthalene	6.745	142	155822	39.42 ppb	99
4) 1-Methylnaphthalene	6.861	142	142801	39.28 ppb	100
5) Acenaphthylene	7.786	152	194664	38.39 ppb	98
6) Acenaphthene	7.981	153	131557	39.13 ppb	100
7) Dibenzofuran	8.176	168	156288	39.02 ppb	98
8) Fluorene	8.562	166	124678	39.16 ppb	99
9) Phenanthrene	9.628	178	154029	40.50 ppb	98
10) Anthracene	9.684	178	144311	38.64 ppb	99
11) Fluoranthene	10.934	202	107961	37.43 ppb	99
12) Pyrene	11.186	202	114132	37.37 ppb	99
14) Benzo(a)anthracene	12.472	228	137648	37.83 ppb	100
15) Chrysene	12.511	228	130032	38.29 ppb	97
16) Benzo(b)fluoranthene	13.582	252	102960	36.29 ppb	98
17) Benzo(k)fluoranthene	13.614	252	114335	37.98 ppb	82
18) Benzo(a)pyrene	13.970	252	96233	36.15 ppb	99
19) Indeno(1,2,3-cd)pyrene	15.570	276	102505	36.25 ppb	95
20) Dibenzo(a,h)anthracene	15.587	278	77248	35.81 ppb	81
21) Benzo(g,h,i)perylene	16.031	276	86477	35.56 ppb	96

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

12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL007.D Vial: 7
Acq On : 10 Dec 2014 17:11 Operator: KVu
Sample : SVE9L105 40PPB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:38 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



PK 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL006.D
Vial: 6
Acq On : 10 Dec 2014 16:48
Operator: KVu
Sample : SVE9L104 80PPB
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:34 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

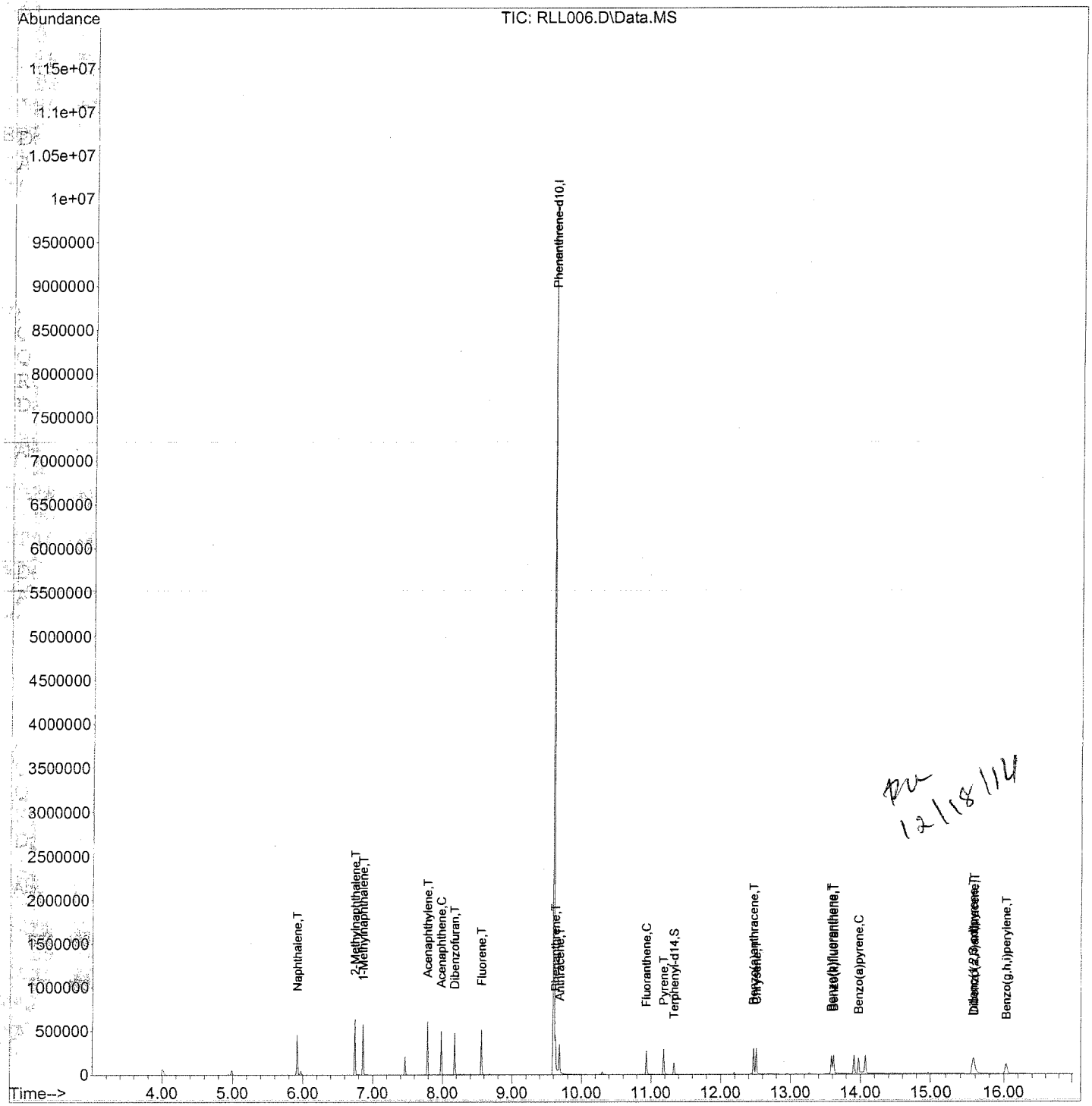
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.600	188	7276903	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.331	244	124068	67.37 ppb	0.00
Spiked Amount 500.000			Recovery	= 13.47%	
Target Compounds					Qvalue
2) Naphthalene	5.918	128	397449	70.54 ppb	99
3) 2-Methylnaphthalene	6.745	142	311287	69.94 ppb	99
4) 1-Methylnaphthalene	6.860	142	287052	70.14 ppb	100
5) Acenaphthylene	7.786	152	395536	69.28 ppb	99
6) Acenaphthene	7.981	153	267591	70.70 ppb	100
7) Dibenzofuran	8.176	168	314371	69.71 ppb	100
8) Fluorene	8.562	166	250217	69.81 ppb	99
9) Phenanthrene	9.627	178	298907	69.81 ppb	99
10) Anthracene	9.683	178	296545	70.52 ppb	100
11) Fluoranthene	10.931	202	222020	68.37 ppb	100
12) Pyrene	11.183	202	233972	68.05 ppb	100
14) Benzo(a)anthracene	12.470	228	265188	64.73 ppb	99
15) Chrysene	12.511	228	256989	67.22 ppb	98
16) Benzo(b)fluoranthene	13.582	252	207183	64.87 ppb	100
17) Benzo(k)fluoranthene	13.614	252	226761	66.91 ppb	96
18) Benzo(a)pyrene	13.970	252	191788	64.00 ppb	99
19) Indeno(1,2,3-cd)pyrene	15.567	276	200212	62.88 ppb	100
20) Dibenzo(a,h)anthracene	15.582	278	149643	61.63 ppb	91
21) Benzo(g,h,i)perylene	16.029	276	174105	63.59 ppb	99

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

m 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL006.D
Vial: 6
Acq On : 10 Dec 2014 16:48
Operator: KVu
Sample : SVE9L104 80PPB
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:34 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL005.D
Vial: 5
Acq On : 10 Dec 2014 16:25
Operator: KVu
Sample : SVE9L103 100PPB
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:30 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

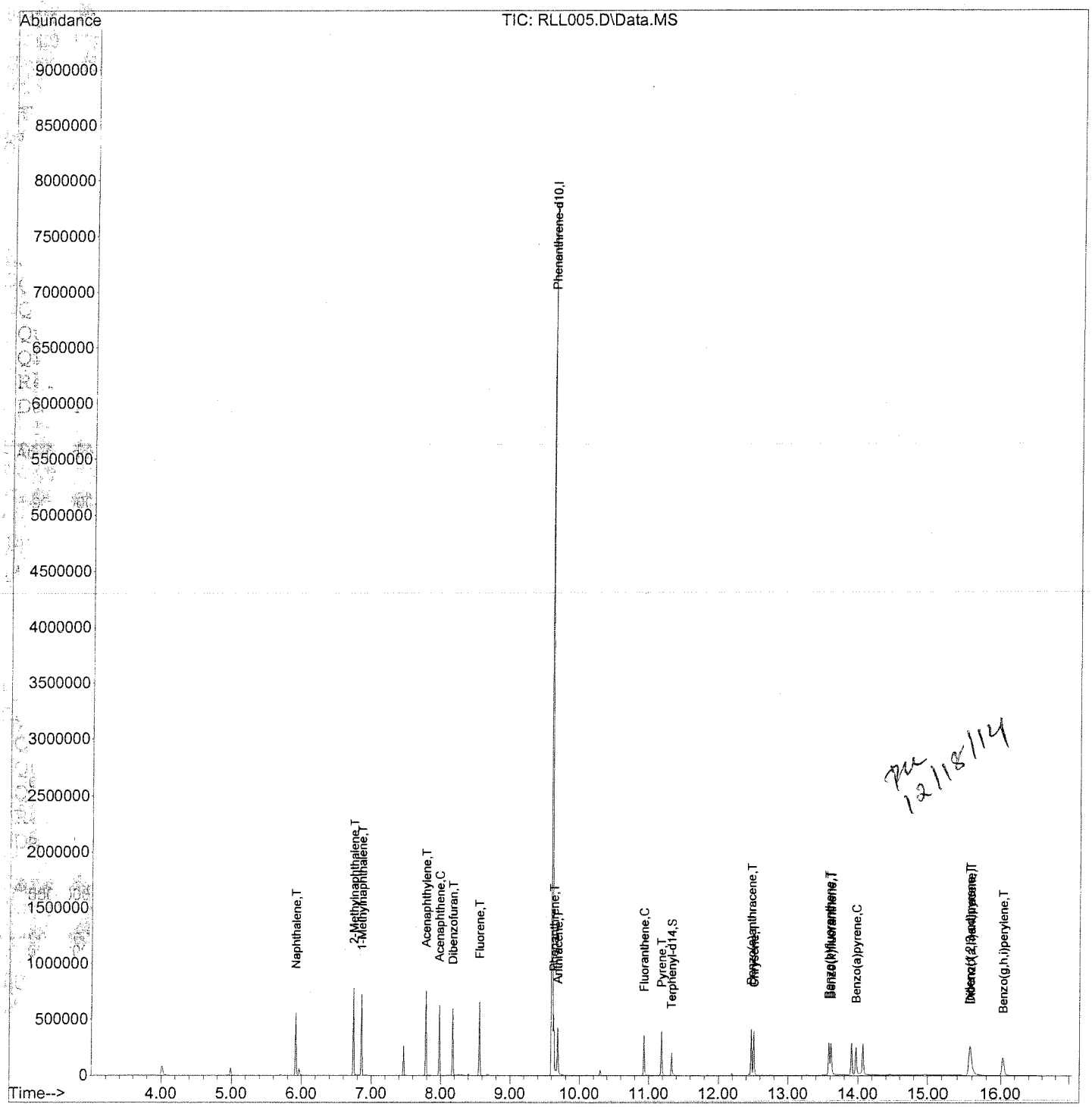
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.601	188	5870793	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.329	244	165986	111.72 ppb	0.00
Spiked Amount 500.000			Recovery	= 22.34%	
Target Compounds					Qvalue
2) Naphthalene	5.920	128	494040	108.68 ppb	99
3) 2-Methylnaphthalene	6.745	142	388213	108.12 ppb	100
4) 1-Methylnaphthalene	6.861	142	358273	108.51 ppb	100
5) Acenaphthylene	7.786	152	503462	109.31 ppb	99
6) Acenaphthene	7.982	153	333379	109.17 ppb	99
7) Dibenzofuran	8.176	168	398928	109.65 ppb	100
8) Fluorene	8.560	166	318789	110.24 ppb	100
9) Phenanthrene	9.628	178	387954	112.30 ppb	99
10) Anthracene	9.684	178	378960	111.70 ppb	99
11) Fluoranthene	10.932	202	292992	111.84 ppb	99
12) Pyrene	11.184	202	310634	111.99 ppb	100
14) Benzo(a)anthracene	12.473	228	355990	107.71 ppb	99
15) Chrysene	12.511	228	342145	110.93 ppb	99
16) Benzo(b)fluoranthene	13.582	252	286852	111.32 ppb	100
17) Benzo(k)fluoranthene	13.612	252	302587	110.66 ppb	99
18) Benzo(a)pyrene	13.970	252	265364	109.76 ppb	100
19) Indeno(1,2,3-cd)pyrene	15.568	276	279037	108.63 ppb	100
20) Dibenzo(a,h)anthracene	15.580	278	214109	109.29 ppb	100
21) Benzo(g,h,i)perylene	16.029	276	242527	109.79 ppb	99

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

12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL005.D Vial: 5
Acq On : 10 Dec 2014 16:25 Operator: KVu
Sample : SVE9L103 100PPB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:30 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



pu 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL004.D Vial: 4
Acq On : 10 Dec 2014 16:02 Operator: KVu
Sample : SVE9L102 500PPB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 11 08:35:53 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.601	188	6944856	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.329	244	860203	489.42 ppb	0.00
Spiked Amount 500.000			Recovery = 97.88%		
Target Compounds					Qvalue
2) Naphthalene	5.918	128	2514522	467.62 ppb	100
3) 2-Methylnaphthalene	6.745	142	2047839	482.13 ppb	100
4) 1-Methylnaphthalene	6.861	142	1865905	477.74 ppb	100
5) Acenaphthylene	7.788	152	2619502	480.78 ppb	100
6) Acenaphthene	7.982	153	1721190	476.47 ppb	100
7) Dibenzofuran	8.176	168	2082367	483.86 ppb	100
8) Fluorene	8.562	166	1649997	482.32 ppb	100
9) Phenanthrene	9.628	178	1948095	476.70 ppb	100
10) Anthracene	9.684	178	1960058	488.39 ppb	100
11) Fluoranthene	10.932	202	1471561	474.84 ppb	100
12) Pyrene	11.184	202	1570067	478.50 ppb	100
14) Benzo(a)anthracene	12.473	228	1789506	457.71 ppb	100
15) Chrysene	12.511	228	1686111	462.13 ppb	100
16) Benzo(b)fluoranthene	13.582	252	1533469	503.06 ppb	100
17) Benzo(k)fluoranthene	13.612	252	1563585	483.39 ppb	100
18) Benzo(a)pyrene	13.971	252	1454188	508.45 ppb	100
19) Indeno(1,2,3-cd)pyrene	15.563	276	1560677	513.62 ppb	100
20) Dibenzo(a,h)anthracene	15.575	278	1225299	528.73 ppb	100
21) Benzo(g,h,i)perylene	16.027	276	1320174	505.22 ppb	100

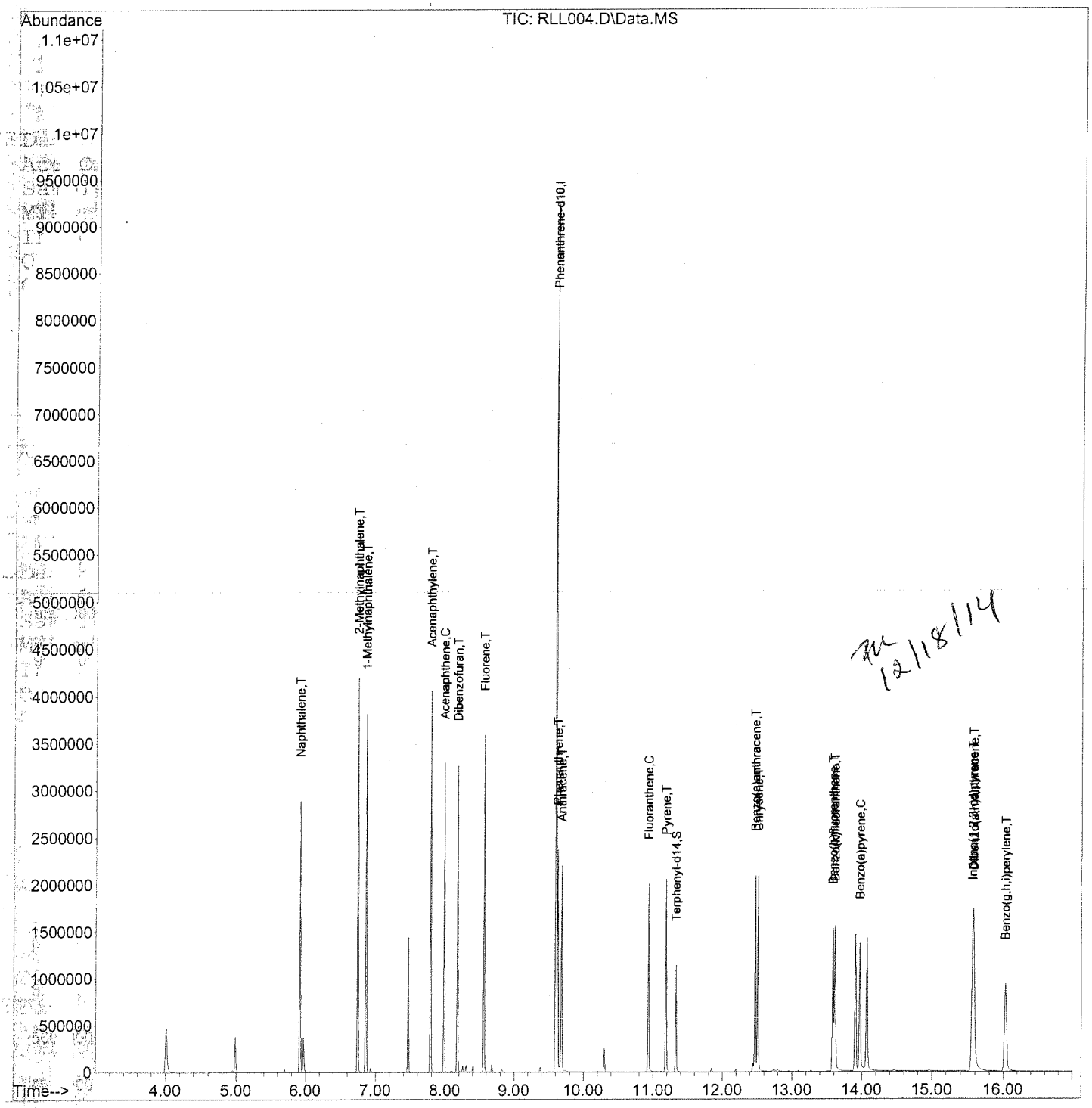
(#) = qualifier out of range (m) = manual integration (+) = signals summed

12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL004.D
Acq On : 10 Dec 2014 16:02
Sample : SVE9L102 500PPB
Misc : E9
Integrator: RTE
Quant Time: Dec 11 08:35:53 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 4
Operator: KVu
Inst : DSQ
Multiplr: 1.00



TM 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL003.D Vial: 3
Acq On : 10 Dec 2014 15:43 Operator: KVu
Sample : SVE9L101 1000PPB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:58 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

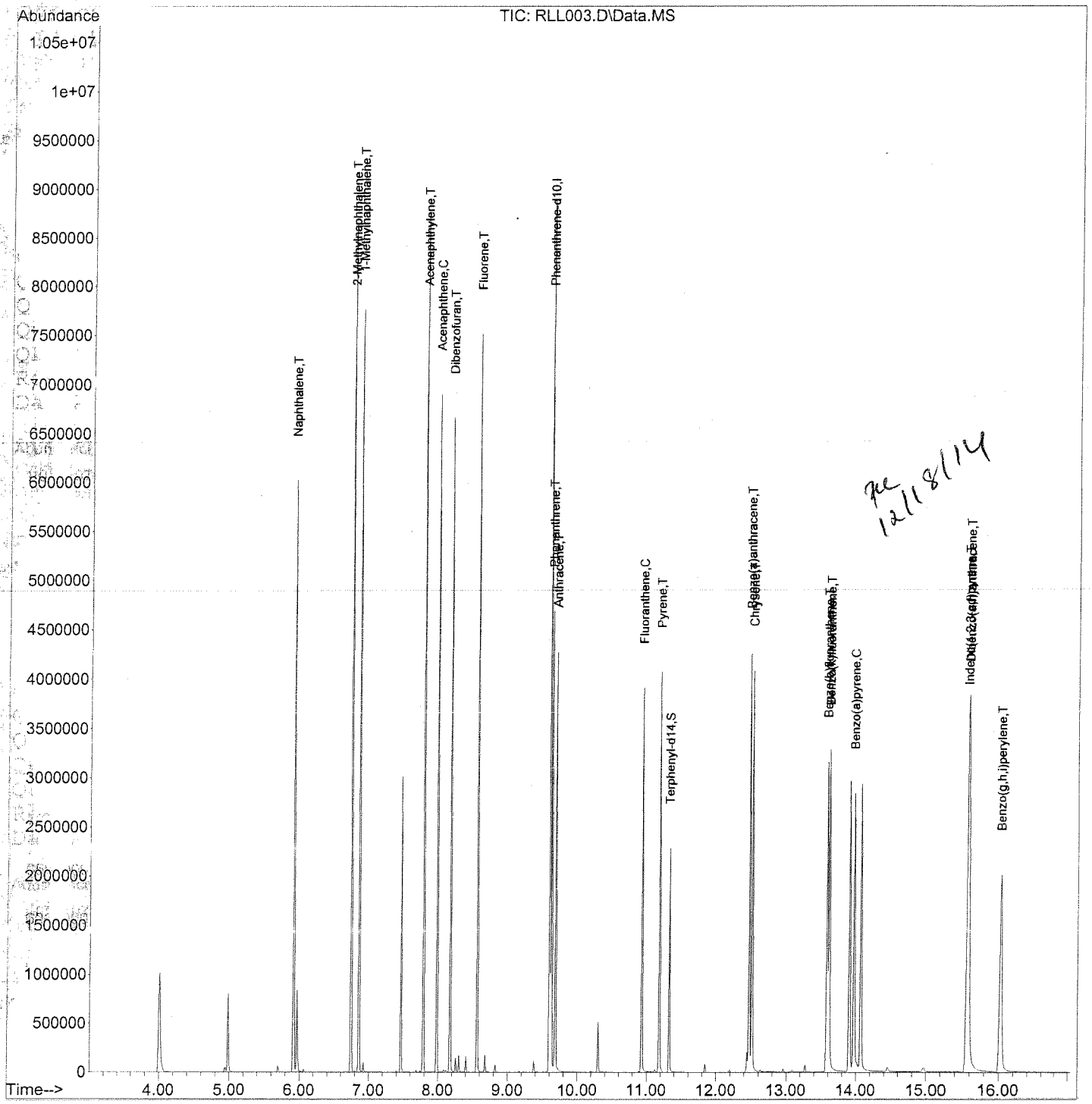
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.598	188	6288406	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.326	244	1696485	1065.99 ppb	0.00
Spiked Amount 500.000			Recovery	= 213.20%	
Target Compounds					Qvalue
2) Naphthalene	5.916	128	5258373	1079.97 ppb	100
3) 2-Methylnaphthalene	6.743	142	4262083	1108.19 ppb	99
4) 1-Methylnaphthalene	6.858	142	3892413	1100.64 ppb	100
5) Acenaphthylene	7.786	152	5514546	1117.80 ppb	99
6) Acenaphthene	7.981	153	3514105	1074.34 ppb	100
7) Dibenzofuran	8.173	168	4272685	1096.44 ppb	100
8) Fluorene	8.559	166	3371324	1088.38 ppb	99
9) Phenanthrene	9.625	178	3765388	1017.58 ppb	100
10) Anthracene	9.683	178	3837520	1056.02 ppb	100
11) Fluoranthene	10.931	202	2887770	1029.09 ppb	99
12) Pyrene	11.183	202	3062461	1030.75 ppb	99
14) Benzo(a)anthracene	12.470	228	3582812	1012.05 ppb	99
15) Chrysene	12.511	228	3370689	1020.29 ppb	100
16) Benzo(b)fluoranthene	13.582	252	3051860	1105.70 ppb	98
17) Benzo(k)fluoranthene	13.611	252	3294081	1124.70 ppb	99
18) Benzo(a)pyrene	13.970	252	2942142	1136.10 ppb	100
19) Indeno(1,2,3-cd)pyrene	15.563	276	3261921	1185.55 ppb	98
20) Dibenzo(a,h)anthracene	15.575	278	2456838	1170.81 ppb	95
21) Benzo(g,h,i)perylene	16.029	276	2729662	1153.66 ppb	99

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

RC 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14L10\RLL003.D Vial: 3
Acq On : 10 Dec 2014 15:43 Operator: KVu
Sample : SVE9L101 1000PPB Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 10 18:54:58 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M



RC 12/18/14

SECOND SOURCE VERIFICATION

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RLL012
Instrument ID: TOE9

Project: RED HILL PHASE 1B
SDG No.: 15A141
DFTPP Injection Date: 12/11/14
DFTPP Injection Time: 12:00

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.22
68	Less than 2% of mass 69	0.05(0.4)1
69	Relative abundance of mass 198	14.93
70	Less than 2.0% of mass 69	0.03(0.2)1
127	40.0 - 60.0% of mass 198	40.71
197	Less than 1.0% of mass 198	0.34
198	Base Peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.18
275	10.0 - 30.0% of mass 198	17.25
365	Greater than 1.00% of mass 198	1.02
441	Present, but less than mass 443	11.54(88.1)3
442	Greater than 40.0% of mass 198	67.78
443	17.0 - 23.0% of mass 442	13.10(19.3)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	ISVE9L102	RLL013	12/11/14	12:11

FORM V SV OLM02.0

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :E9
IC_Beginning DateTime :12/10/14 15:43
Spike Amount :500 PPB
CC/CV File :RLL013
IC File :RLL004

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :12/10/14 17:34
HPChem Method :SVE9L10
Date_Time :12/11/14 12:11

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	6202675	1	1	9.600	9.600	0				
2	Naphthalene	409.898	-18.0	1968581	1.270	1.549	5.918	5.918	8.15				
3	2-Methylnaphthalene	400.972	-19.8	1521112	0.981	1.223	6.743	6.745	8.46				
4	1-Methylnaphthalene	417.275	-16.5	1455577	0.939	1.125	6.861	6.861	8.35				
5	Acenaphthylene	423.732	-15.3	2061941	1.330	1.569	7.786	7.787	9.34				
6	Acenaphthene	417.587	-16.5	1347285	0.869	1.040	7.982	7.982	7.81				
7	Dibenzofuran	408.588	-18.3	1570502	1.013	1.239	8.173	8.176	8.59				
8	Fluorene	417.349	-16.5	1275144	0.822	0.985	8.560	8.561	8.52				
9	Phenanthrene	414.671	-17.1	1513506	0.976	1.177	9.627	9.627	8.30				
10	Anthracene	427.366	-14.5	1531859	0.988	1.156	9.683	9.684	8.07				
11	Fluoranthene	429.504	-14.1	1188821	0.767	0.892	10.931	10.933	10.52				
12	Pyrene	438.396	-12.3	1284758	0.829	0.945	11.183	11.184	10.52				
13	Terphenyl-d14	455.353	-8.9	714799	0.461	0.506	11.328	11.330	10.93				
14	Benzo(a)anthracene	414.912	-17.0	1448834	0.934	1.126	12.470	12.472	14.87				
15	Chrysene	413.234	-17.4	1346576	0.868	1.051	12.511	12.511	11.62				
16	Benzo(b)fluoranthene	480.476	-3.9	1308092	0.844	0.878	13.582	13.582	11.97				
17	Benzo(k)fluoranthene	449.726	-10.1	1299225	0.838	0.932	13.611	13.613	10.74				
18	Benzo(a)pyrene	472.857	-5.4	1207857	0.779	0.824	13.970	13.970	12.62				
19	Indeno(1,2,3-cd)pyrene	488.530	-2.3	1325810	0.855	0.875	15.562	15.568	13.95				
20	Dibenzo(a,h)anthracene	495.989	-0.8	1026596	0.662	0.667	15.577	15.581	14.49				
21	Benzo(g,h,i)perylene	489.050	-2.2	1141359	0.736	0.753	16.029	16.029	13.47				

PK
12/18/14

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RLL004
Instrument ID: TOE9

Project:ICAL
SDG No.:ICAL
Date Analyzed: 12/10/14
Time Analyzed: 16:02

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	6944856	9.60	0	0.00	0	0.00
	UPPER LIMIT	13889712	10.10	0	0.50	0	0.50
	LOWER LIMIT	3472428	9.10	0	-0.50	0	-0.50
	SAMPLE ID						
1	ISVF0E082	6202675	9.60	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

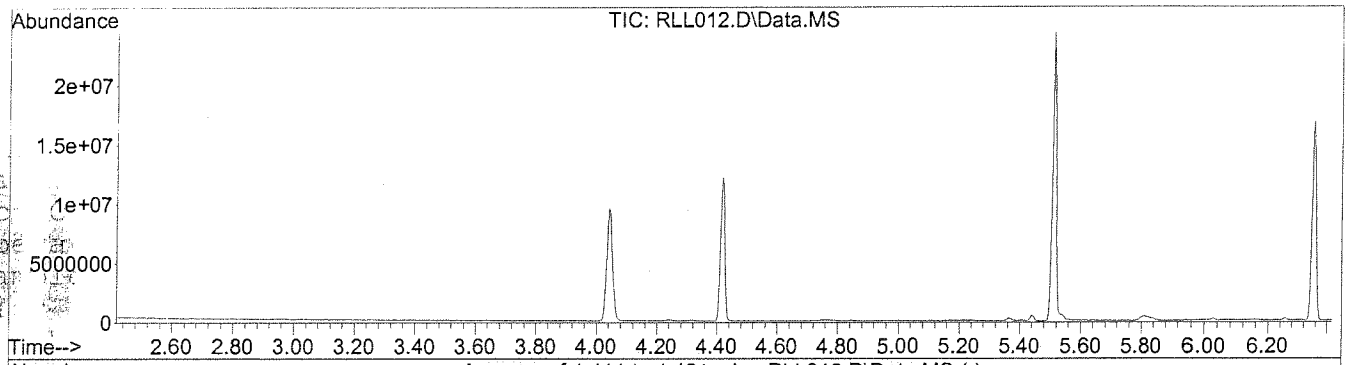
OLM02.0

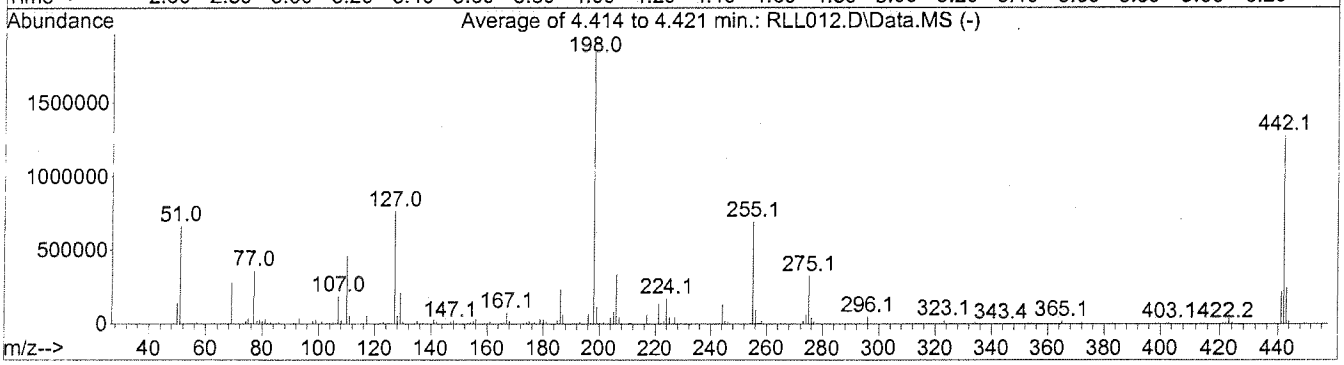
12/18/14

Data Path : C:\msdchem\1\DATA\14l11\
Data File : RLL012.D
Acq On : 11 Dec 2014 12:00
Operator : KVu
Sample : DFTE9L1002
Misc :
ALS Vial : 42 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Thu Dec 11 09:42:46 2014





AutoFind: Scans 790, 791, 792; Background Corrected with Scan 781

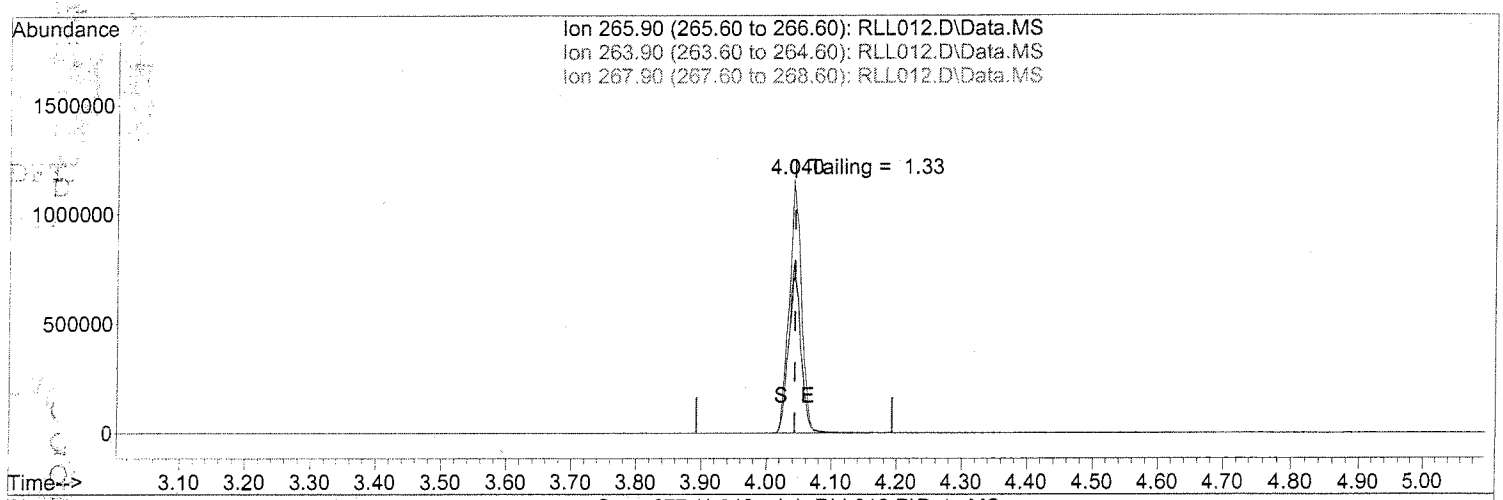
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	35.2	661653	PASS
68	69	0.00	2	0.4	1007	PASS
69	198	0.00	100	14.9	280536	PASS
70	69	0.00	2	0.2	466	PASS
127	198	40	60	40.7	764715	PASS
197	198	0.00	1	0.3	6383	PASS
198	198	100	100	100.0	1878528	PASS
199	198	5	9	6.2	116096	PASS
275	198	10	30	17.3	324075	PASS
365	198	1	100	1.0	19091	PASS
441	443	0.01	100	88.1	216789	PASS
442	198	40	100	67.8	1273173	PASS
443	442	17	23	19.3	246165	PASS

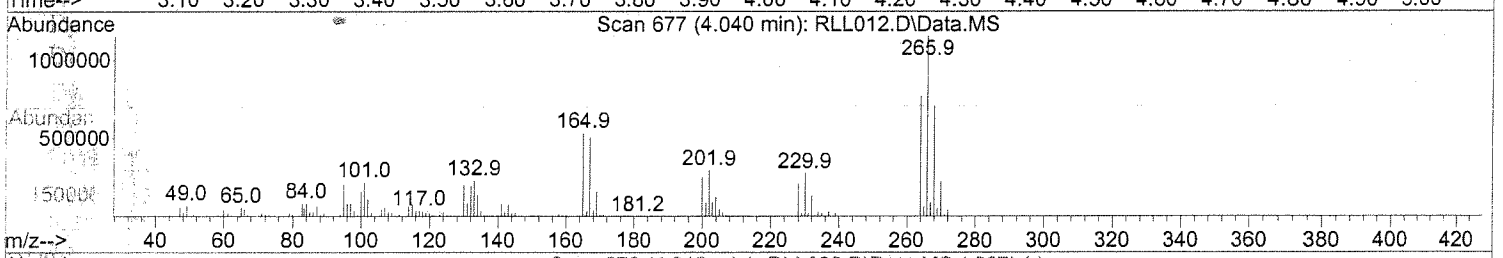
PM 12/18/14

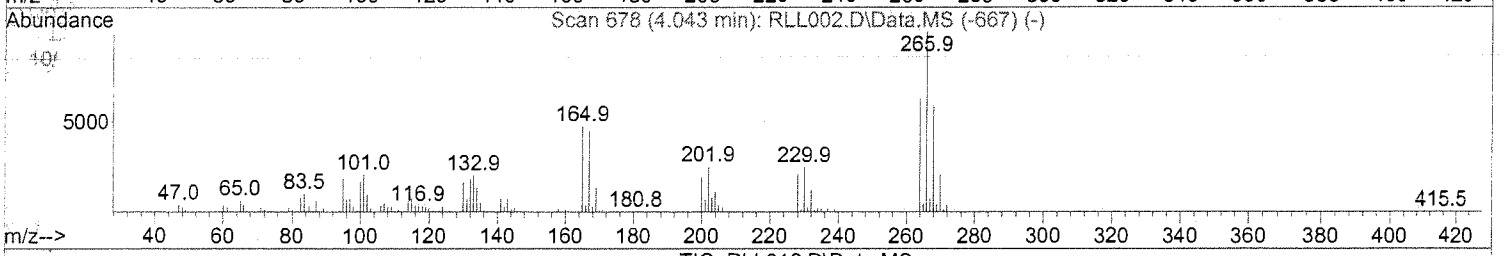
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14l11\RLL012.D
Acq On : 11 Dec 2014 12:00
Sample : DFTE9L1002
Misc :
Integrator: RTE
Quant Time: Dec 11 12:11:17 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 42
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RLL012.D\Data.MS

(1) Pentachlorophenol (T)

4.040min (-0.003) 49.60 ppm

response 1492875

Ion	Exp%	Act%
265.90	100	100
263.90	65.60	65.15
267.90	62.70	63.67
0.00	0.00	0.00

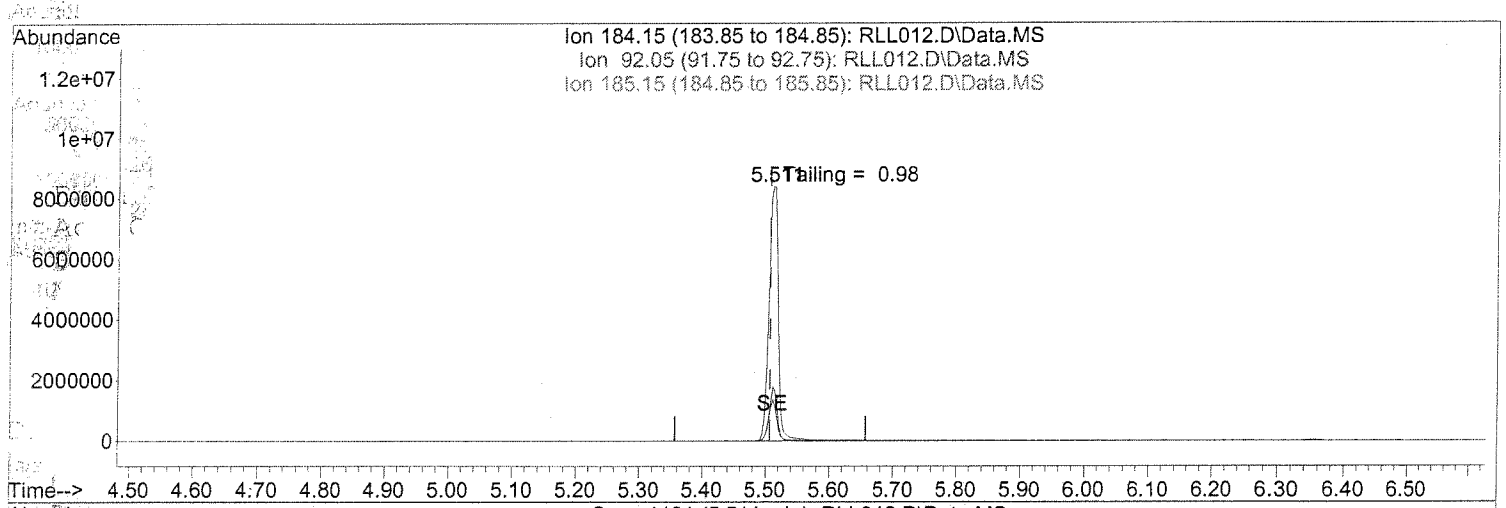
12/18/14

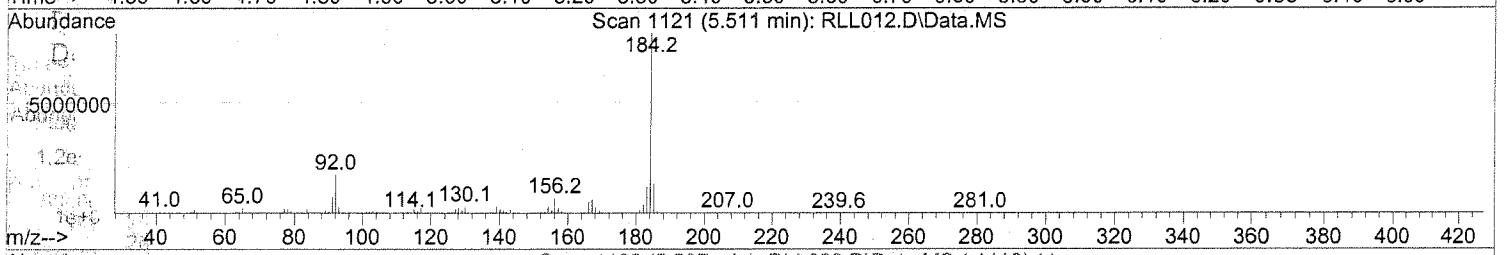
3060

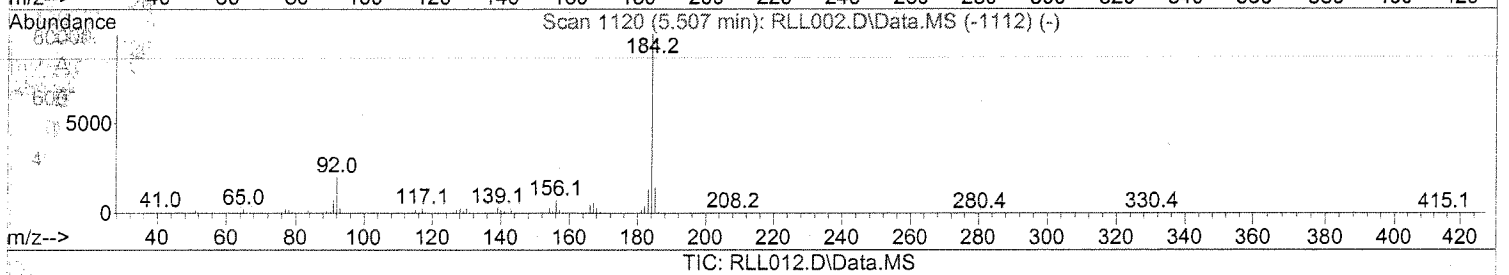
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14l11\RLL012.D
Acq On : 11 Dec 2014 12:00
Sample : DFTE9L1002
Misc :
Integrator: RTE
Quant Time: Dec 11 12:11:17 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 42
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RLL012.D\Data.MS

(3) Benzidine (T)

5.511min (+0.004) 48.18 ppm

response 8672741

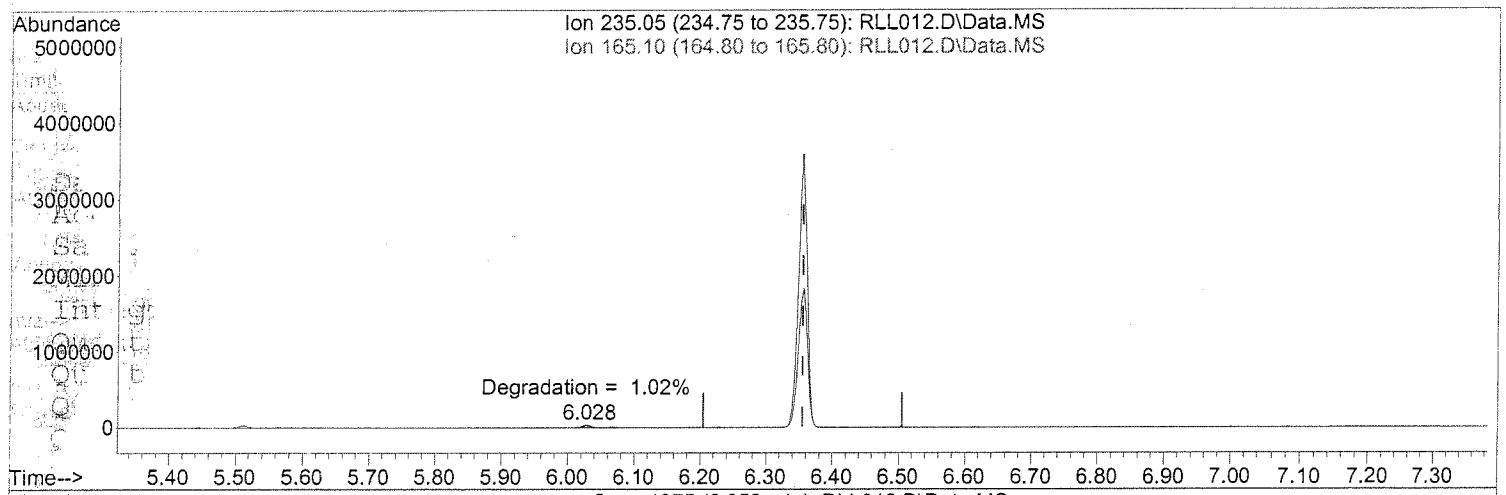
Ion	Exp%	Act%
184.15	100	100
92.05	20.90	18.14
185.15	14.90	13.91
0.00	0.00	0.00

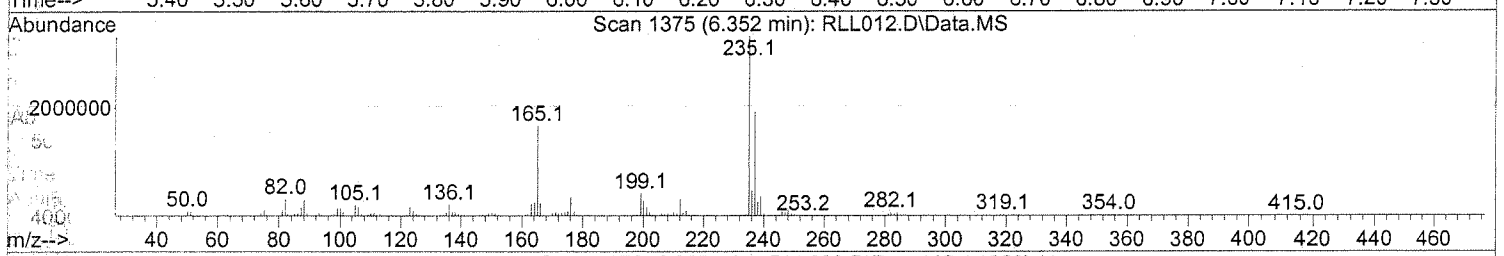
12/18/14

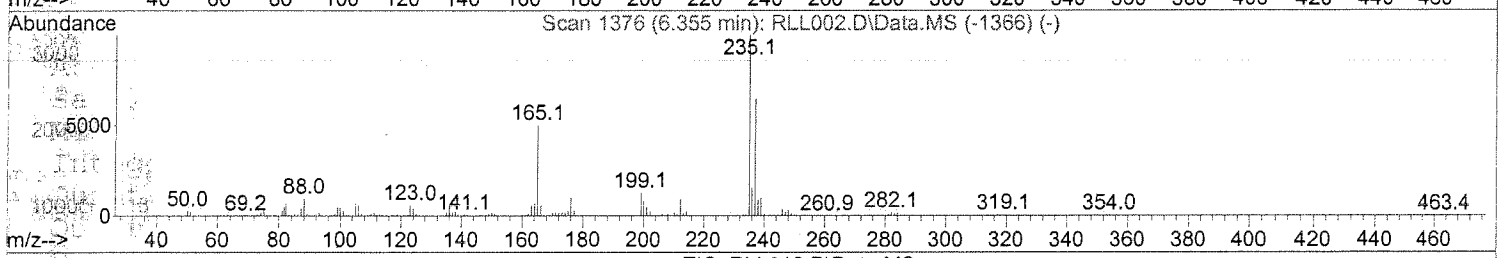
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\14l11\RLL012.D
Acq On : 11 Dec 2014 12:00
Sample : DFTE9L1002
Misc :
Integrator: RTE
Quant Time: Dec 11 12:11:17 2014
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 42
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RLL012.D\Data.MS

(6) DDT (T)

6.352min (-0.003) 47.56 ppm

response 3265696

Ion	Exp%	Act%
235.05	100	100
165.10	49.60	54.20
0.00	0.00	0.00
0.00	0.00	0.00

12/18/14

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14l11\RLL013.D Vial: 43
Acq On : 11 Dec 2014 12:11 Operator: KVu
Sample : ISVE9L102 Inst : DSQ
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 11 13:29:10 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 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	89	0.00
2	T	Naphthalene	500.000	409.898	18.0	78	0.00
3	T	2-Methylnaphthalene	500.000	400.972	19.8	74	0.00
4	T	1-Methylnaphthalene	500.000	417.274	16.5	78	0.00
5	T	Acenaphthylene	500.000	423.732	15.3	79	0.00
6	C	Acenaphthene	500.000	417.587	16.5	78	0.00
7	T	Dibenzofuran	500.000	408.588	18.3	75	0.00
8	T	Fluorene	500.000	417.349	16.5	77	0.00
9	T	Phenanthrene	500.000	414.671	17.1	78	0.00
10	T	Anthracene	500.000	427.366	14.5	78	0.00
11	C	Fluoranthene	500.000	429.504	14.1	81	0.00
12	T	Pyrene	500.000	438.396	12.3	82	0.00
13	S	Terphenyl-d14	500.000	455.352	8.9	83	0.00
14	T	Benzo(a)anthracene	500.000	414.912	17.0	81	0.00
15	T	Chrysene	500.000	413.234	17.4	80	-0.07
16	T	Benzo(b)fluoranthene	500.000	480.476	3.9	85	0.00
17	T	Benzo(k)fluoranthene	500.000	449.726	10.1	83	0.00
18	C	Benzo(a)pyrene	500.000	472.857	5.4	83	0.00
19	T	Indeno(1,2,3-cd)pyrene	500.000	488.530	2.3	85	0.00
20	T	Dibenzo(a,h)anthracene	500.000	495.989	0.8	84	0.00
21	T	Benzo(g,h,i)perylene	500.000	489.050	2.2	86	0.00

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

pu 12/18/14

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\14111\RLL013.D Vial: 43
Acq On : 11 Dec 2014 12:11 Operator: KVu
Sample : ISVE9L102 Inst : DSQ
Misc : Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 11 13:29:10 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 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	89	0.00
2	T	Naphthalene	1.549	1.270	18.0	78	0.00
3	T	2-Methylnaphthalene	1.223	0.981	19.8	74	0.00
4	T	1-Methylnaphthalene	1.125	0.939	16.5	78	0.00
5	T	Acenaphthylene	1.569	1.330	15.2	79	0.00
6	C	Acenaphthene	1.040	0.869	16.4	78	0.00
7	T	Dibenzofuran	1.239	1.013	18.2	75	0.00
8	T	Fluorene	0.985	0.822	16.5	77	0.00
9	T	Phenanthrene	1.177	0.976	17.1	78	0.00
10	T	Anthracene	1.156	0.988	14.5	78	0.00
11	C	Fluoranthene	0.892	0.767	14.0	81	0.00
12	T	Pyrene	0.945	0.829	12.3	82	0.00
13	S	Terphenyl-d14	0.506	0.461	8.9	83	0.00
14	T	Benzo(a)anthracene	1.126	0.934	17.1	81	0.00
15	T	Chrysene	1.051	0.868	17.4	80	-0.07
16	T	Benzo(b)fluoranthene	0.878	0.844	3.9	85	0.00
17	T	Benzo(k)fluoranthene	0.932	0.838	10.1	83	0.00
18	C	Benzo(a)pyrene	0.824	0.779	5.5	83	0.00
19	T	Indeno(1,2,3-cd)pyrene	0.875	0.855	2.3	85	0.00
20	T	Dibenzo(a,h)anthracene	0.667	0.662	0.7	84	0.00
21	T	Benzo(g,h,i)perylene	0.753	0.736	2.3	86	0.00

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

12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14l11\RLL013.D
Vial: 43
Acq On : 11 Dec 2014 12:11
Operator: KVu
Sample : ISVE9L102
Inst : DSQ
Misc :
Multiplr: 1.00
Integrator: RTE
Quant Time: Dec 11 13:29:10 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.600	188	6202675	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.328	244	714799	455.35 ppb	0.00
Spiked Amount 500.000			Recovery =	91.07%	
Target Compounds					Qvalue
2) Naphthalene	5.918	128	1968581	409.90 ppb	100
3) 2-Methylnaphthalene	6.743	142	1521112	400.97 ppb	99
4) 1-Methylnaphthalene	6.861	142	1455577	417.27 ppb	99
5) Acenaphthylene	7.786	152	2061941	423.73 ppb	100
6) Acenaphthene	7.982	153	1347285	417.59 ppb	100
7) Dibenzofuran	8.173	168	1570502	408.59 ppb	98
8) Fluorene	8.560	166	1275144	417.35 ppb	100
9) Phenanthrene	9.627	178	1513506	414.67 ppb	99
10) Anthracene	9.683	178	1531859	427.37 ppb	100
11) Fluoranthene	10.931	202	1188821	429.50 ppb	98
12) Pyrene	11.183	202	1284758	438.40 ppb	97
14) Benzo(a)anthracene	12.470	228	1448834	414.91 ppb	94
15) Chrysene	12.511	228	1346576	413.23 ppb #	29
16) Benzo(b)fluoranthene	13.582	252	1308092	480.48 ppb	81
17) Benzo(k)fluoranthene	13.611	252	1299225	449.73 ppb	98
18) Benzo(a)pyrene	13.970	252	1207857	472.86 ppb	99
19) Indeno(1,2,3-cd)pyrene	15.562	276	1325810	488.53 ppb	98
20) Dibenzo(a,h)anthracene	15.577	278	1026596	495.99 ppb	98
21) Benzo(g,h,i)perylene	16.029	276	1141359	489.05 ppb	96

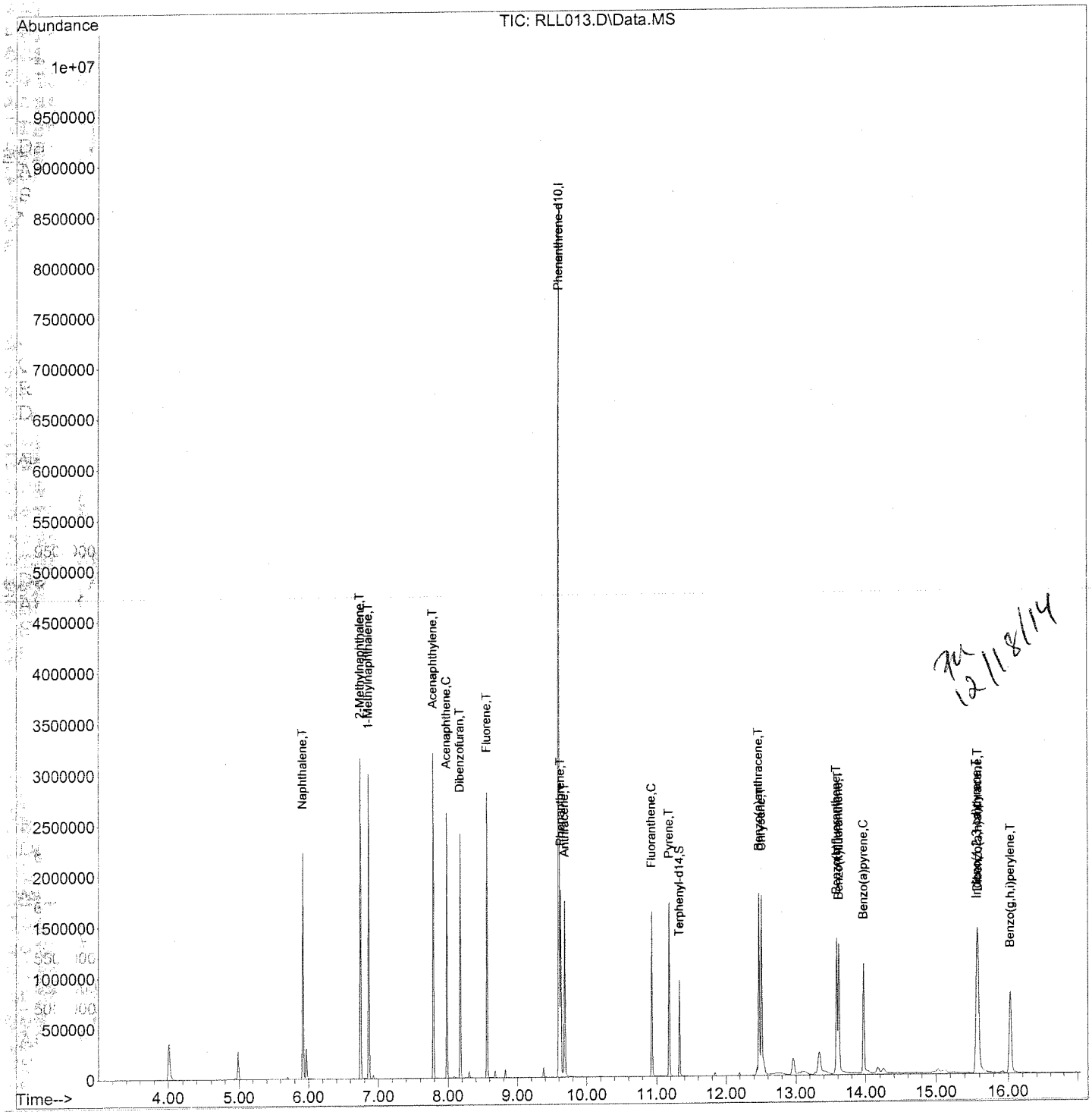
(#) = qualifier out of range (m) = manual integration (+) = signals summed

pw 12/18/14

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\14111\RLL013.D
Acq On : 11 Dec 2014 12:11
Sample : ISVE9L102
Misc :
Integrator: RTE
Quant Time: Dec 11 13:29:10 2014
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 43
Operator: KVu
Inst : DSQ
Multiplr: 1.00



12/18/14

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RAL134
Instrument ID: TOE9

Project: RED HILL PHASE 1B
SDG No.: 15A141
DFTPP Injection Date: 01/30/15
DFTPP Injection Time: 10:42

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	39.56
68	Less than 2% of mass 69	0.24(1.7)1
69	Relative abundance of mass 198	14.09
70	Less than 2.0% of mass 69	0.05(0.4)1
127	40.0 - 60.0% of mass 198	50.17
197	Less than 1.0% of mass 198	0.57
198	Base Peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.23
275	10.0 - 30.0% of mass 198	16.92
365	Greater than 1.00% of mass 198	1.03
441	Present, but less than mass 443	7.94(92.5)3
442	Greater than 40.0% of mass 198	47.48
443	17.0 - 23.0% of mass 442	8.58(18.1)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	CSVE9L1007	RAL135	01/30/15	11:01
2	LCS1W	SVA035WL	RAL136	01/30/15	11:52
3	LCD1W	SVA035WC	RAL137	01/30/15	12:10
4	RHMW06-GW-02MS	A141-03M	RAL138	01/30/15	12:34
5	RHMW06-GW-02MSD	A141-03S	RAL139	01/30/15	12:57
6	MBLK1W	SVA035WB	RAL140	01/30/15	13:21
7	RHMW07-GW-02	A141-01	RAL141	01/30/15	13:44
8	RHMW07-GW-02FD	A141-02	RAL142	01/30/15	14:08
9	RHMW06-GW-02	A141-03	RAL143	01/30/15	14:32

FORM V SV OLM02.0

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RLL004
Instrument ID: TOE9

Project:RED HILL PHASE 1B
SDG No.: 15A141
Date Analyzed: 12/10/14
Time Analyzed: 16:02

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	6944856	9.60	0	0.00	0	0.00
	UPPER LIMIT	13889712	10.10	0	0.50	0	0.50
	LOWER LIMIT	3472428	9.10	0	-0.50	0	-0.50
	SAMPLE ID						
1	SSTD500	5185341	9.59	0	0.00	0	0.00
2	LCS1W	6423996	9.59	0	0.00	0	0.00
3	LCD1W	6395837	9.60	0	0.00	0	0.00
4	RHMW06-GW-02MS	6517273	9.60	0	0.00	0	0.00
5	RHMW06-GW-02MSD	6083234	9.60	0	0.00	0	0.00
6	MBLK1W	8811620	9.59	0	0.00	0	0.00
7	RHMW07-GW-02	7049141	9.59	0	0.00	0	0.00
8	RHMW07-GW-02FD	6950436	9.60	0	0.00	0	0.00
9	RHMW06-GW-02	7027975	9.60	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 :12/10/14 15:43
Spike Amount :500 PPB
CC/CV File :RAL135
IC File :RLL004

Column Spec :ZB-SEMI ID :0.25MM
IC_Ending DateTime :12/10/14 17:34
HPChem Method :SVE9L10
Date_Time :01/30/15 11:01

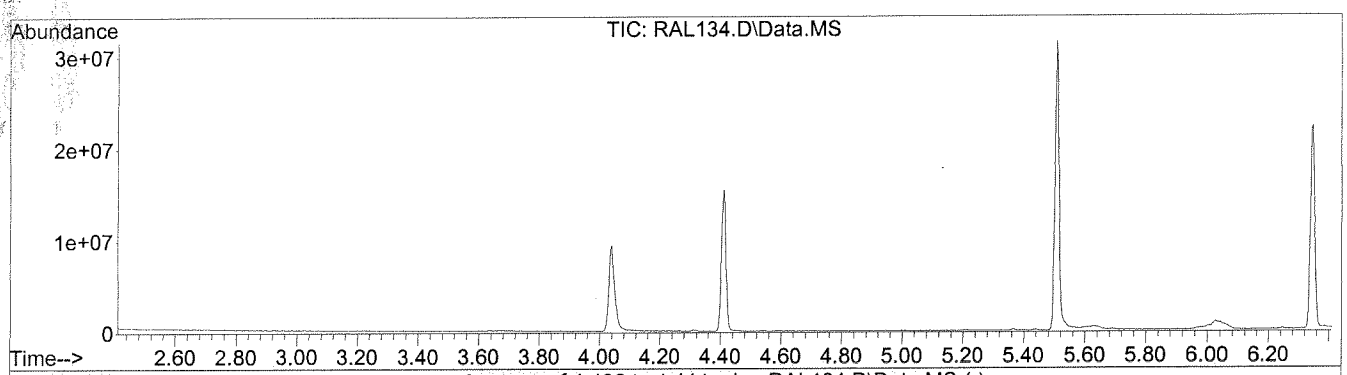
M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	Phenanthrene-d10	2000.00	0	5185341	1	1	9.594	9.600	0				
2	Naphthalene	574.236	14.8	2305506	1.778	1.549	5.911	5.918	8.15				
3	2-Methylnaphthalene	534.682	6.9	1695669	1.308	1.223	6.736	6.745	8.46				
4	1-Methylnaphthalene	518.527	3.7	1512108	1.166	1.125	6.854	6.861	8.35				
5	Acenaphthylene	560.095	12.0	2278477	1.758	1.569	7.780	7.787	9.34				
6	Acenaphthene	544.701	8.9	1469161	1.133	1.040	7.976	7.982	7.81				
7	Dibenzofuran	506.555	1.3	1627714	1.256	1.239	8.169	8.176	8.59				
8	Fluorene	532.521	6.5	1360175	1.049	0.985	8.553	8.561	8.52				
9	Phenanthrene	501.630	0.3	1530603	1.181	1.177	9.620	9.627	8.30				
10	Anthracene	536.743	7.3	1608361	1.241	1.156	9.679	9.684	8.07				
11	Fluoranthene	576.954	15.4	1335024	1.030	0.892	10.927	10.933	10.52				
12	Pyrene	576.124	15.2	1411462	1.089	0.945	11.179	11.184	10.52				
13	Terphenyl-d14	581.886	16.4	763611	0.589	0.506	11.322	11.330	10.93				
14	Benzo(a)anthracene	586.089	17.2	1710897	1.320	1.126	12.466	12.472	14.87				
15	Chrysene	597.138	19.4	1626701	1.255	1.051	12.505	12.511	11.62				
16	Benzo(b)fluoranthene	586.439	17.3	1334714	1.030	0.878	13.576	13.582	11.97				
17	Benzo(k)fluoranthene	571.701	14.3	1380715	1.065	0.932	13.605	13.613	10.74				
18	Benzo(a)pyrene	598.036	19.6	1277059	0.985	0.824	13.964	13.970	12.62				
19	Indeno(1,2,3-cd)pyrene	555.092	11.0	1259371	0.971	0.875	15.559	15.568	13.95				
20	Dibenzo(a,h)anthracene	573.719	14.7	992716	0.766	0.667	15.575	15.581	14.49				
21	Benzo(g,h,i)perylene	536.685	7.3	1047096	0.808	0.753	16.023	16.029	13.47				

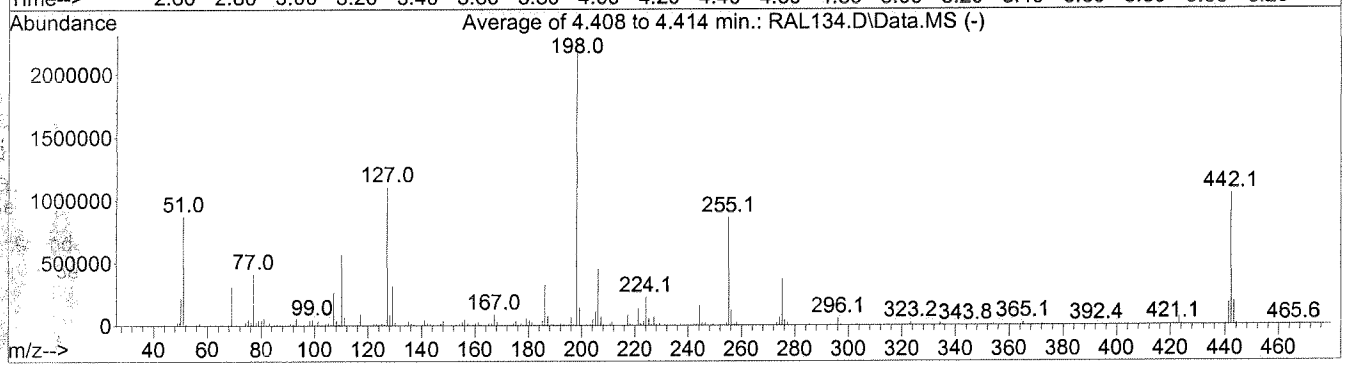
DFTPP

Data Path : C:\msdchem\1\DATA\15A30\
Data File : RAL134.D
Acq On : 30 Jan 2015 10:42
Operator : KVu
Sample : DFTE9L1007
Misc : E9
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : DFTPP
Last Update : Thu Dec 11 09:42:46 2014





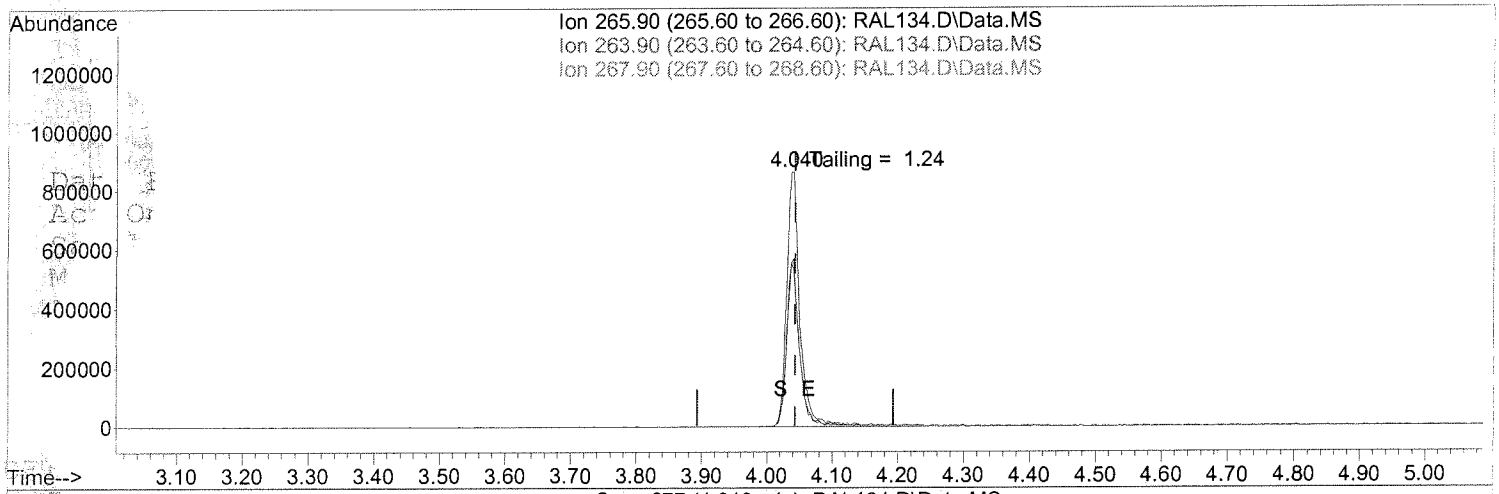
AutoFind: Scans 788, 789, 790; Background Corrected with Scan 778

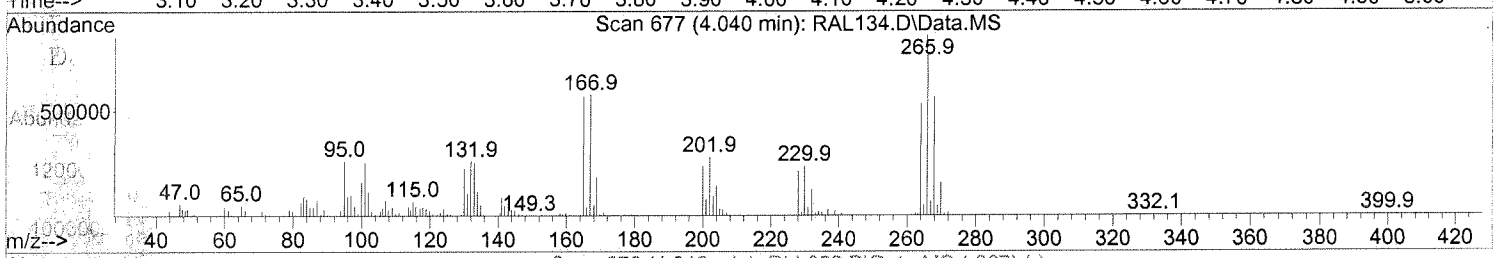
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.6	874027	PASS
68	69	0.00	2	1.7	5280	PASS
69	198	0.00	100	14.1	311360	PASS
70	69	0.00	2	0.4	1209	PASS
127	198	40	60	50.2	1108544	PASS
197	198	0.00	1	0.6	12613	PASS
198	198	100	100	100.0	2209621	PASS
199	198	5	9	6.2	137568	PASS
275	198	10	30	16.9	373867	PASS
365	198	1	100	1.0	22739	PASS
441	443	0.01	100	92.5	175424	PASS
442	198	40	100	47.5	1049067	PASS
443	442	17	23	18.1	189547	PASS

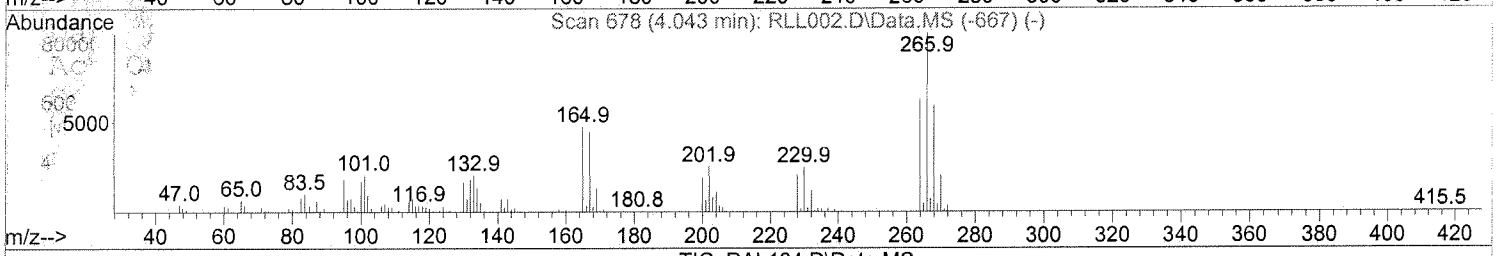
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\15A30\RAL134.D
Acq On : 30 Jan 2015 10:42
Sample : DFTE9L1007
Misc : E9
Integrator: RTE
Quant Time: Jan 30 10:59:38 2015
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RAL134.D\Data.MS

(1) Pentachlorophenol (T)

4.040min (-0.003) 39.04 ppm

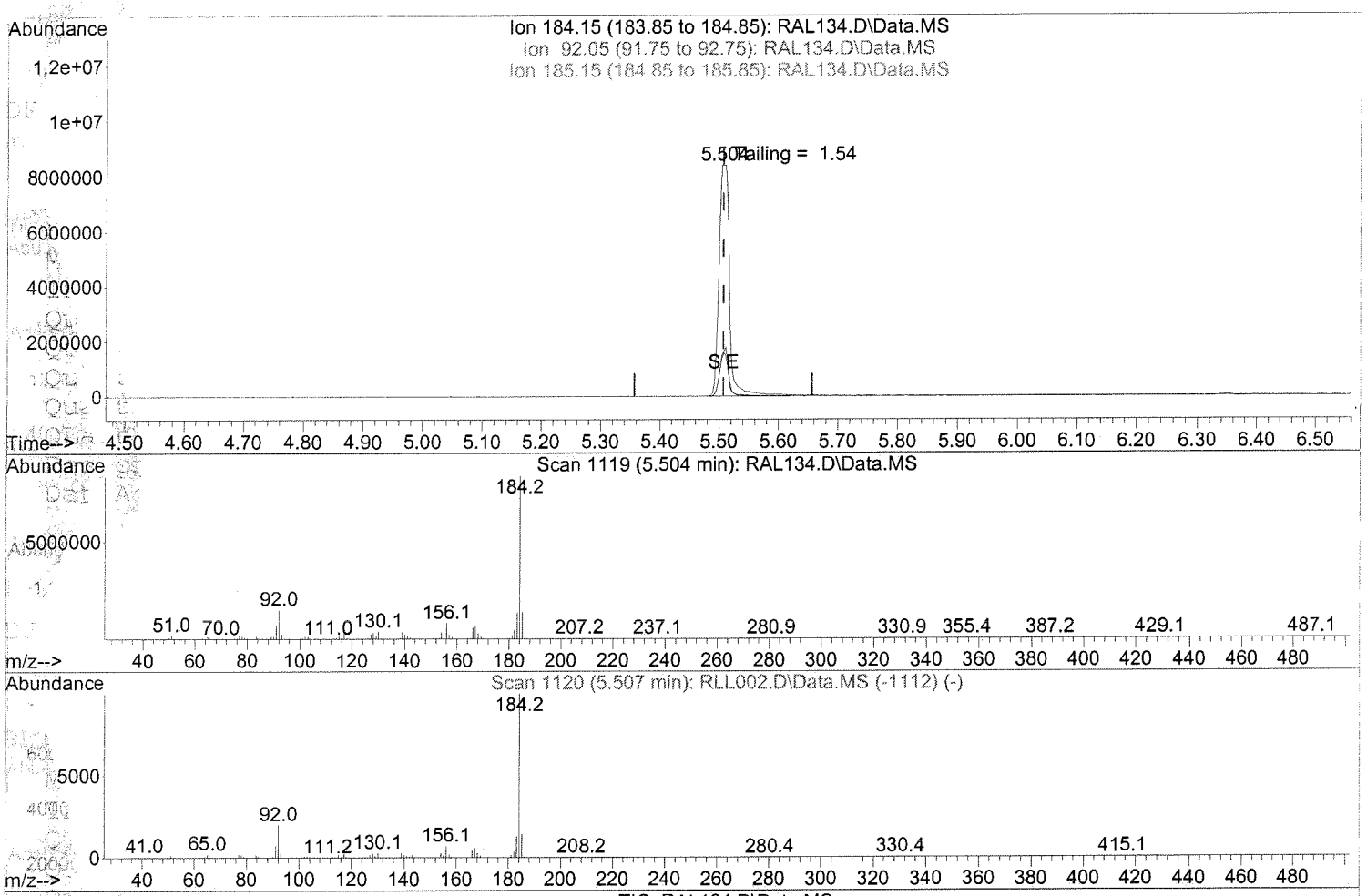
response 1174842

Ion	Exp%	Act%
265.90	100	100
263.90	65.60	63.49
267.90	62.70	63.63
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\15A30\RAL134.D
Acq On : 30 Jan 2015 10:42
Sample : DFTE9L1007
Misc : E9
Integrator: RTE
Quant Time: Jan 30 10:59:38 2015
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00



(3) Benzidine (T)

5.504min (-0.003) 56.50 ppm

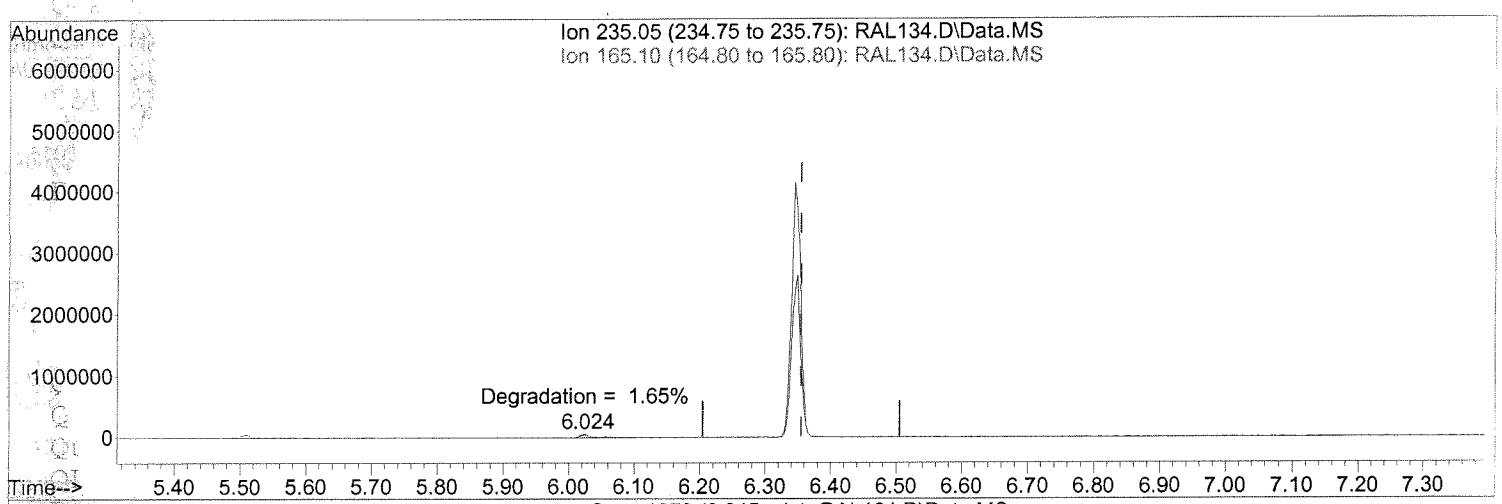
response 10171198

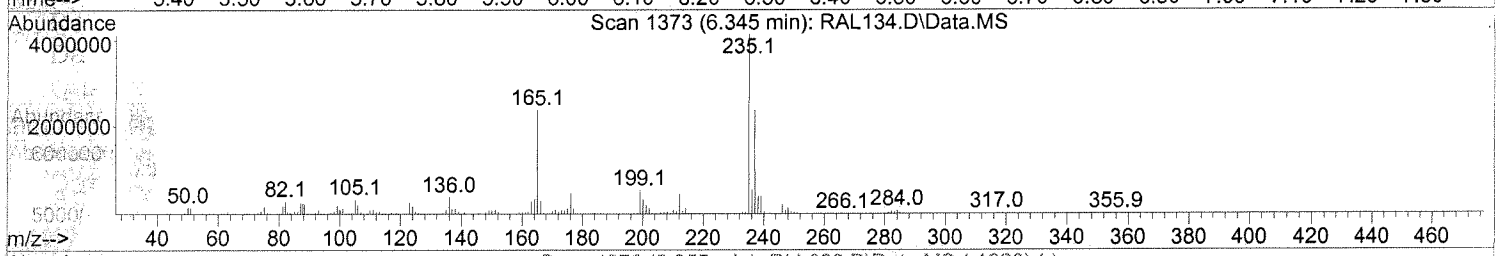
Ion	Exp%	Act%
184.15	100	100
92.05	20.90	16.91
185.15	14.90	15.80
0.00	0.00	0.00

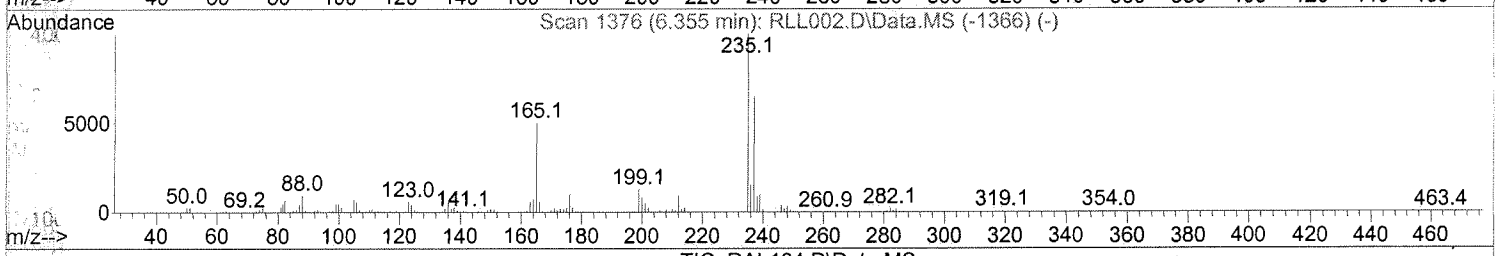
Quantitation Report (Qedit)

Data File : C:\msdchem\1\DATA\15A30\RAL134.D
Acq On : 30 Jan 2015 10:42
Sample : DFTE9L1007
Misc : E9
Integrator: RTE
Quant Time: Jan 30 10:59:38 2015
Quant Results File: DFTPPPAH.RES
Quant Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Quant Title : DFTPP
QLast Update : Thu Dec 11 09:42:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 2
Operator: KVu
Inst : DSQ
Multiplr: 1.00







TIC: RAL134.D\Data.MS

(6) DDT (T)

6.345min (-0.010) 59.21 ppm

response 4065254

Ion	Exp%	Act%
235.05	100	100
165.10	49.60	62.82
0.00	0.00	0.00
0.00	0.00	0.00

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\15A30\RAL135.D Vial: 3
Acq On : 30 Jan 2015 11:01 Operator: KVu
Sample : CSVE9L1007 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 11:38:50 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 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	75	0.00
2	T	Naphthalene	500.000	574.236	-14.8	92	0.00
3	T	2-Methylnaphthalene	500.000	534.682	-6.9	83	0.00
4	T	1-Methylnaphthalene	500.000	518.527	-3.7	81	0.00
5	T	Acenaphthylene	500.000	560.095	-12.0	87	0.00
6	C	Acenaphthene	500.000	544.702	-8.9	85	0.00
7	T	Dibenzofuran	500.000	506.555	-1.3	78	0.00
8	T	Fluorene	500.000	532.520	-6.5	82	0.00
9	T	Phenanthrene	500.000	501.630	-0.3	79	0.00
10	T	Anthracene	500.000	536.743	-7.3	82	0.00
11	C	Fluoranthene	500.000	576.954	-15.4	91	0.00
12	T	Pyrene	500.000	576.124	-15.2	90	0.00
13	S	Terphenyl-d14	500.000	581.886	-16.4	89	0.00
14	T	Benzo(a)anthracene	500.000	586.089	-17.2	96	0.00
15	T	Chrysene	500.000	597.138	-19.4	96	0.00
16	T	Benzo(b)fluoranthene	500.000	586.439	-17.3	87	0.00
17	T	Benzo(k)fluoranthene	500.000	571.701	-14.3	88	0.00
18	C	Benzo(a)pyrene	500.000	598.036	-19.6	88	0.00
19	T	Indeno(1,2,3-cd)pyrene	500.000	555.092	-11.0	81	0.00
20	T	Dibenzo(a,h)anthracene	500.000	573.719	-14.7	81	0.00
21	T	Benzo(g,h,i)perylene	500.000	536.685	-7.3	79	0.00

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

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\15A30\RAL135.D Vial: 3
Acq On : 30 Jan 2015 11:01 Operator: KVu
Sample : CSVE9L1007 Inst : DSQ
Misc : E9 Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 11:38:50 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 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	75	0.00
2	T	Naphthalene	1.549	1.778	-14.8	92	0.00
3	T	2-Methylnaphthalene	1.223	1.308	-7.0	83	0.00
4	T	1-Methylnaphthalene	1.125	1.166	-3.6	81	0.00
5	T	Acenaphthylene	1.569	1.758	-12.0	87	0.00
6	C	Acenaphthene	1.040	1.133	-8.9	85	0.00
7	T	Dibenzofuran	1.239	1.256	-1.4	78	0.00
8	T	Fluorene	0.985	1.049	-6.5	82	0.00
9	T	Phenanthrene	1.177	1.181	-0.3	79	0.00
10	T	Anthracene	1.156	1.241	-7.4	82	0.00
11	C	Fluoranthene	0.892	1.030	-15.5	91	0.00
12	T	Pyrene	0.945	1.089	-15.2	90	0.00
13	S	Terphenyl-d14	0.506	0.589	-16.4	89	0.00
14	T	Benzo(a)anthracene	1.126	1.320	-17.2	96	0.00
15	T	Chrysene	1.051	1.255	-19.4	96	0.00
16	T	Benzo(b)fluoranthene	0.878	1.030	-17.3	87	0.00
17	T	Benzo(k)fluoranthene	0.932	1.065	-14.3	88	0.00
18	C	Benzo(a)pyrene	0.824	0.985	-19.5	88	0.00
19	T	Indeno(1,2,3-cd)pyrene	0.875	0.971	-11.0	81	0.00
20	T	Dibenzo(a,h)anthracene	0.667	0.766	-14.8	81	0.00
21	T	Benzo(g,h,i)perylene	0.753	0.808	-7.3	79	0.00

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

Quantitation Report (QT Reviewed)

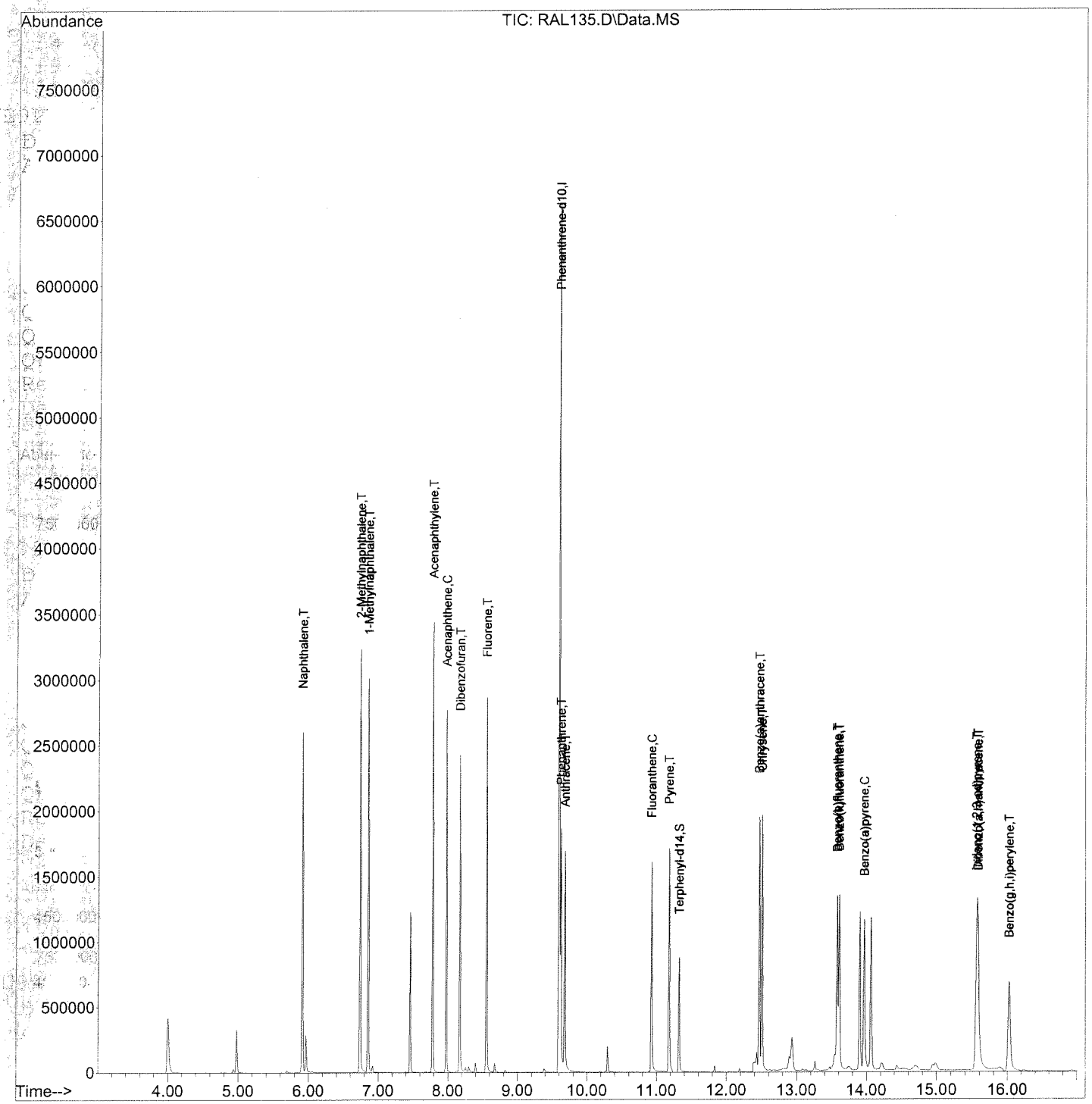
Data File : C:\msdchem\1\DATA\15A30\RAL135.D
Vial: 3
Acq On : 30 Jan 2015 11:01
Operator: KVu
Sample : CSVE9L1007
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 11:38:50 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 2014
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Phenanthrene-d10	9.594	188	5185341	2000.00 ppb	0.00
System Monitoring Compounds					
13) Terphenyl-d14	11.322	244	763611	581.89 ppb	0.00
Spiked Amount 500.000			Recovery	= 116.38%	
Target Compounds					Qvalue
2) Naphthalene	5.911	128	2305506	574.24 ppb	100
3) 2-Methylnaphthalene	6.736	142	1695669	534.68 ppb	96
4) 1-Methylnaphthalene	6.854	142	1512108	518.53 ppb	96
5) Acenaphthylene	7.780	152	2278477	560.09 ppb	98
6) Acenaphthene	7.976	153	1469161	544.70 ppb	99
7) Dibenzofuran	8.169	168	1627714	506.56 ppb	92
8) Fluorene	8.553	166	1360175	532.52 ppb	96
9) Phenanthrene	9.620	178	1530603	501.63 ppb	96
10) Anthracene	9.679	178	1608361	536.74 ppb	97
11) Fluoranthene	10.927	202	1335024	576.95 ppb	97
12) Pyrene	11.179	202	1411462	576.12 ppb	97
14) Benzo(a)anthracene	12.466	228	1710897	586.09 ppb	92
15) Chrysene	12.505	228	1626701	597.14 ppb	94
16) Benzo(b)fluoranthene	13.576	252	1334714	586.44 ppb	94
17) Benzo(k)fluoranthene	13.605	252	1380715	571.70 ppb	98
18) Benzo(a)pyrene	13.964	252	1277059	598.04 ppb	98
19) Indeno(1,2,3-cd)pyrene	15.559	276	1259371	555.09 ppb	94
20) Dibenzo(a,h)anthracene	15.576	278	992716	573.72 ppb	98
21) Benzo(g,h,i)perylene	16.023	276	1047096	536.68 ppb	98

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

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\15A30\RAL135.D
Vial: 3
Acq On : 30 Jan 2015 11:01
Operator: KVu
Sample : CSVE9L1007
Inst : DSQ
Misc : E9
Multiplr: 1.00
Integrator: RTE
Quant Time: Jan 30 11:38:50 2015
Quant Results File: SVE9L10.RES
Quant Method : C:\msdchem\1\METHODS\SVE9L10.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Wed Dec 10 18:52:46 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-8270D Rev. No. 1 ☑ EMAX-8270SIM Rev. No. 2 ☐ EMAX-CLPSVOA ☐ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AE9-004

Method File: SVE9L10 Tune File: LOWSIM Start Date/Time: 12/10/14 10:58 End Date/Time: 12/10/14 17:55

ANALYTICAL BATCH: SVE9L102

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RLL001	IBE9L1001	1			
	2	DFTE9L1001				
	3	SVE9L101				1000ppb
	4	2				500
	5	3				100
	6	4				50
	7	5				40
	8	6				20
	9	ISVE9L101				ICV Soir low
NA	10	14L012-01				QC
		KV 12/10/14				

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	12/10/14
ICAL ID	SVE9L10

Standards

Name	ID	Conc. (mg/L)
DFTPP	SS2C-11-25-03	50
INT. STD.	SS2B-10-50-02	2000
ICV	SS2C-11-28-02	0.5
DCC	SS2C-11-28-01	.02-1
BENZIDINE		
APP 9		
APP 9 ADD		

Solvent	ID
CH_2Cl_2	54184
DATA FILE	14L10

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOE9	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Comments: Syringe ID: 499766-1

Analyzed By: KV

Date Disposed: NA

Disposed By: NA

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 #: AE9-004

Method File: SVE9 L10 Tune File: LOWSIM Start Date/Time: 12/11/14 12:00 End Date/Time: 12/11/14 12:11

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
NA	RLL 011	IBE9 L1002	1			
↓	↓ 012	DFTE9L1002	↓			
↓	↓ 013	ISVE9L102	↓			
		KV 12/11/14				

ANALYTICAL BATCH: CSVE9 L1002

	Instrument No:	E9
INITIAL CALIBRATION REFERENCE		
Date	SVE9L10	
ICAL ID	12/10/14	
Standards		
Name	ID	Conc. (mg/L)
DFTPP	SS2C-11-25-03	50
INT. STD.	SS2B-10-50-02	2000
ICV	SS2C-11-28-02	0.5
DCC	∅	
BENZIDINE		
APP 9		
APP 9 ADD		
Solvent	ID	
CH_2Cl_2	54184	
DATA FILE	14L11	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOE9		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Comments: Syringe ID: 499766-1

Analyzed By: KV

Date Disposed: NA

Disposed By: NA

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 #: AE9-004

Method File: SVE9L10 Tune File: LOWSIM Start Date/Time: 1/30/15 10:42 End Date/Time: 1/30/15 14:32

ANALYTICAL BATCH: CSVE9L1007

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RAL133	IBE9L1007				
	134	DFTE9L1007				
	135	CSVE9L1007				
SVA035W	136	SVA035WL	1		X	
	137	WC				
	138	15A141-03M				
	139	03S				
	140	SVA035WB				
	141	15A141-01				
	142	02				
	143	03				
						NV 1/30/15

Instrument No:	E9
INITIAL CALIBRATION REFERENCE	
Date	12/10/14
ICAL ID	SVE9L10
Standards	
Name	ID	Conc. (mg/L)
DFTPP	SS2C-11-30-02	50
INT. STD.	SS2B-10-50-02	2000
ICV		
DCC	SS2C-11-32-02	0.5
BENZIDINE		
APP 9		
APP 9 ADD		
Solvent	ID	
CH_2Cl_2	54184	
DATA FILE	15A30	
Electronic Data Archival		
Location	Date	
HPCHEM_SVOA/TOE9		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Comments: Syringe ID 499766-1

Analyzed By: NV

Date Disposed: 1/30/15

Disposed By: NV

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-084

Preparation Batch: SVA035W

Matrix: water

Micropipette ID: ~~PE97A-01 (200 µL)~~ AGG 1/27/15 PE997C-03

Micropipette ID: PE00-01

Standards	ID	Amount Added (ml)
Surrogate	SS2A-06-348 AGG 1/27	~~0.4~~ 0.01
LCS/MS ~~AGG 1/27/15 FULL LIST~~ SIM ~~Ultra Low~~	SS2A-06-347	0.25
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	54184
Na_2SO_4	SW1B-002-64-19
H_2SO_4	
NaOH	SP1B-06-87-01
Silica Sand	
Silica Gel	
Reagent Water	SW1A-005-10-23
Residual Chlorine Strip	42422
pH Strip	HC413032
Filter Paper	9592070 B

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVA035 WB			1
WL			1
WC			1
A141 -02			1
-01			1
-03			1
-03M			1
-03S			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 / AGG Witnessed By: AGG

Standard Added By: JM Checked By:

Extract Received By: DJ 1/29/15 Location: SE03 #06

Disposed By: Disposed On:

3084

FileID: SVA035W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
15SVA035W01	SVA035WB	1000	ml	1/28/15 17:54	1	1000	1	1	
15SVA035W02	SVA035WL	1000	ml	1/28/15 17:54	1	1000	1	1	SIM ULTRA LOW
15SVA035W03	SVA035WC	1000	ml	1/28/15 17:54	1	1000	1	1	SIM ULTRA LOW
15SVA035W04	A141-01	910	ml	1/28/15 17:54	1	1000	1	1.1	
15SVA035W05	A141-02	1000	ml	1/28/15 17:54	1	1000	1	1	
15SVA035W06	A141-03	970	ml	1/28/15 17:54	1	1000	1	1.03	
15SVA035W07	A141-03M	970	ml	1/28/15 17:54	1	1000	1	1.03	
15SVA035W08	A141-03S	890	ml	1/28/15 17:54	1	1000	1	1.12	

Ve=extract volume PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 1/28/15 10:15 ☐ pHAdj(≤2) @ Prepared By: AGalan

☑ Extraction Ended @ 1/29/15 11:00 ☑ pHAdj(≥11) @ 1/28/15 17:00 Checked By: JM

Comments: Volumes entered after extraction started, pH 6-7, Cl not detected in all samples. Date 1/29/15

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 15A141

CASE NARRATIVE

Client : BATTELLE

Project: RED HILL PHASE 1B

SDG : 15A141

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of four(4) water samples were received on 01/24/15 to be analyzed for Total Petroleum Hydrocarbons by Purge And Trap in accordance with Method SW5030B/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. VG39A17B - 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. GRO was within LCS QC limits in VG39A17L/VG39A17C. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. GRO was within LCS QC limits in A141-03M/A141-03S. Refer to Matrix QC summary form for details.

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
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : BATTELLE
Project : RED HILL PHASE 1B
SDG NO. : 15A141
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	VG39A17B	1	NA	01/27/1513:27	01/27/1513:27	EA27006A	EA27003A	VG39A17	Method Blank
LCS1W	VG39A17L	1	NA	01/27/1512:05	01/27/1512:05	EA27004A	EA27003A	VG39A17	Lab Control Sample (LCS)
LCD1W	VG39A17C	1	NA	01/27/1512:44	01/27/1512:44	EA27005A	EA27003A	VG39A17	LCS Duplicate
RHMW07-GW-02	A141-01	1	NA	01/27/1514:45	01/27/1514:45	EA27008A	EA27003A	VG39A17	Field Sample
RHMW07-GW-02FD	A141-02	1	NA	01/27/1515:24	01/27/1515:24	EA27009A	EA27003A	VG39A17	Field Sample
RHMW06-GW-02	A141-03	1	NA	01/27/1516:03	01/27/1516:03	EA27010A	EA27003A	VG39A17	Field Sample
TRIP BLANK 1/23/15	A141-04	1	NA	01/27/1514:06	01/27/1514:06	EA27007A	EA27003A	VG39A17	Field Sample
RHMW06-GW-02MS	A141-03M	1	NA	01/27/1516:42	01/27/1516:42	EA27011A	EA27003A	VG39A17	Matrix Spike Sample (MS)
RHMW06-GW-02MSD	A141-03S	1	NA	01/27/1517:21	01/27/1517:21	EA27012A	EA27003A	VG39A17	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: BATTELLE	Date Collected:	01/22/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/27/15 14:45
Sample ID:	RHMW07-GW-02	Date Analyzed:	01/27/15 14:45
Lab Samp ID:	A141-01	Dilution Factor:	1
Lab File ID:	EA27008A	Matrix :	WATER
Ext Btch ID:	VG39A17	% Moisture :	NA
Calib. Ref.:	EA27003A	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	0.0338	0.04000	84.5	70-130

Parameter	H-C Range
GRO	C6-C10

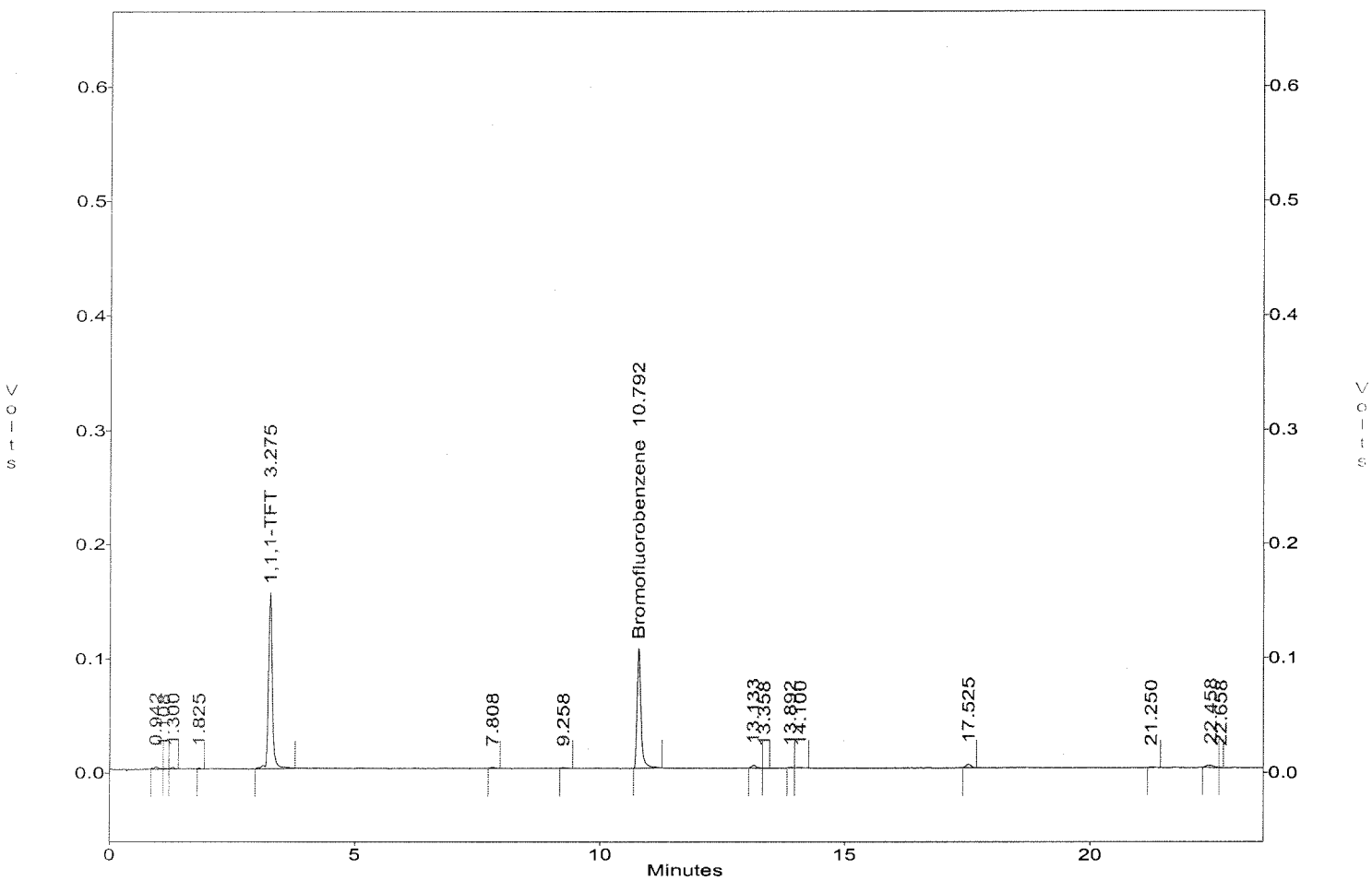
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.008
Method : c:\ezchrom\methods\Vg39l03.met
Sample ID : 15A141-01 5.0ML W
Acquired : Jan 27, 2015 14:45:22
Printed : Jan 27, 2015 15:08:54
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
5	1,1,1-TFT	3.275	833757.0	21932.0	38.02
8	Bromofluorobenzene	10.792	583567.0	17272.2	33.79
G1	GASOLINE(TOTAL)		93915.0	28525.8	3.29
G2	GRO(C6-C10)		11440.0	20202.7	0.57
G3	GRO(2MP-124TMB)		11440.0	20051.6	0.57
G4	GRO(C5-C12)		68172.0	27267.5	2.50
G5	GRO(C6-C12)		59345.0	27191.0	2.18
G6	GRO(C5-C10)		20267.0	20279.2	1.00

c:\ezchrom\chrom\EA27\Ea27.008 -- Channel A



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: BATTELLE	Date Collected:	01/22/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/27/15 15:24
Sample ID:	RHMW07-GW-02FD	Date Analyzed:	01/27/15 15:24
Lab Samp ID:	A141-02	Dilution Factor:	1
Lab File ID:	EA27009A	Matrix :	WATER
Ext Btch ID:	VG39A17	% Moisture :	NA
Calib. Ref.:	EA27003A	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

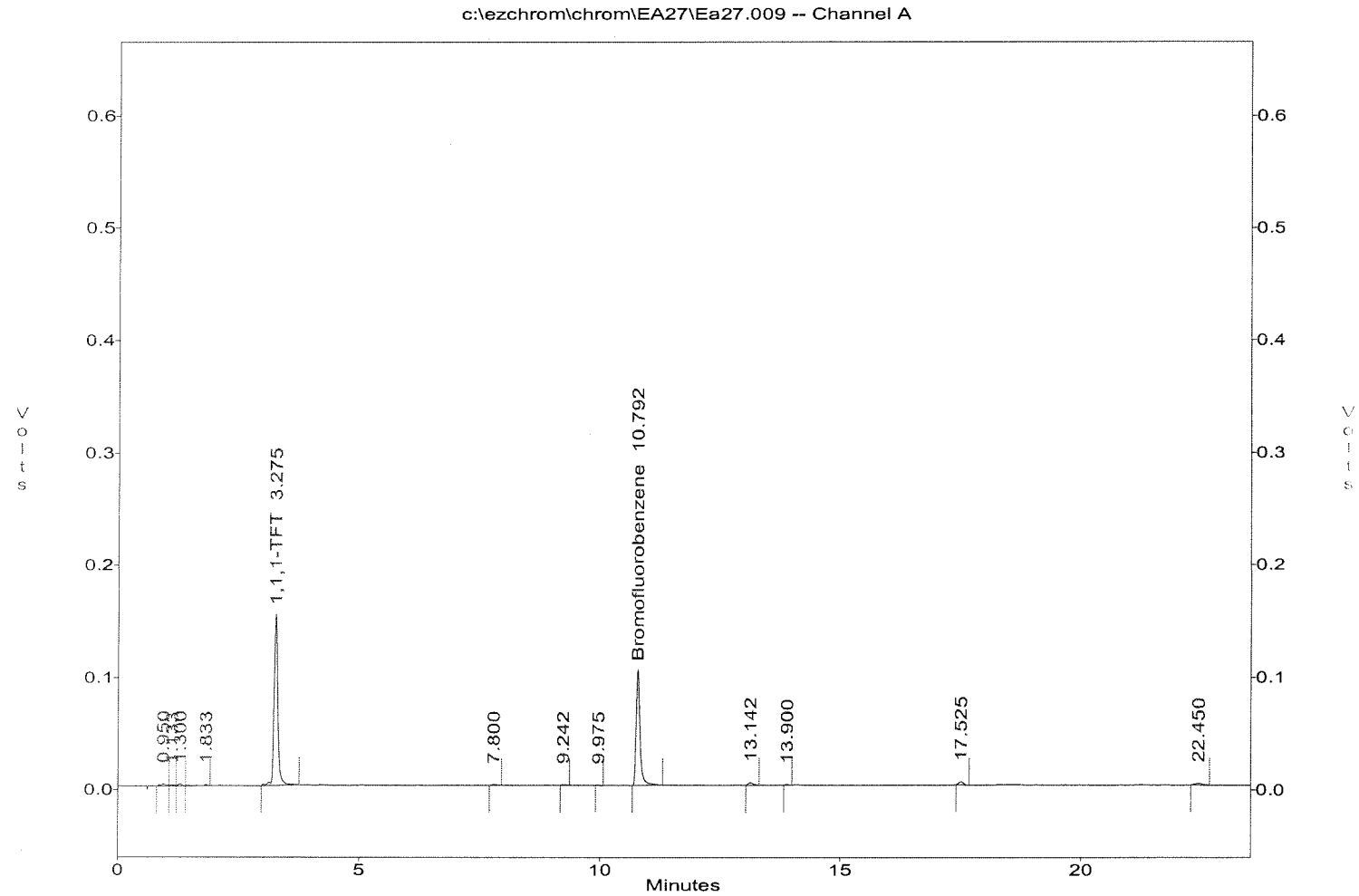
Parameter	H-C Range
GRO	C6-C10

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.009
Method : c:\ezchrom\methods\Vg39103.met
Sample ID : 15A141-02 5.0ML W
Acquired : Jan 27, 2015 15:24:16
Printed : Jan 27, 2015 15:47:48
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
5	1,1,1-TFT	3.275	827860.0	21932.0	37.75
9	Bromofluorobenzene	10.792	581021.0	17272.2	33.64
G1	GASOLINE(TOTAL)		83965.0	28525.8	2.94
G2	GRO(C6-C10)		16153.0	20202.7	0.80
G3	GRO(2MP-124TMB)		16153.0	20051.6	0.81
G4	GRO(C5-C12)		67404.0	27267.5	2.47
G5	GRO(C6-C12)		52446.0	27191.0	1.93
G6	GRO(C5-C10)		31111.0	20279.2	1.53



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: BATTELLE	Date Collected:	01/23/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/27/15 16:03
Sample ID:	RHMW06-GW-02	Date Analyzed:	01/27/15 16:03
Lab Samp ID:	A141-03	Dilution Factor:	1
Lab File ID:	EA27010A	Matrix :	WATER
Ext Btch ID:	VG39A17	% Moisture :	NA
Calib. Ref.:	EA27003A	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	0.0338	0.04000	84.5	70-130

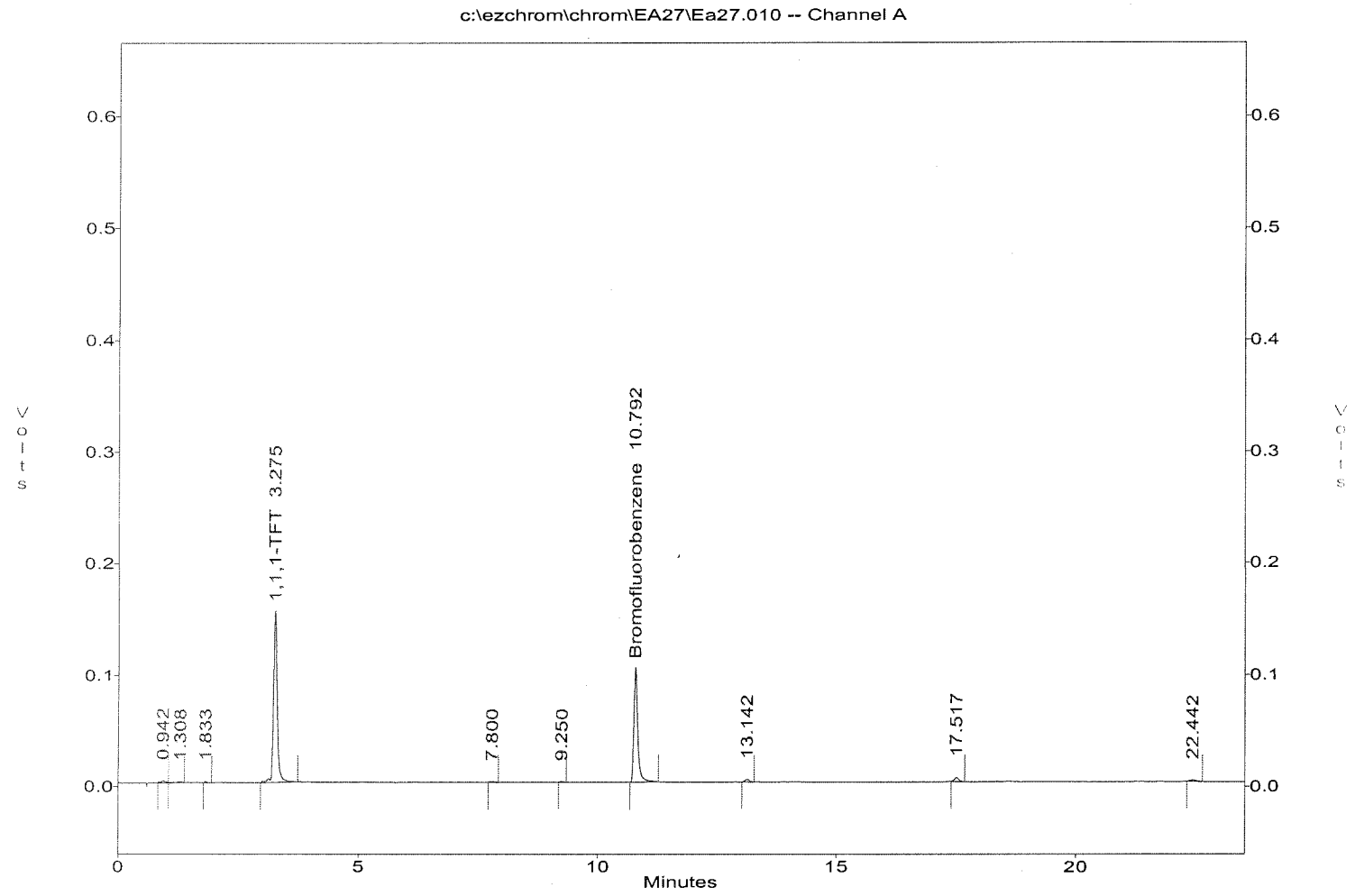
Parameter	H-C Range
GRO	C6-C10

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.010
Method : c:\ezchrom\methods\Vg39103.met
Sample ID : 15A141-03 5.0ML W
Acquired : Jan 27, 2015 16:03:09
Printed : Jan 27, 2015 16:26:41
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.275	831070.0	21932.0	37.89
7	Bromofluorobenzene	10.792	584000.0	17272.2	33.81
G1	GASOLINE(TOTAL)		69158.0	28525.8	2.42
G2	GRO(C6-C10)		9771.0	20202.7	0.48
G3	GRO(2MP-124TMB)		9771.0	20051.6	0.49
G4	GRO(C5-C12)		57718.0	27267.5	2.12
G5	GRO(C6-C12)		48319.0	27191.0	1.78
G6	GRO(C5-C10)		19170.0	20279.2	0.95



METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: BATTELLE	Date Collected:	01/23/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/27/15 14:06
Sample ID:	TRIP BLANK 1/23/15	Date Analyzed:	01/27/15 14:06
Lab Samp ID:	A141-04	Dilution Factor:	1
Lab File ID:	EA27007A	Matrix :	WATER
Ext Btch ID:	VG39A17	% Moisture :	NA
Calib. Ref.:	EA27003A	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	0.0345	0.04000	86.2	70-130

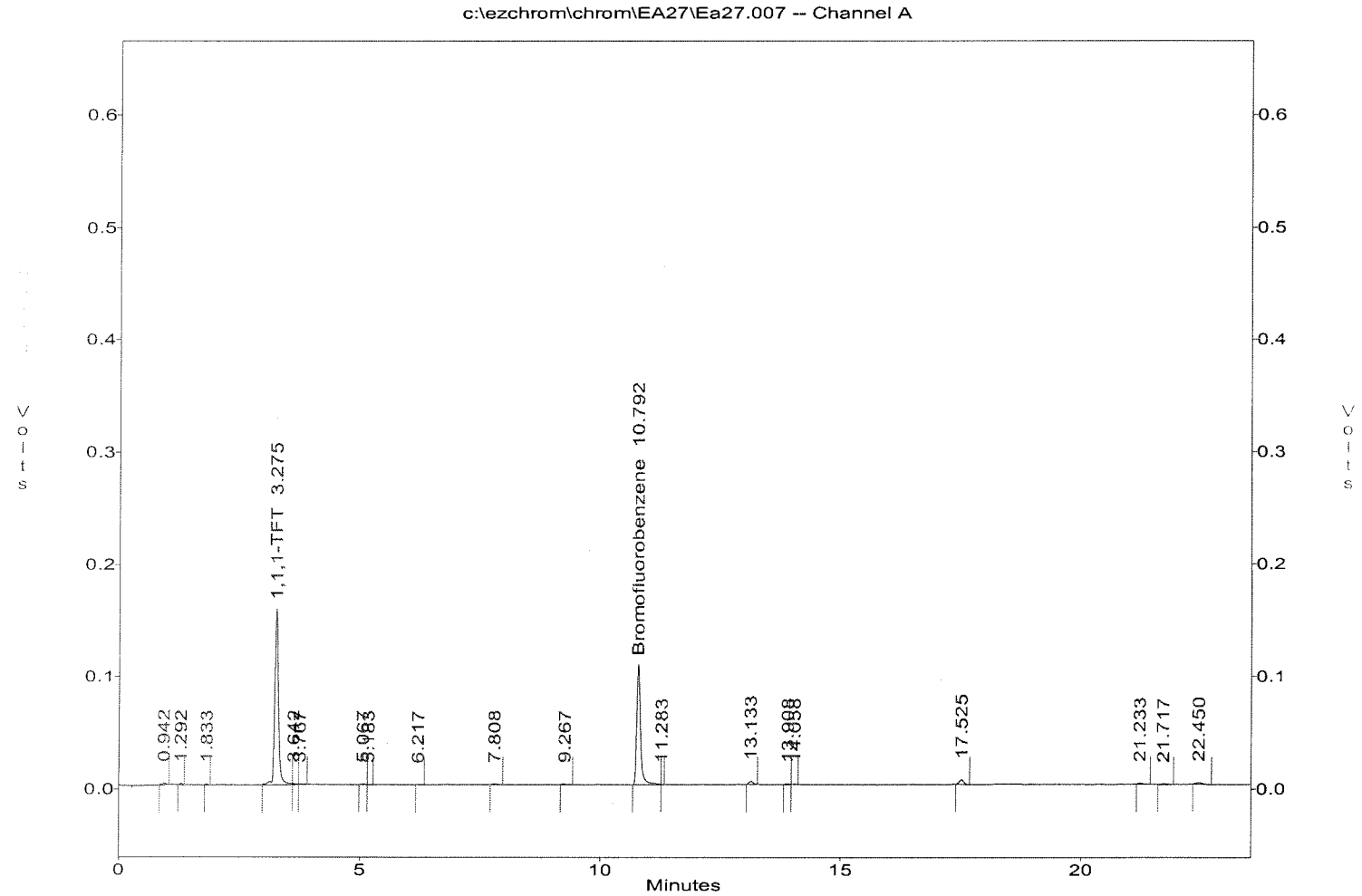
Parameter	H-C Range
GRO	C6-C10

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.007
Method : c:\ezchrom\methods\Vg39l03.met
Sample ID : 15A141-04 5.0ML W
Acquired : Jan 27, 2015 14:06:29
Printed : Jan 27, 2015 14:30:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
4	1,1,1-TFT	3.275	838852.0	21932.0	38.25
12	Bromofluorobenzene	10.792	595607.0	17272.2	34.48
G1	GASOLINE(TOTAL)		111870.0	28525.8	3.92
G2	GRO(C6-C10)		29998.0	20202.7	1.48
G3	GRO(2MP-124TMB)		29998.0	20051.6	1.50
G4	GRO(C5-C12)		83699.0	27267.5	3.07
G5	GRO(C6-C12)		79312.0	27191.0	2.92
G6	GRO(C5-C10)		34385.0	20279.2	1.70



QC SUMMARIES

METHOD SW5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: BATTELLE	Date Collected:	NA
Project	: RED HILL PHASE 1B	Date Received:	01/27/15
Batch No.	: 15A141	Date Extracted:	01/27/15 13:27
Sample ID:	MBLK1W	Date Analyzed:	01/27/15 13:27
Lab Samp ID:	VG39A17B	Dilution Factor:	1
Lab File ID:	EA27006A	Matrix :	WATER
Ext Btch ID:	VG39A17	% Moisture :	NA
Calib. Ref.:	EA27003A	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	0.0341	0.04000	85.1	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.: 15A141
METHOD: SW5030B/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VG39A17B	VG39A17L	VG39A17C		
LAB FILE ID:	EA27006A	EA27004A	EA27005A		
DATE EXTRACTED:	01/27/1513:27	01/27/1512:05	01/27/1512:44	DATE COLLECTED:	NA
DATE ANALYZED:	01/27/1513:27	01/27/1512:05	01/27/1512:44	DATE RECEIVED:	01/27/15
PREP. BATCH:	VG39A17	VG39A17	VG39A17		
CALIB. REF:	EA27003A	EA27003A	EA27003A		

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	0.479	96	0.500	0.514	103	7	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	0.0400	100	0.0400	0.0400	100	70-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 15A141
METHOD: SW5030B/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	RHMW06-GW-02				
LAB SAMP ID:	A141-03	A141-03M	A141-03S		
LAB FILE ID:	EA27010A	EA27011A	EA27012A		
DATE EXTRACTED:	01/27/1516:03	01/27/1516:42	01/27/1517:21	DATE COLLECTED:	01/23/15
DATE ANALYZED:	01/27/1516:03	01/27/1516:42	01/27/1517:21	DATE RECEIVED:	01/24/15
PREP. BATCH:	VG39A17	VG39A17	VG39A17		
CALIB. REF:	EA27003A	EA27003A	EA27003A		

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	0.474	95	0.500	0.498	100	5	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	0.0388	97	0.0400	0.0395	99	70-130

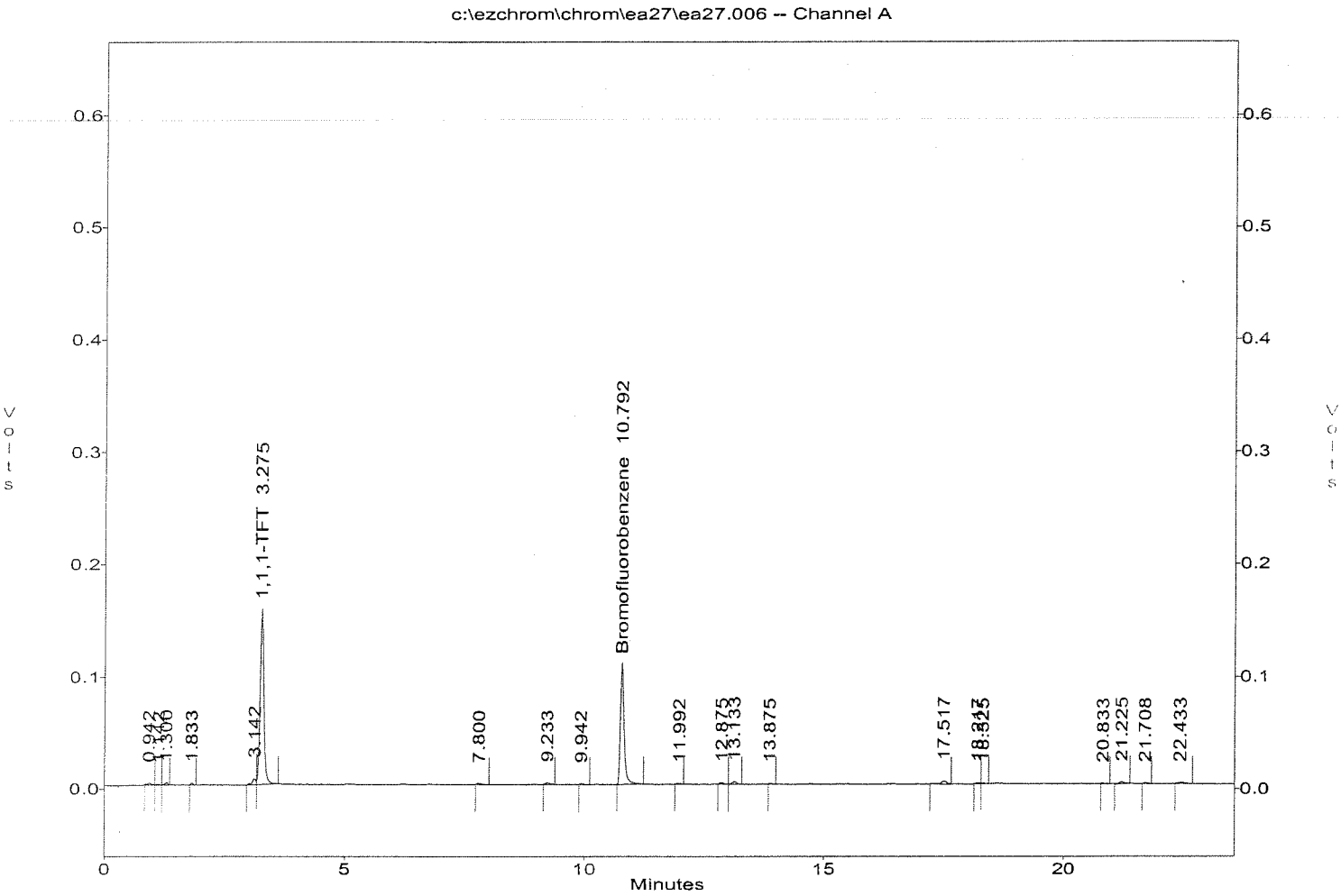
QC DATA

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea27\ea27.006
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39A17B 5.0ML W
Acquired : Jan 27, 2015 13:27:35
Printed : Jan 27, 2015 14:25:21
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	3.275	805158.0	21932.0	36.71
10	Bromofluorobenzene	10.792	588125.0	17272.2	34.05
G1	GASOLINE(TOTAL)		125461.0	28525.8	4.40
G2	GRO(C6-C10)		38010.0	20202.7	1.88
G3	GRO(2MP-124TMB)		30933.0	20051.6	1.54
G4	GRO(C5-C12)		97688.0	27267.5	3.58
G5	GRO(C6-C12)		84806.0	27191.0	3.12
G6	GRO(C5-C10)		50892.0	20279.2	2.51



4017

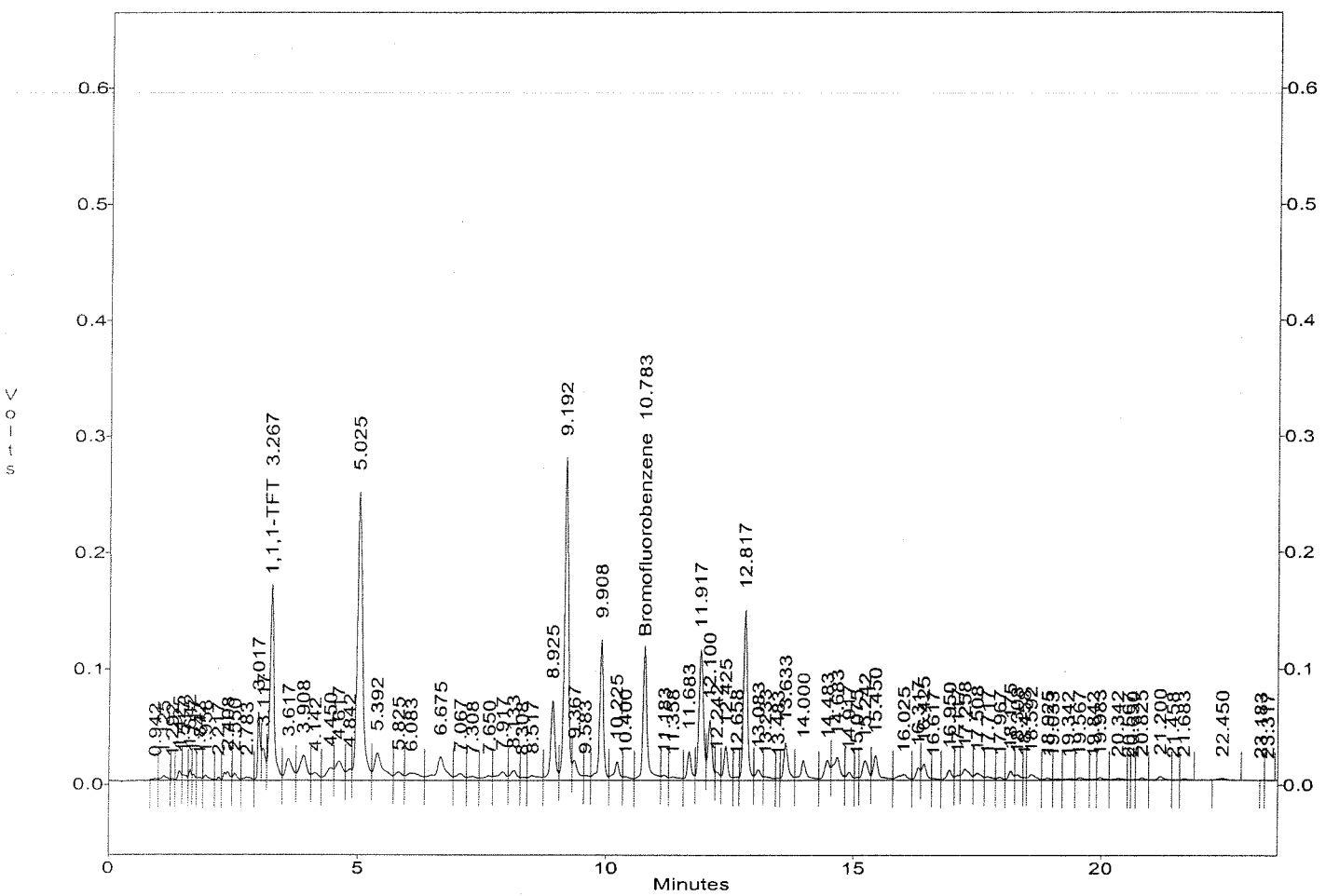
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\ea27\ea27.004
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39A17L 5.0ML W
Acquired : Jan 27, 2015 12:05:59
Printed : Jan 27, 2015 13:09:21
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
16	1,1,1-TFT	3.267	936458.0	21932.0	42.70
42	Bromofluorobenzene	10.783	690246.0	17272.2	39.96
G1	GASOLINE(TOTAL)		11869006.0	28525.8	416.08
G2	GRO(C6-C10)		9681393.0	20202.7	479.21
G3	GRO(2MP-124TMB)		9748167.0	20051.6	486.15
G4	GRO(C5-C12)		11663798.0	27267.5	427.75
G5	GRO(C6-C12)		11556023.0	27191.0	425.00
G6	GRO(C5-C10)		9789168.0	20279.2	482.72

c:\ezchrom\chrom\ea27\ea27.004 -- Channel A



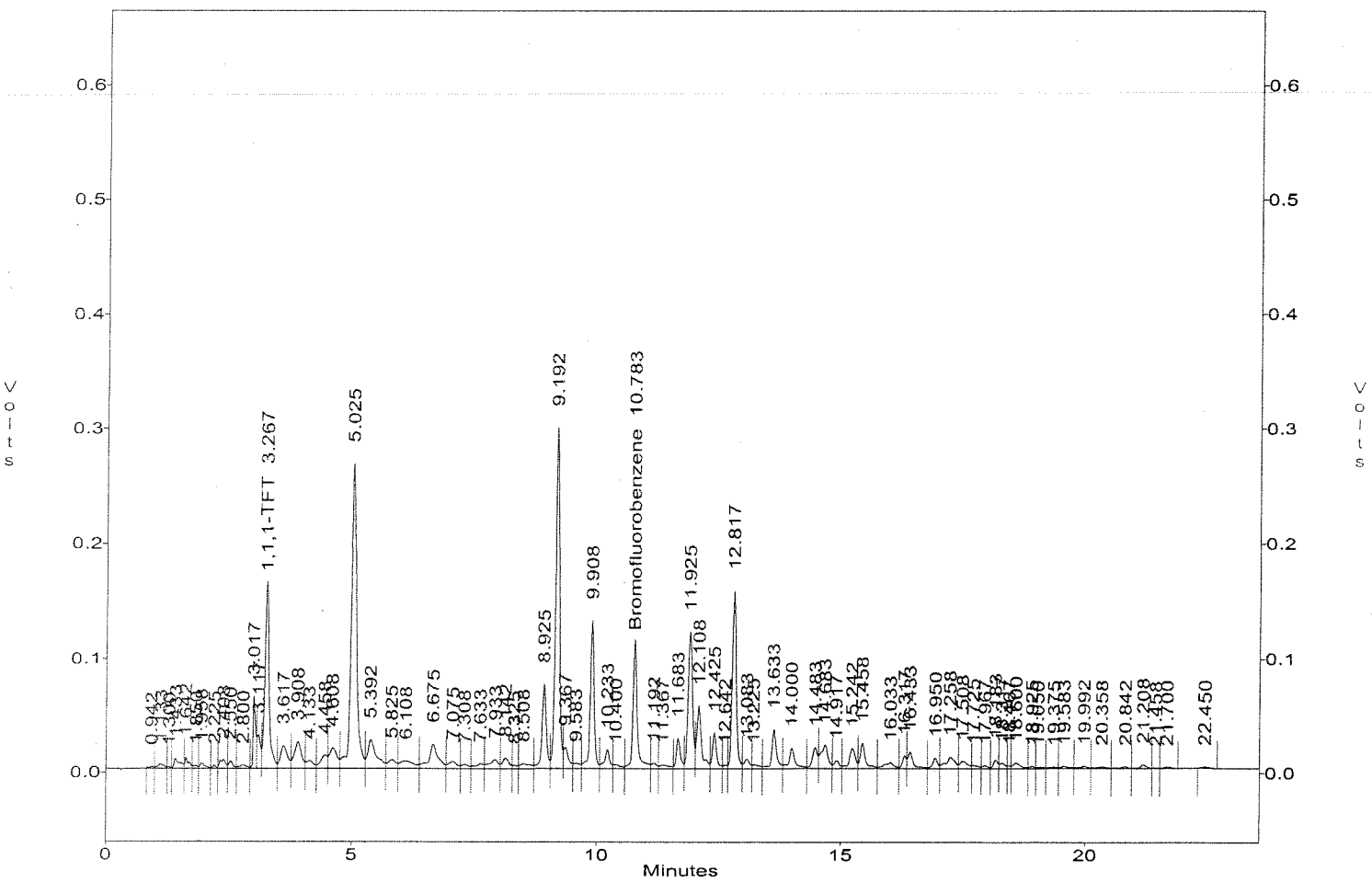
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.005
Method : c:\ezchrom\methods\Vg39l03.met
Sample ID : VG39A17C 5.0ML W
Acquired : Jan 27, 2015 12:44:34
Printed : Jan 27, 2015 13:08:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
14	1,1,1-TFT	3.267	934992.0	21932.0	42.63
39	Bromofluorobenzene	10.783	691072.0	17272.2	40.01
G1	GASOLINE(TOTAL)		12674863.0	28525.8	444.33
G2	GRO(C6-C10)		10392408.0	20202.7	514.41
G3	GRO(2MP-124TMB)		10463567.0	20051.6	521.83
G4	GRO(C5-C12)		12470506.0	27267.5	457.34
G5	GRO(C6-C12)		12356862.0	27191.0	454.45
G6	GRO(C5-C10)		10506052.0	20279.2	518.07

c:\ezchrom\chrom\EA27\Ea27.005 -- Channel A



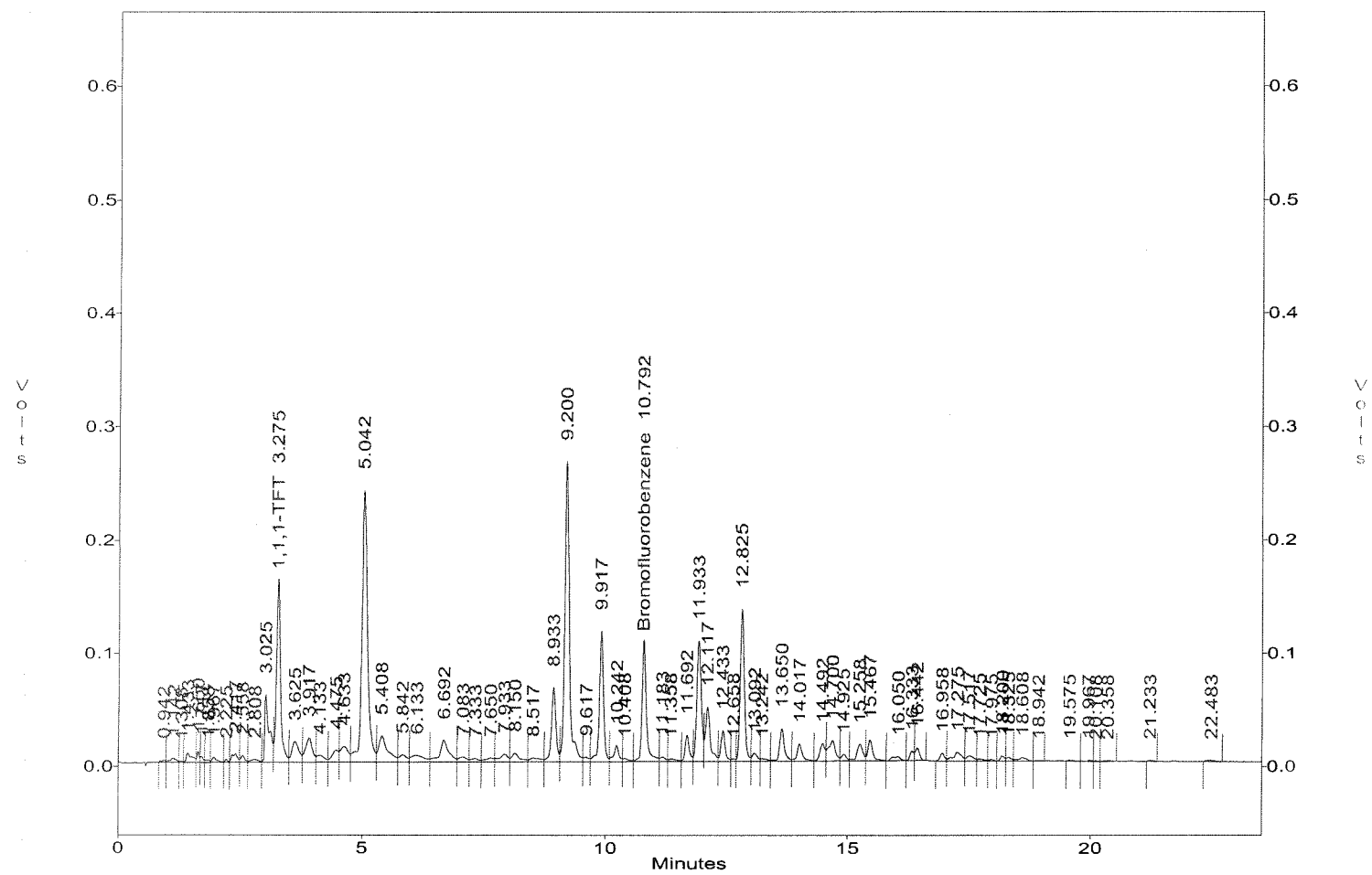
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.011
Method : c:\ezchrom\methods\Vg39l03.met
Sample ID : 15A141-03M 5.0ML W
Acquired : Jan 27, 2015 16:42:03
Printed : Jan 27, 2015 17:05:35
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
14	1,1,1-TFT	3.275	939260.0	21932.0	42.83
37	Bromofluorobenzene	10.792	671006.0	17272.2	38.85
G1	GASOLINE(TOTAL)		11132466.0	28525.8	390.26
G2	GRO(C6-C10)		9566200.0	20202.7	473.51
G3	GRO(2MP-124TMB)		9635088.0	20051.6	480.51
G4	GRO(C5-C12)		11092150.0	27267.5	406.79
G5	GRO(C6-C12)		10982137.0	27191.0	403.89
G6	GRO(C5-C10)		9676213.0	20279.2	477.15

c:\ezchrom\chrom\EA27\Ea27.011 -- Channel A



4020

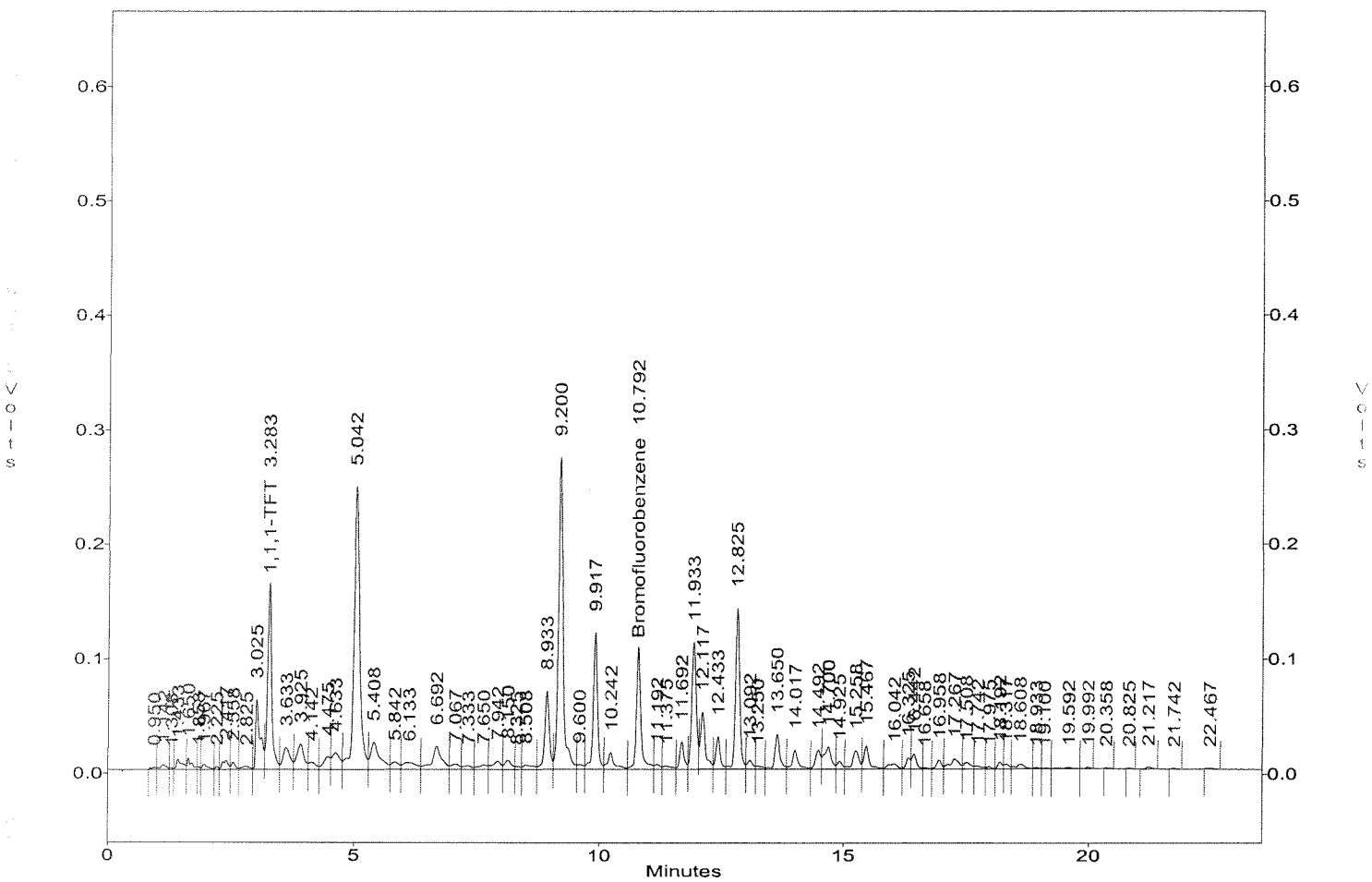
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.012
Method : c:\ezchrom\methods\Vg39l03.met
Sample ID : 15A141-03S 5.0ML W
Acquired : Jan 27, 2015 17:21:04
Printed : Jan 27, 2015 17:44:36
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
13	1,1,1-TFT	3.283	940458.0	21932.0	42.88
36	Bromofluorobenzene	10.792	682486.0	17272.2	39.51
G1	GASOLINE(TOTAL)		11946070.0	28525.8	418.78
G2	GRO(C6-C10)		10062424.0	20202.7	498.07
G3	GRO(2MP-124TMB)		10134799.0	20051.6	505.44
G4	GRO(C5-C12)		11878082.0	27267.5	435.61
G5	GRO(C6-C12)		11764227.0	27191.0	432.65
G6	GRO(C5-C10)		10176279.0	20279.2	501.81

c:\ezchrom\chrom\EA27\Ea27.012 -- Channel A



4021

INITIAL CALIBRATIONS

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EL03017A 12/03/14 21:40
LFID & Datetime: EL03018A 12/03/14 22:19
LFID & Datetime: EL03019A 12/03/14 22:58
LFID & Datetime: EL03020A 12/03/14 23:36
LFID & Datetime: EL03021A 12/04/14 00:15
LFID & Datetime: EL03022A 12/04/14 00:54
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	31356	26061	25679	29861	29093	29105	28525.8	7.8
GRO(C6-C10)	20.00	20021	18606	18257	21897	21278	21157	20202.7	7.4
GRO(2MP-124TMB)	20.00	19625	18411	18227	21801	21181	21064	20051.6	7.6
GRO(C5-C12)	20.00	27841	24827	24740	29258	28511	28429	27267.5	7.2
GRO(C6-C12)	20.00	27634	24697	24642	29252	28501	28420	27191.0	7.4
GRO(C5-C10)	20.00	20229	18736	18354	21903	21288	21166	20279.2	7.2
SURROGATE	X	1.00X	2.00X	3.00X	4.00X	5.00X	8.00X	MEAN	%RSD
Bromofluorobenzene	10.00	14673	14941	15295	19808	19572	19344	17272.2	14.7
1,1,1-Trifluorotoluene	10.00	22661	21485	21245	22024	22063	22115	21932.0	2.3

VG39L03.MET

AA 12/08/14

INITIAL CALIBRATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Column : DB-5
Column size ID : 30MX.53MM
LFID & Datetime: EL03017A 12/03/14 21:40
LFID & Datetime: EL03018A 12/03/14 22:19
LFID & Datetime: EL03019A 12/03/14 22:58
LFID & Datetime: EL03020A 12/03/14 23:36
LFID & Datetime: EL03021A 12/04/14 00:15
LFID & Datetime: EL03022A 12/04/14 00:54

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	10.742	10.733	10.725	10.733	10.733	10.733	10.733	10.690	10.776	0.043
1,1,1-Trifluorotoluene	3.225	3.217	3.192	3.208	3.208	3.208	3.210	3.086	3.334	0.124

VG39L03.MET

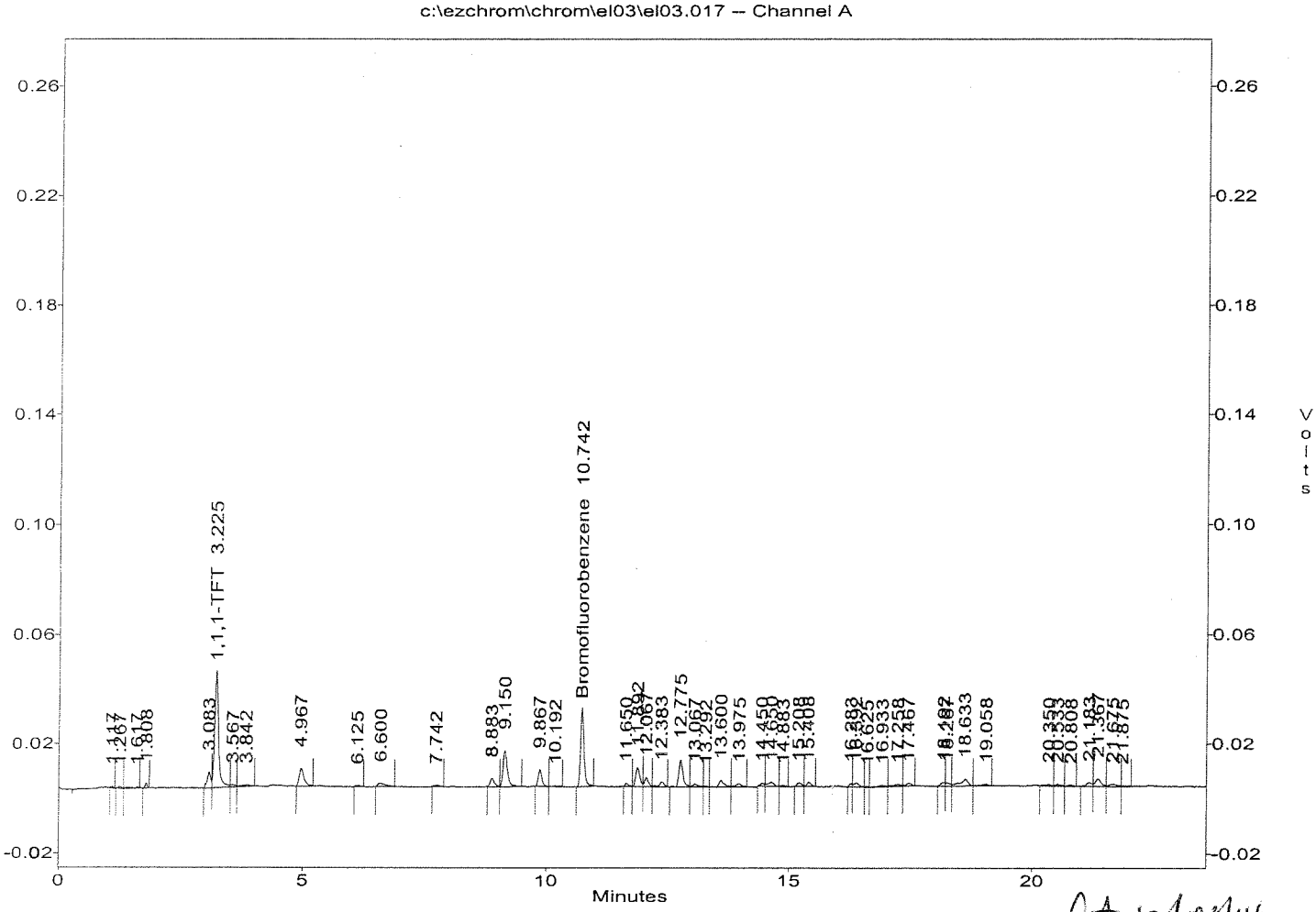
AT
12/08/14

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.017
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39L0301 20/10
Acquired : Dec 03, 2014 21:40:37
Printed : Dec 04, 2014 09:31:20
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
6	1,1,1-TFT	3.225	226606.0	21932.0	10.00
17	Bromofluorobenzene	10.742	146729.0	17272.2	10.00
G1	GASOLINE(TOTAL)		627118.0	28525.8	20.00
G2	GRO(C6-C10)		400427.0	20202.7	20.00
G3	GRO(2MP-124TMB)		392509.0	20051.6	20.00
G4	GRO(C5-C12)		556818.0	27267.5	20.00
G5	GRO(C6-C12)		552673.0	27191.0	20.00
G6	GRO(C5-C10)		404572.0	20279.2	20.00



12/08/14

4025

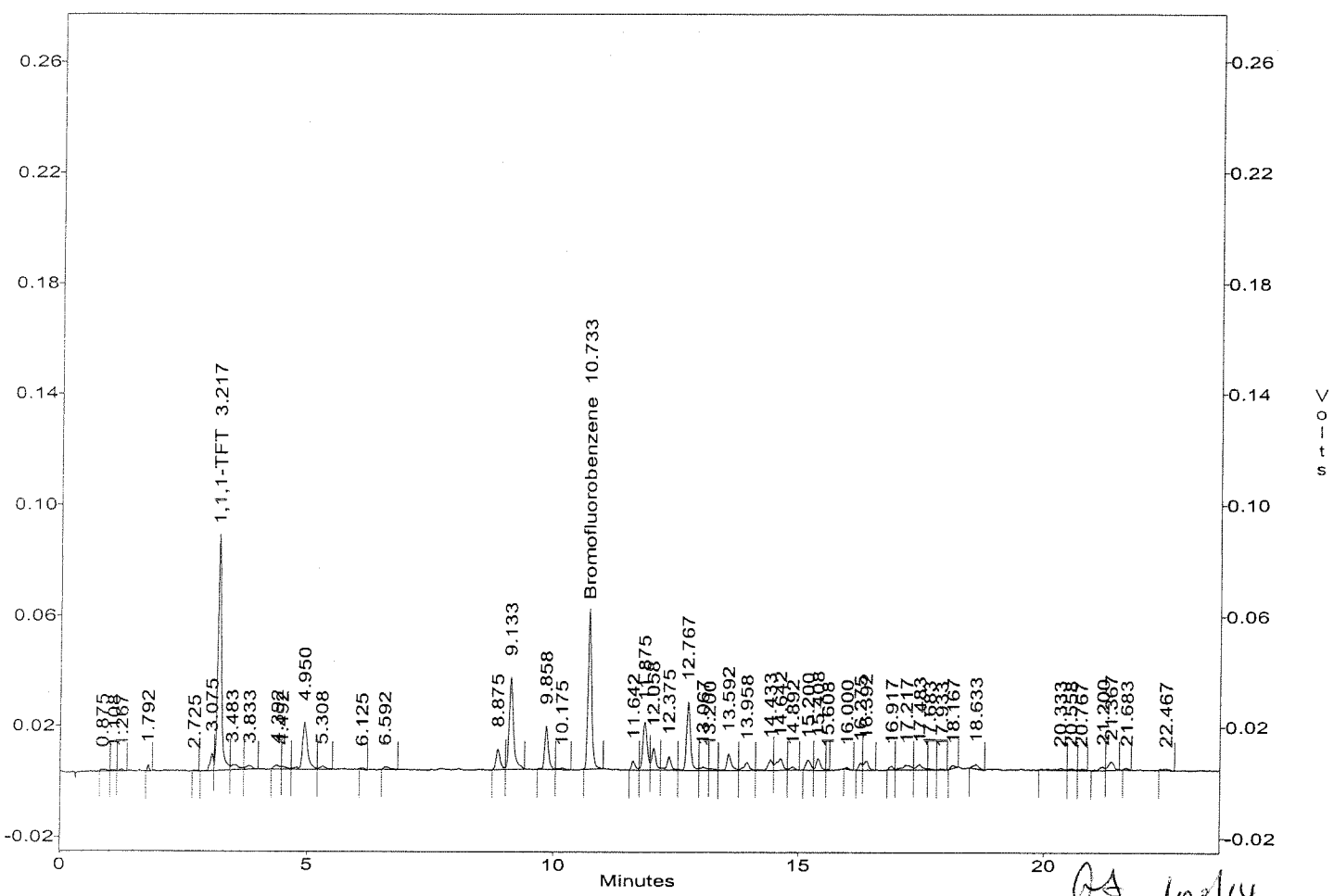
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.018
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39L0302 50/20
Acquired : Dec 03, 2014 22:19:23
Printed : Dec 04, 2014 09:31:29
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
7	1,1,1-TFT	3.217	429698.0	21932.0	20.00
20	Bromofluorobenzene	10.733	298816.0	17272.2	20.00
G1	GASOLINE(TOTAL)		1303049.0	28525.8	50.00
G2	GRO(C6-C10)		930282.0	20202.7	50.00
G3	GRO(2MP-124TMB)		920569.0	20051.6	50.00
G4	GRO(C5-C12)		1241334.0	27267.5	50.00
G5	GRO(C6-C12)		1234831.0	27191.0	50.00
G6	GRO(C5-C10)		936785.0	20279.2	50.00

c:\ezchrom\chrom\el03\el03.018 -- Channel A



GS 12/08/14

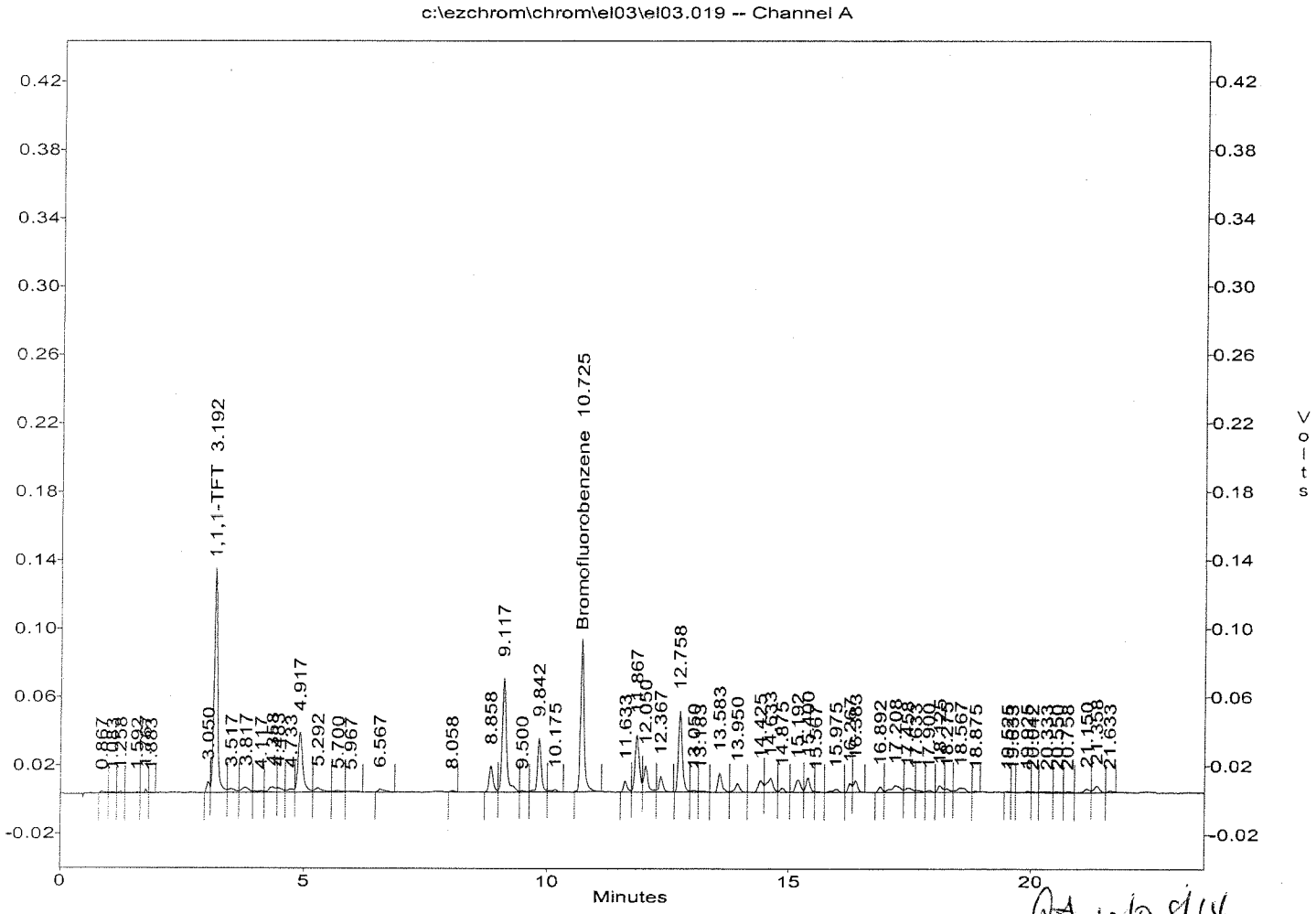
4026

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.019
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39L0303 100/30
Acquired : Dec 03, 2014 22:58:02
Printed : Dec 04, 2014 09:32:05
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
8	1,1,1-TFT	3.192	637353.0	21932.0	30.00
26	Bromofluorobenzene	10.725	458856.0	17272.2	30.00
G1	GASOLINE(TOTAL)		2567871.0	28525.8	100.00
G2	GRO(C6-C10)		1825680.0	20202.7	100.00
G3	GRO(2MP-124TMB)		1822670.0	20051.6	100.00
G4	GRO(C5-C12)		2473955.0	27267.5	100.00
G5	GRO(C6-C12)		2464239.0	27191.0	100.00
G6	GRO(C5-C10)		1835396.0	20279.2	100.00



12/08/14

4027

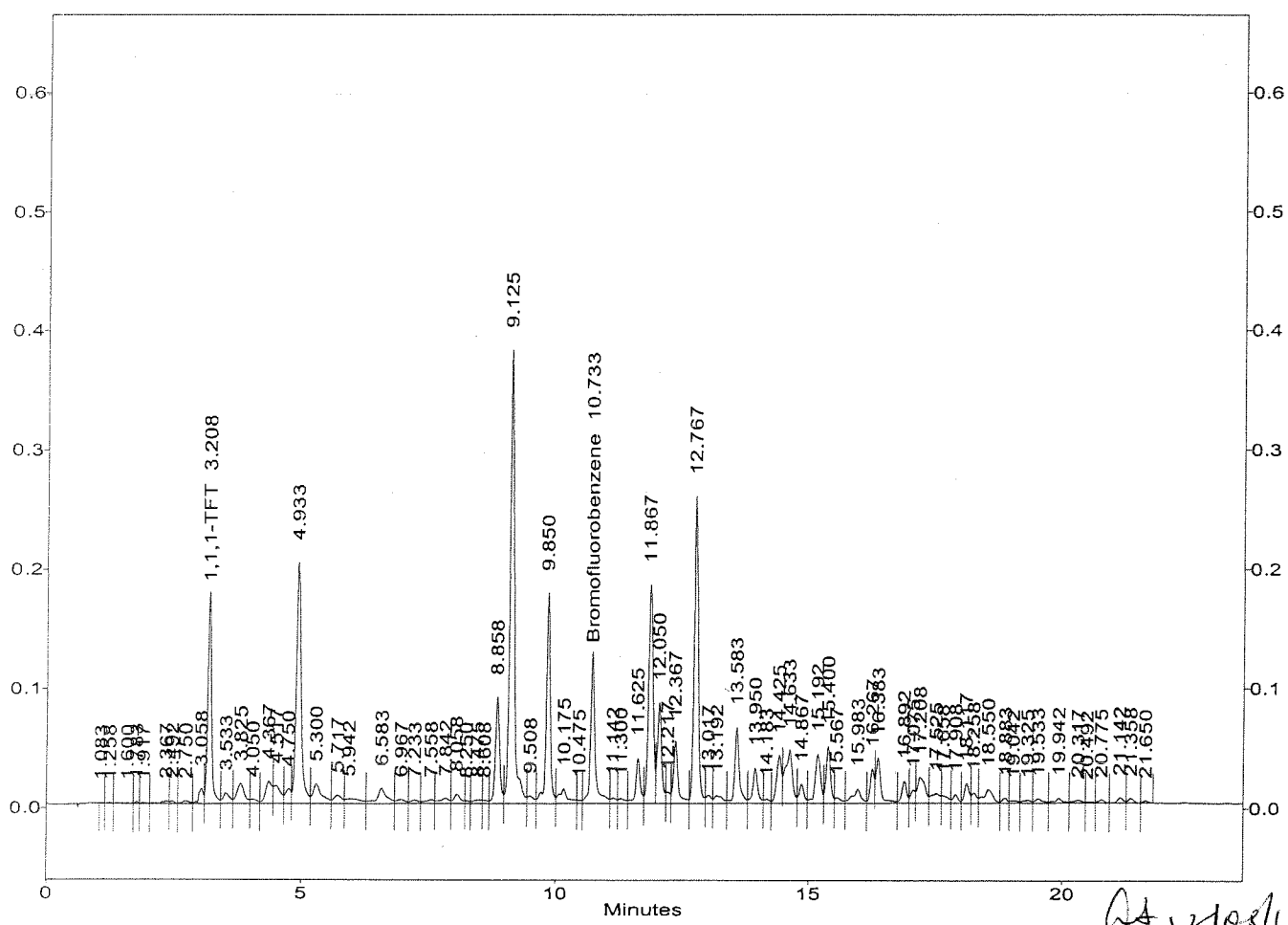
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.020
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39L0304 500/40
Acquired : Dec 03, 2014 23:36:52
Printed : Dec 04, 2014 09:33:59
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
10	1,1,1-TFT	3.208	880942.0	21932.0	40.00
36	Bromofluorobenzene	10.733	792339.0	17272.2	40.00
G1	GASOLINE(TOTAL)		14930712.0	28525.8	500.00
G2	GRO(C6-C10)		10948699.0	20202.7	500.00
G3	GRO(2MP-124TMB)		10900503.0	20051.6	500.00
G4	GRO(C5-C12)		14628948.0	27267.5	500.00
G5	GRO(C6-C12)		14625912.0	27191.0	500.00
G6	GRO(C5-C10)		10951735.0	20279.2	500.00

c:\ezchrom\chrom\el03\el03.020 -- Channel A



12/08/14

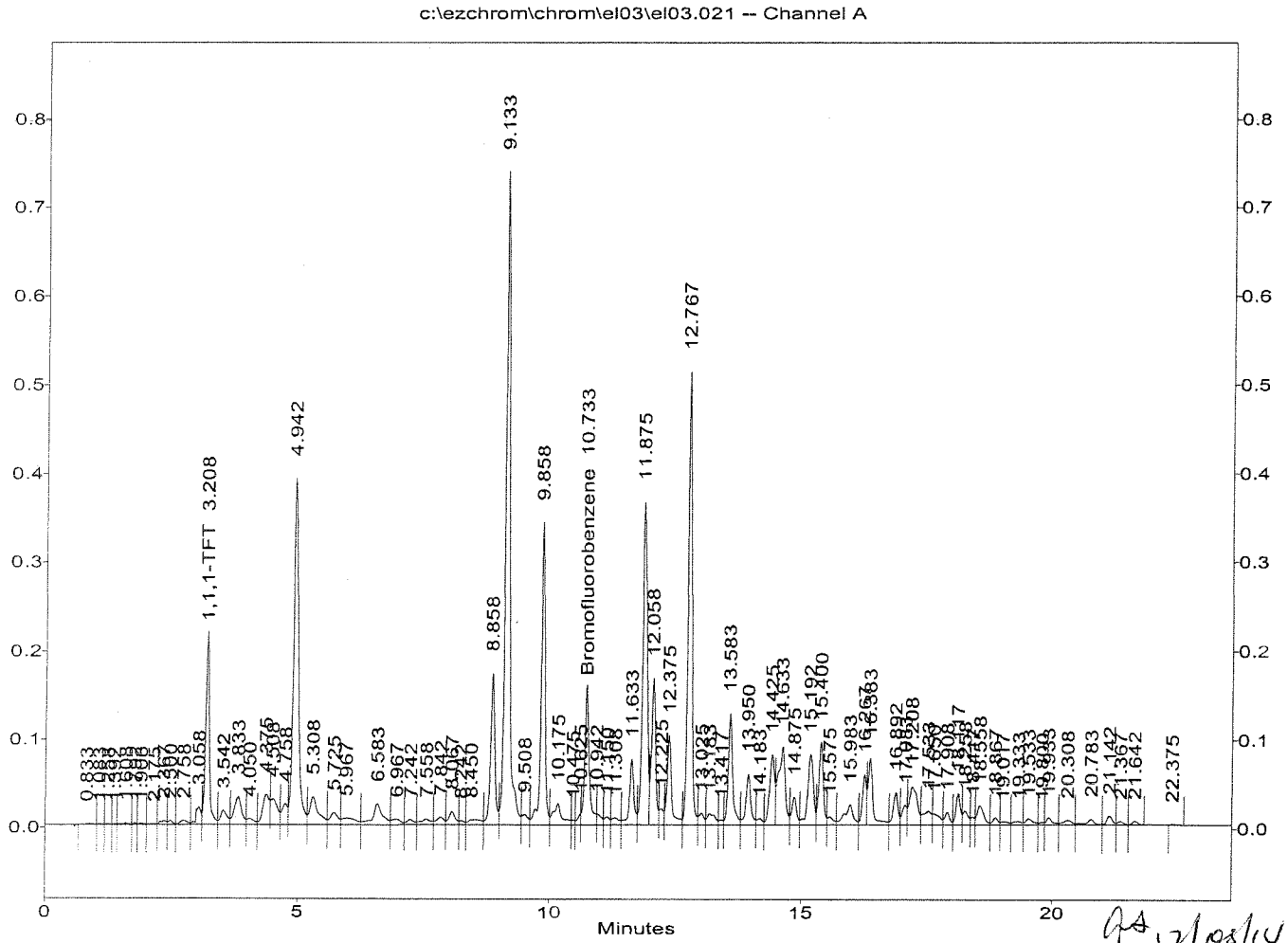
4028

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.021
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39L0305 1000/50
Acquired : Dec 04, 2014 00:15:44
Printed : Dec 04, 2014 09:34:16
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
13	1,1,1-TFT	3.208	1103159.0	21932.0	50.00
39	Bromofluorobenzene	10.733	978606.0	17272.2	50.00
G1	GASOLINE(TOTAL)		29093086.0	28525.8	1000.00
G2	GRO(C6-C10)		21278020.0	20202.7	1000.00
G3	GRO(2MP-124TMB)		21181054.0	20051.6	1000.00
G4	GRO(C5-C12)		28510988.0	27267.5	1000.00
G5	GRO(C6-C12)		28501320.0	27191.0	1000.00
G6	GRO(C5-C10)		21287688.0	20279.2	1000.00



RA, 12/08/14

4029

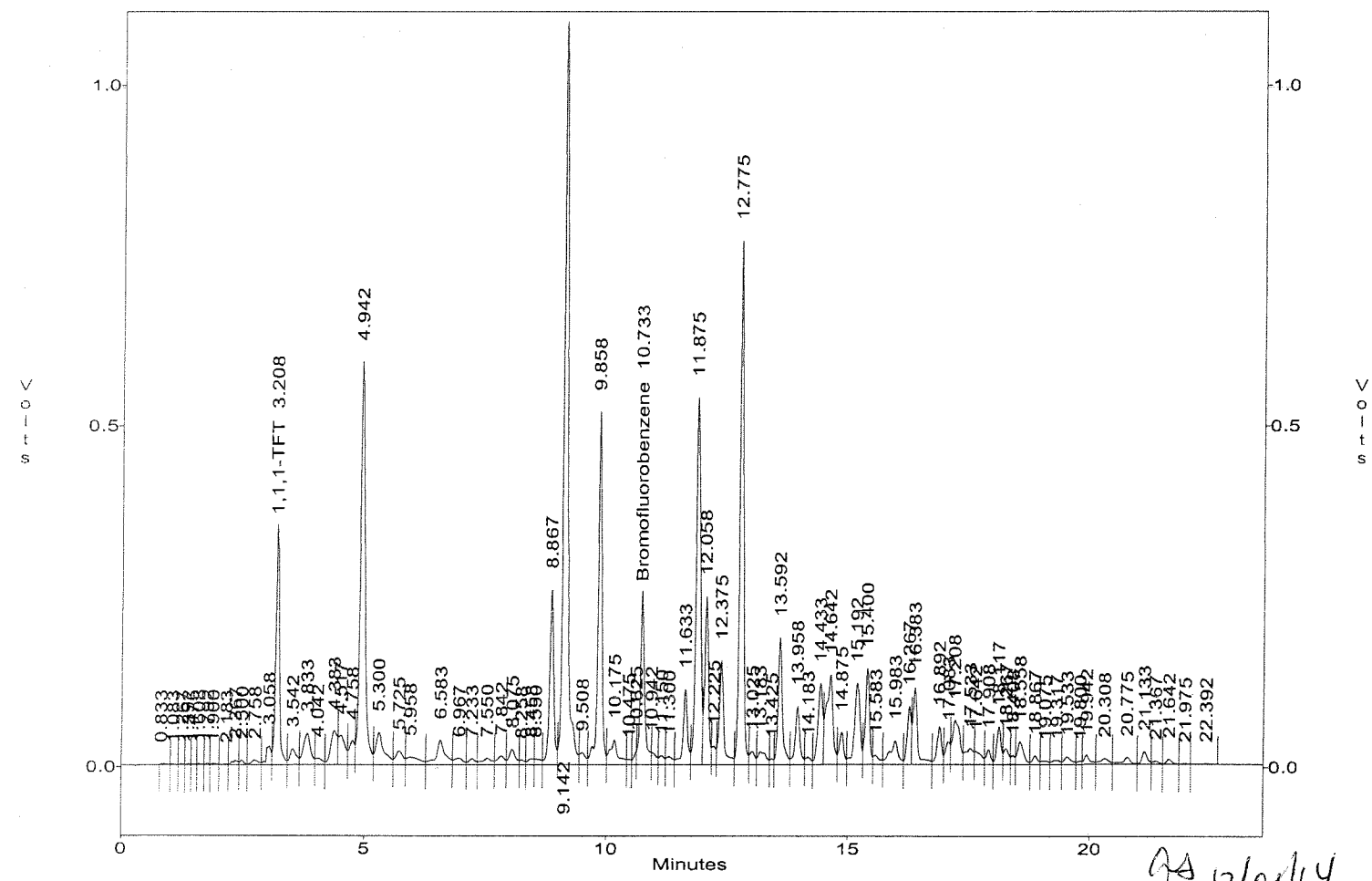
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.022
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : VG39L0306 1500/80
Acquired : Dec 04, 2014 00:54:34
Printed : Dec 04, 2014 09:34:50
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
14	1,1,1-TFT	3.208	1769187.0	21932.0	80.00
41	Bromofluorobenzene	10.733	1547518.0	17272.2	80.00
G1	GASOLINE(TOTAL)		43657332.0	28525.8	1500.00
G2	GRO(C6-C10)		31735500.0	20202.7	1500.00
G3	GRO(2MP-124TMB)		31595912.0	20051.6	1500.00
G4	GRO(C5-C12)		42643448.0	27267.5	1500.00
G5	GRO(C6-C12)		42629872.0	27191.0	1500.00
G6	GRO(C5-C10)		31749080.0	20279.2	1500.00

c:\ezchrom\chrom\el03\el03.022 -- Channel A



12/08/14

4030

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
5030B/M8015

Lab Name : EMAX Inc
Instrument ID : GCT39
GC Columm : DB-5
Column size ID : 30MX.53MM
Mid Conc Init LFID & Datetime: EL03020A 12/03/2014 23:36
Conc Cont LFID & Datetime: EL03023A 12/04/2014 01:33
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	28525.8	12194174	427.48	-15		20
GRO(C6-C10)	NA	NA	NA	500.0	20202.7	9874029	488.75	-2		20
GRO(2MP-124TMB)	NA	NA	NA	500.0	20051.6	9864567	491.96	-2		20
GRO(C5-C12)	NA	NA	NA	500.0	27267.5	11795820	432.60	-13		20
GRO(C6-C12)	NA	NA	NA	500.0	27191.0	11680734	429.58	-14		20
GRO(C5-C10)	NA	NA	NA	500.0	20279.2	9989115	492.58	-1		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
Bromofluorobenzene	10.733	10.690	10.776	40.0	17272.2	650808	37.68	-6		20
1,1,1-Trifluorotoluene	3.200	3.076	3.324	40.0	21932.0	857687	39.11	-2		20

VG39L03.MET

AJ
12/08/14

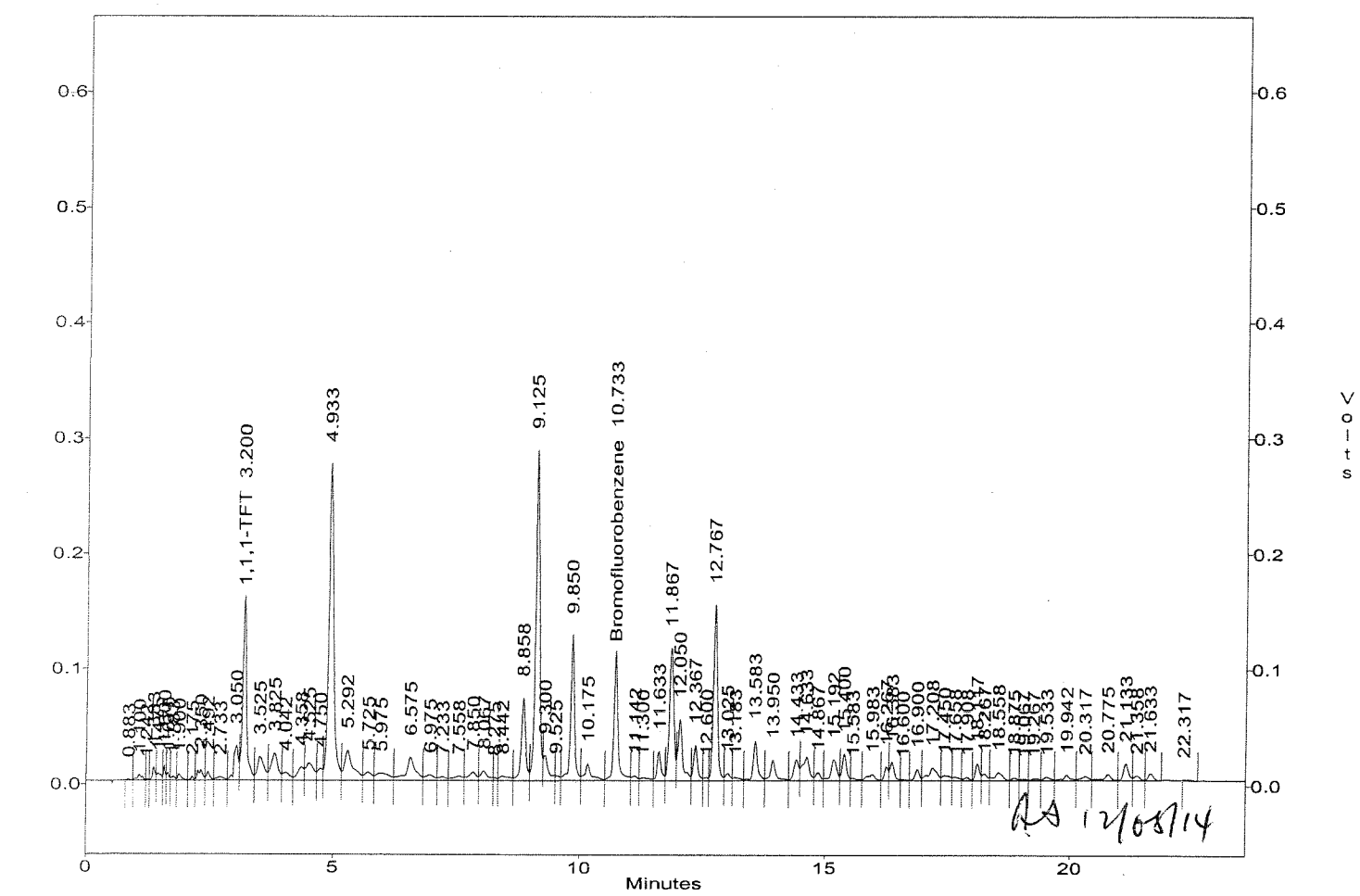
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.023
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : IVG39L0301 500/40
Acquired : Dec 04, 2014 01:33:17
Printed : Dec 04, 2014 09:35:26
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
15	1,1,1-TFT	3.200	857687.0	21932.0	39.11
40	Bromofluorobenzene	10.733	650808.0	17272.2	37.68
G1	GASOLINE(TOTAL)		12194174.0	28525.8	427.48
G2	GRO(C6-C10)		9874029.0	20202.7	488.75
G3	GRO(2MP-124TMB)		9864567.0	20051.6	491.96
G4	GRO(C5-C12)		11795820.0	27267.5	432.60
G5	GRO(C6-C12)		11680734.0	27191.0	429.58
G6	GRO(C5-C10)		9989115.0	20279.2	492.58

c:\ezchrom\chrom\el03\el03.023 -- Channel A

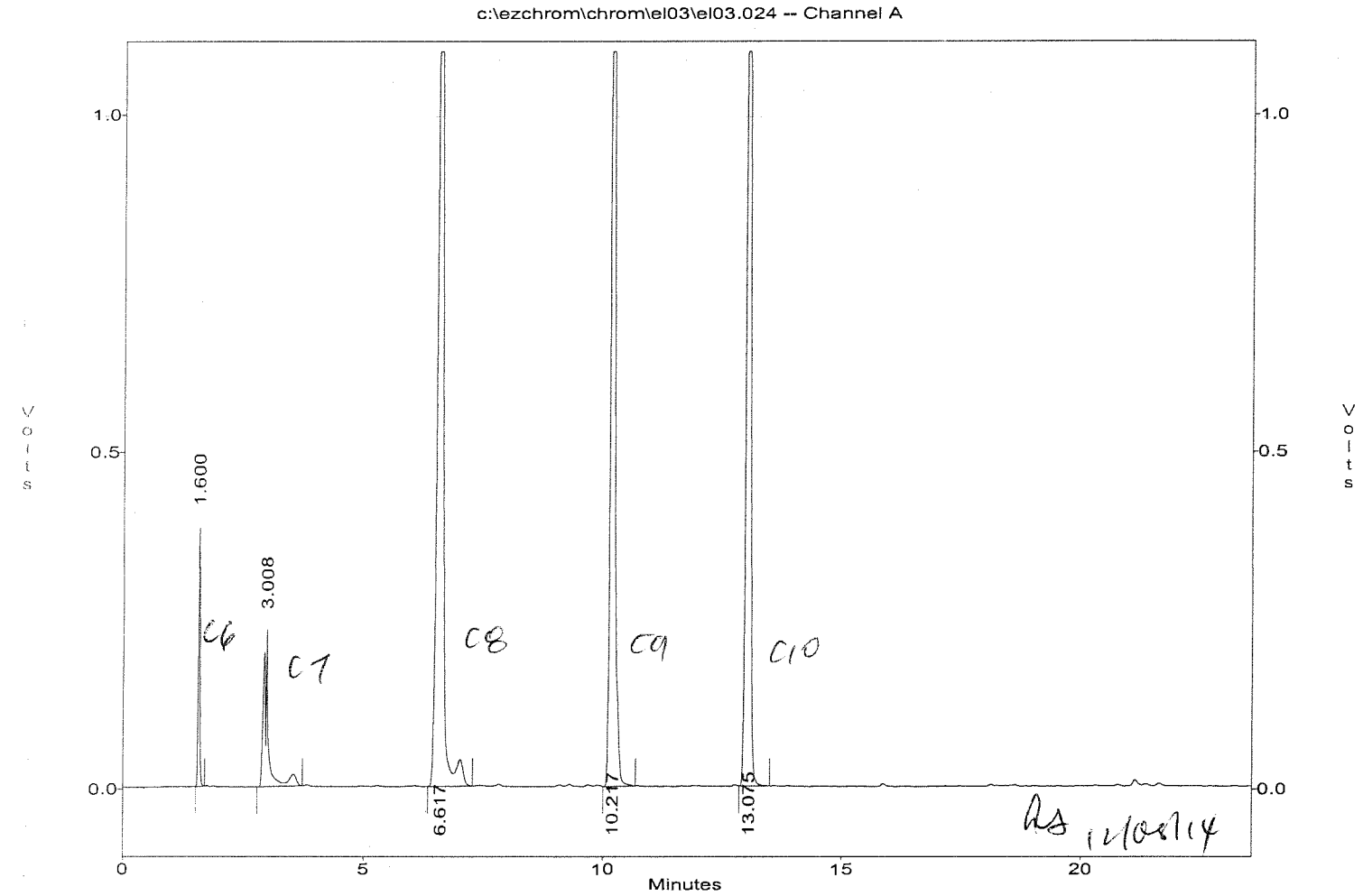


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.024
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : GRO
Acquired : Dec 04, 2014 02:12:07
Printed : Dec 04, 2014 09:30:06
User : SCerva

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	10.733	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		30298972.0	28525.8	1062.16
G2	GRO(C6-C10)		30298972.0	20202.7	1499.75
G3	GRO(2MP-124TMB)		21899082.0	20051.6	1092.14
G4	GRO(C5-C12)		30298972.0	27267.5	1111.18
G5	GRO(C6-C12)		30298972.0	27191.0	1114.30
G6	GRO(C5-C10)		30298972.0	20279.2	1494.09

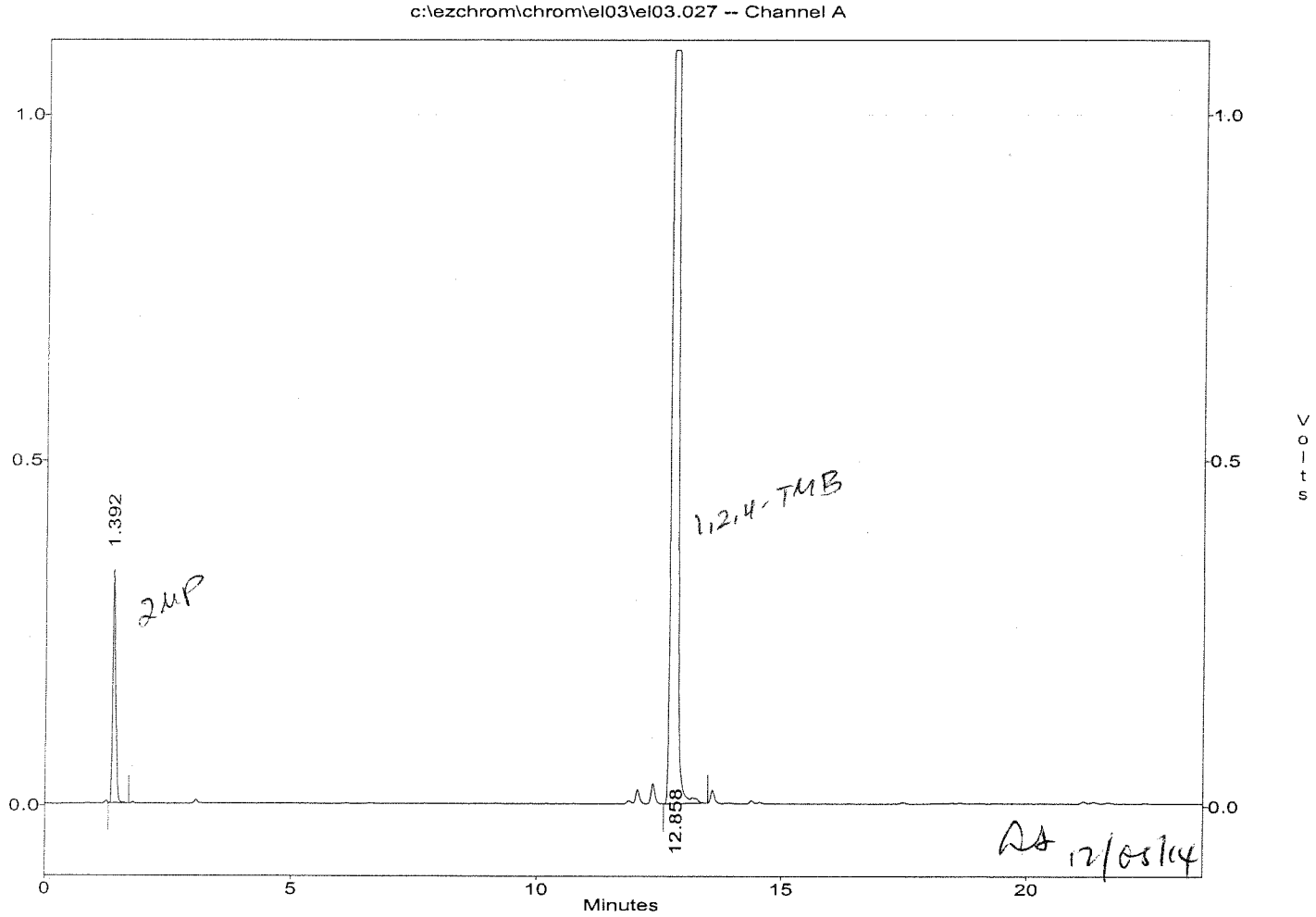


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.027
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : 2MP/1,2,4-TMB
Acquired : Dec 04, 2014 04:08:39
Printed : Dec 04, 2014 09:26:28
User : SCerva

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	10.733	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		12759694.0	28525.8	447.30
G2	GRO(C6-C10)		11386734.0	20202.7	563.62
G3	GRO(2MP-124TMB)		0.0	20051.6	0.00
G4	GRO(C5-C12)		12759694.0	27267.5	467.95
G5	GRO(C6-C12)		11386734.0	27191.0	418.77
G6	GRO(C5-C10)		12759694.0	20279.2	629.20



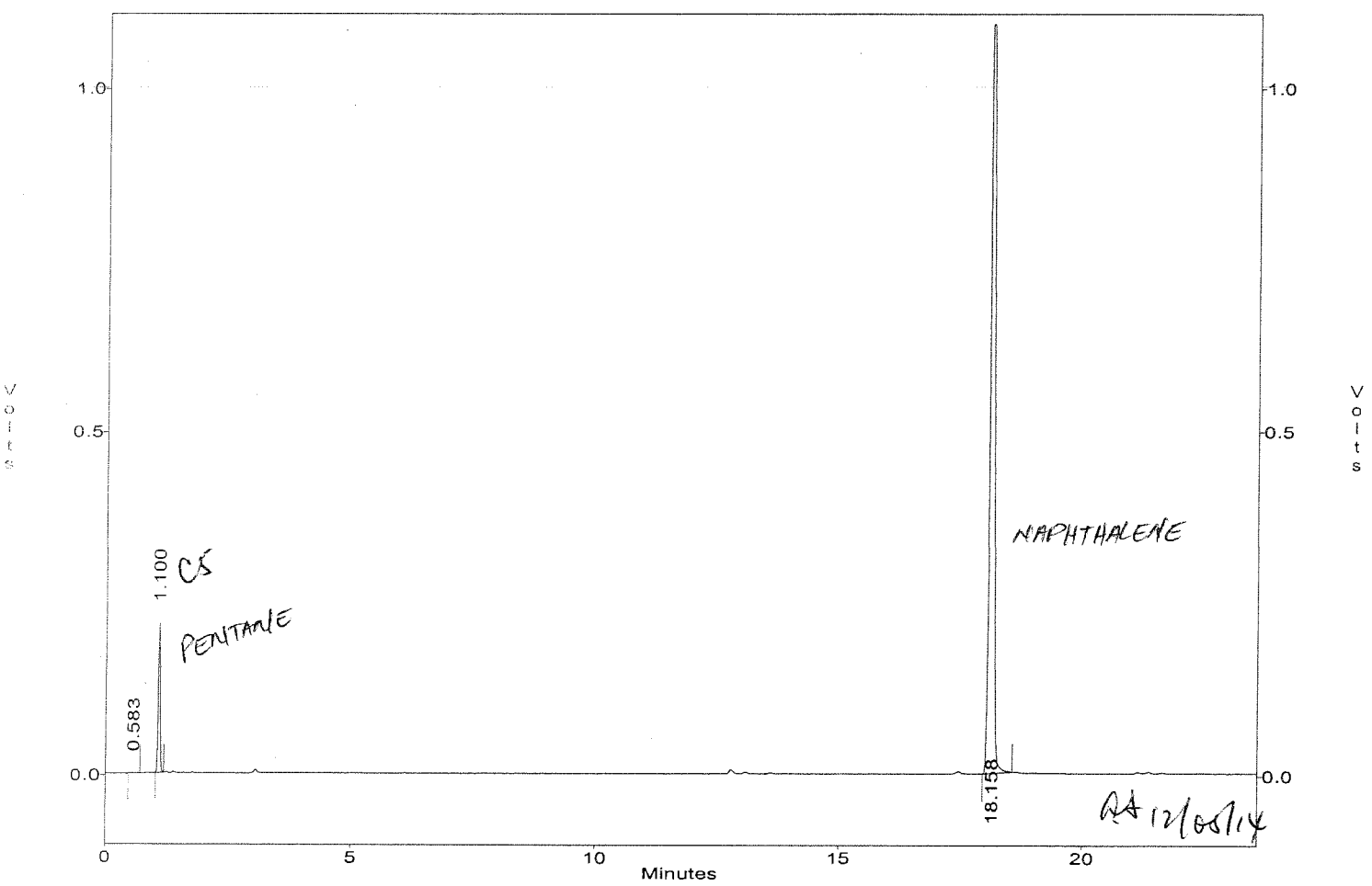
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.029
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : PENTANE/NAPHTHALENE
Acquired : Dec 04, 2014 05:26:29
Printed : Dec 04, 2014 09:27:16
User : SCerva

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	10.733	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		8067427.0	28525.8	282.81
G2	GRO(C6-C10)		0.0	20202.7	0.00
G3	GRO(2MP-124TMB)		0.0	20051.6	0.00
G4	GRO(C5-C12)		8067427.0	27267.5	295.86
G5	GRO(C6-C12)		7442090.0	27191.0	273.70
G6	GRO(C5-C10)		625337.0	20279.2	30.84

c:\ezchrom\chrom\el03\el03.029 -- Channel A



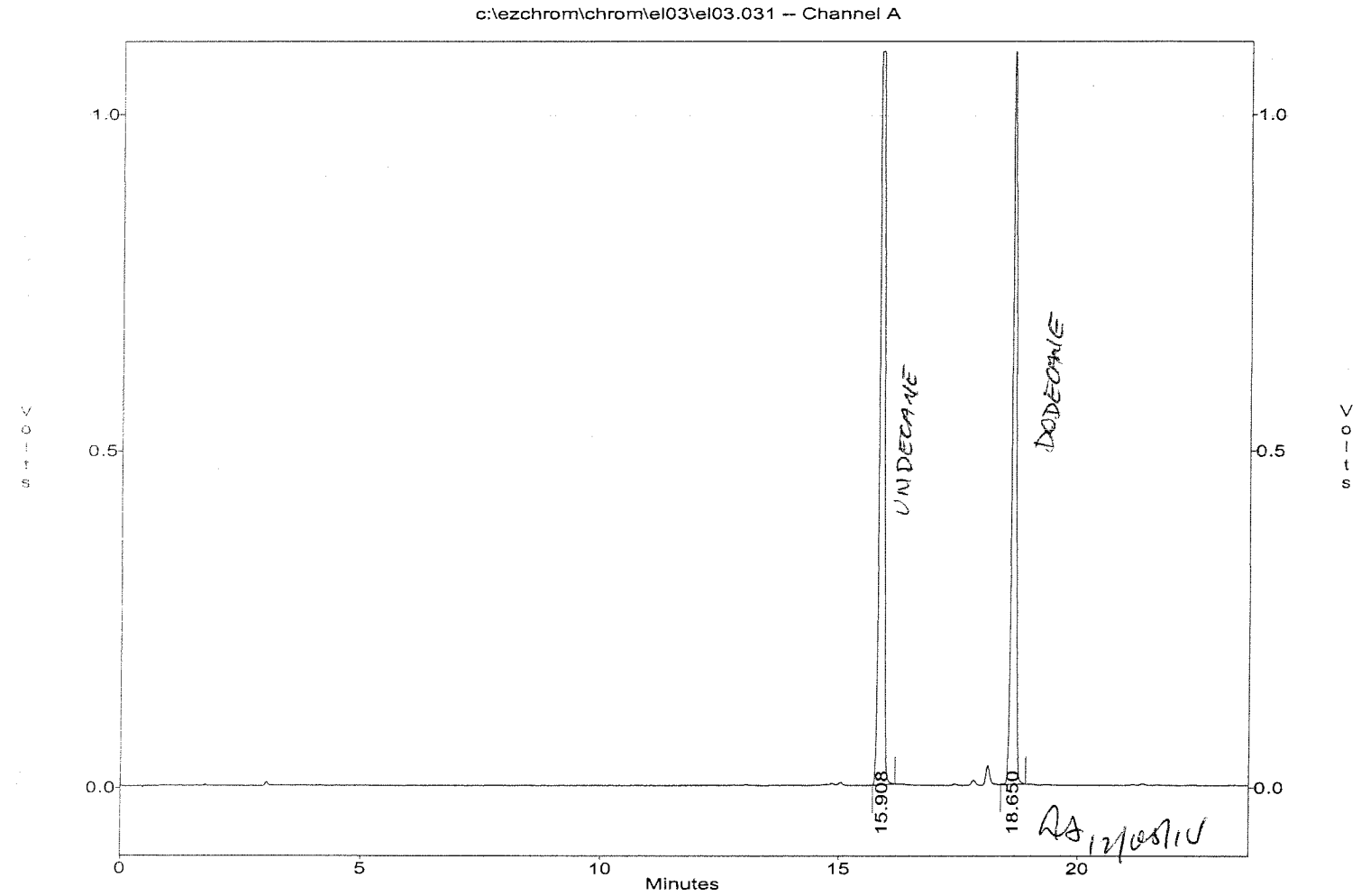
RA 12/08/14

EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.031
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : UNDECANE/DODECANE
Acquired : Dec 04, 2014 06:44:18
Printed : Dec 04, 2014 09:28:07
User : SCerva

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	10.733	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		14968382.0	28525.8	524.73
G2	GRO(C6-C10)		0.0	20202.7	0.00
G3	GRO(2MP-124TMB)		0.0	20051.6	0.00
G4	GRO(C5-C12)		14968382.0	27267.5	548.95
G5	GRO(C6-C12)		14968382.0	27191.0	550.49
G6	GRO(C5-C10)		0.0	20279.2	0.00

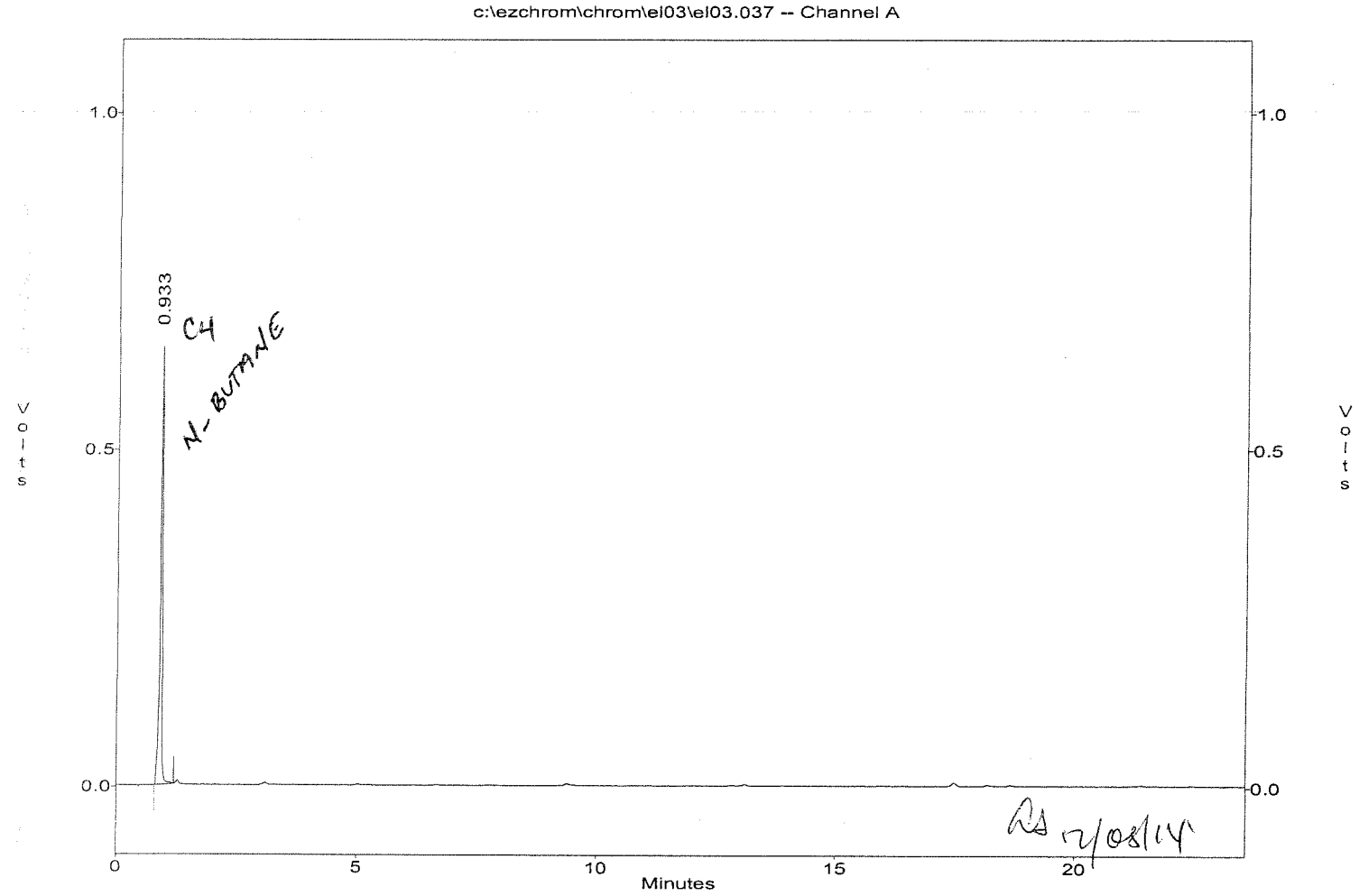


EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\el03\el03.037
Method : c:\ezchrom\methods\vg39l03.met
Sample ID : N-BUTANE 100uL
Acquired : Dec 04, 2014 10:41:00
Printed : Dec 04, 2014 11:12:18
User : SCerva

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	10.733	0.0	0.0	0.00
G1	GASOLINE(TOTAL)		0.0	28525.8	0.00
G2	GRO(C6-C10)		0.0	20202.7	0.00
G3	GRO(2MP-124TMB)		0.0	20051.6	0.00
G4	GRO(C5-C12)		0.0	27267.5	0.00
G5	GRO(C6-C12)		0.0	27191.0	0.00
G6	GRO(C5-C10)		0.0	20279.2	0.00



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: EL03020A 12/03/2014 23:36
Conc Cont LFID & Datetime: EA27003A 01/27/2015 11:27
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	28525.8	14837625	520.15	4		20
GRO(C6-C10)	NA	NA	NA	500.0	20202.7	10838109	536.47	7		20
GRO(2MP-124TMB)	NA	NA	NA	500.0	20051.6	10687106	532.98	7		20
GRO(C5-C12)	NA	NA	NA	500.0	27267.5	14539129	533.20	7		20
GRO(C6-C12)	NA	NA	NA	500.0	27191.0	14528068	534.30	7		20
GRO(C5-C10)	NA	NA	NA	500.0	20279.2	10849170	534.99	7		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
Bromofluorobenzene	10.783	10.740	10.826	40.0	17272.2	762930	44.17	10		20
1,1,1-Trifluorotoluene	3.275	3.151	3.399	40.0	21932.0	865070	39.44	-1		20

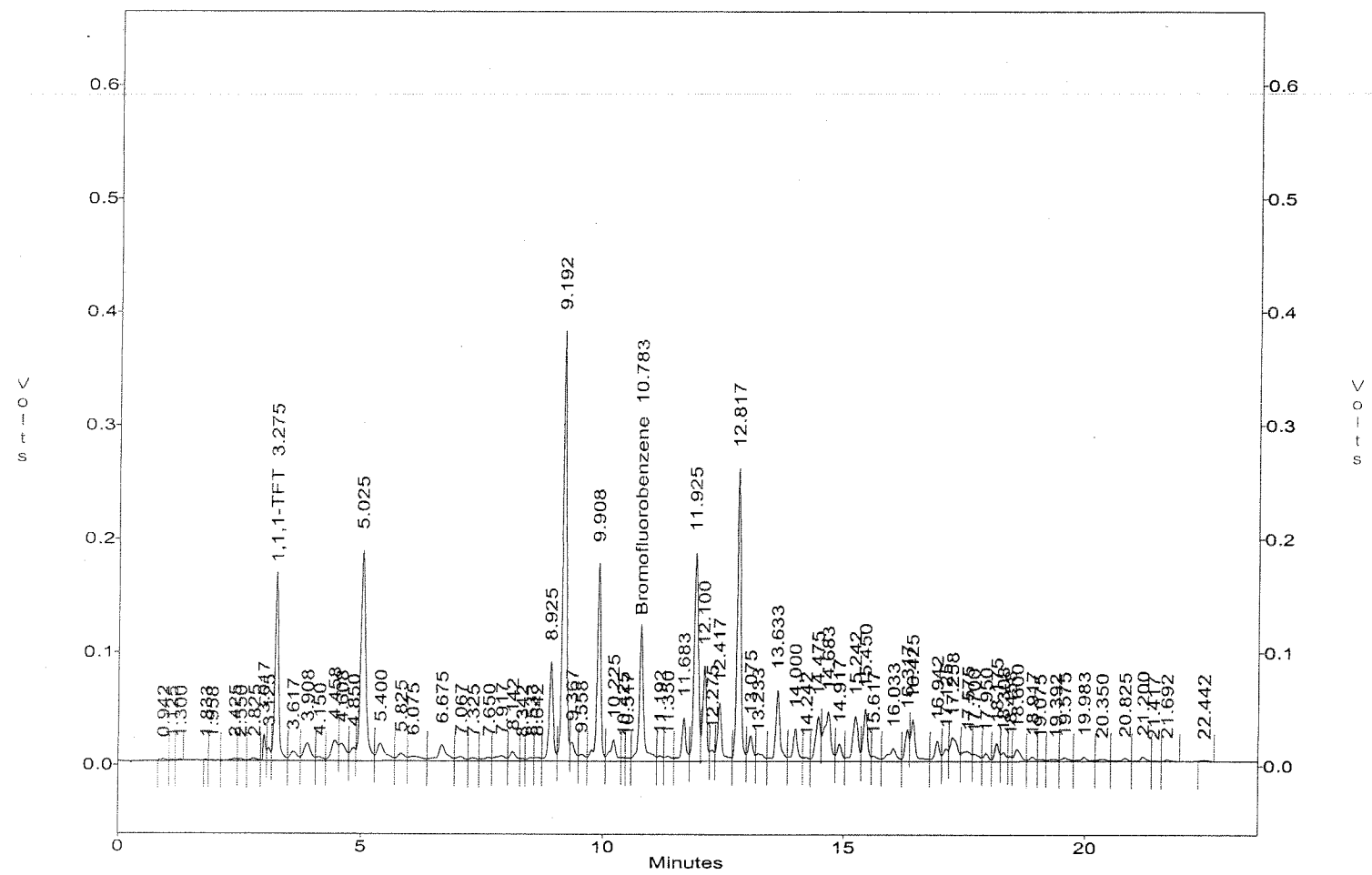
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.003
Method : c:\ezchrom\methods\Vg39l03.met
Sample ID : CVG39L03772 500/40
Acquired : Jan 27, 2015 11:27:20
Printed : Jan 27, 2015 11:50:52
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	3.275	865070.0	21932.0	39.44
39	Bromofluorobenzene	10.783	762930.0	17272.2	44.17
G1	GASOLINE(TOTAL)		14837625.0	28525.8	520.15
G2	GRO(C6-C10)		10838109.0	20202.7	536.47
G3	GRO(2MP-124TMB)		10687106.0	20051.6	532.98
G4	GRO(C5-C12)		14539129.0	27267.5	533.20
G5	GRO(C6-C12)		14528068.0	27191.0	534.30
G6	GRO(C5-C10)		10849170.0	20279.2	534.99

c:\ezchrom\chrom\EA27\Ea27.003 -- Channel A



4041

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: EL03020A 12/03/2014 23:36
Conc Cont LFID & Datetime: EA27013A 01/27/2015 18:00
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	28525.8	13364993	468.52	-6		20
GRO(C6-C10)	NA	NA	NA	500.0	20202.7	10265461	508.12	2		20
GRO(2MP-124TMB)	NA	NA	NA	500.0	20051.6	10265461	511.95	2		20
GRO(C5-C12)	NA	NA	NA	500.0	27267.5	13201839	484.16	-3		20
GRO(C6-C12)	NA	NA	NA	500.0	27191.0	13195601	485.29	-3		20
GRO(C5-C10)	NA	NA	NA	500.0	20279.2	10271699	506.51	1		20

SURROGATE	MINUTES	FROM	TO	TRUECON	CF	AREA	CONC	%D	QL	LIMITS
Bromofluorobenzene	10.800	10.757	10.843	40.0	17272.2	728338	42.17	5		20
1,1,1-Trifluorotoluene	3.283	3.159	3.407	40.0	21932.0	849732	38.74	-3		20

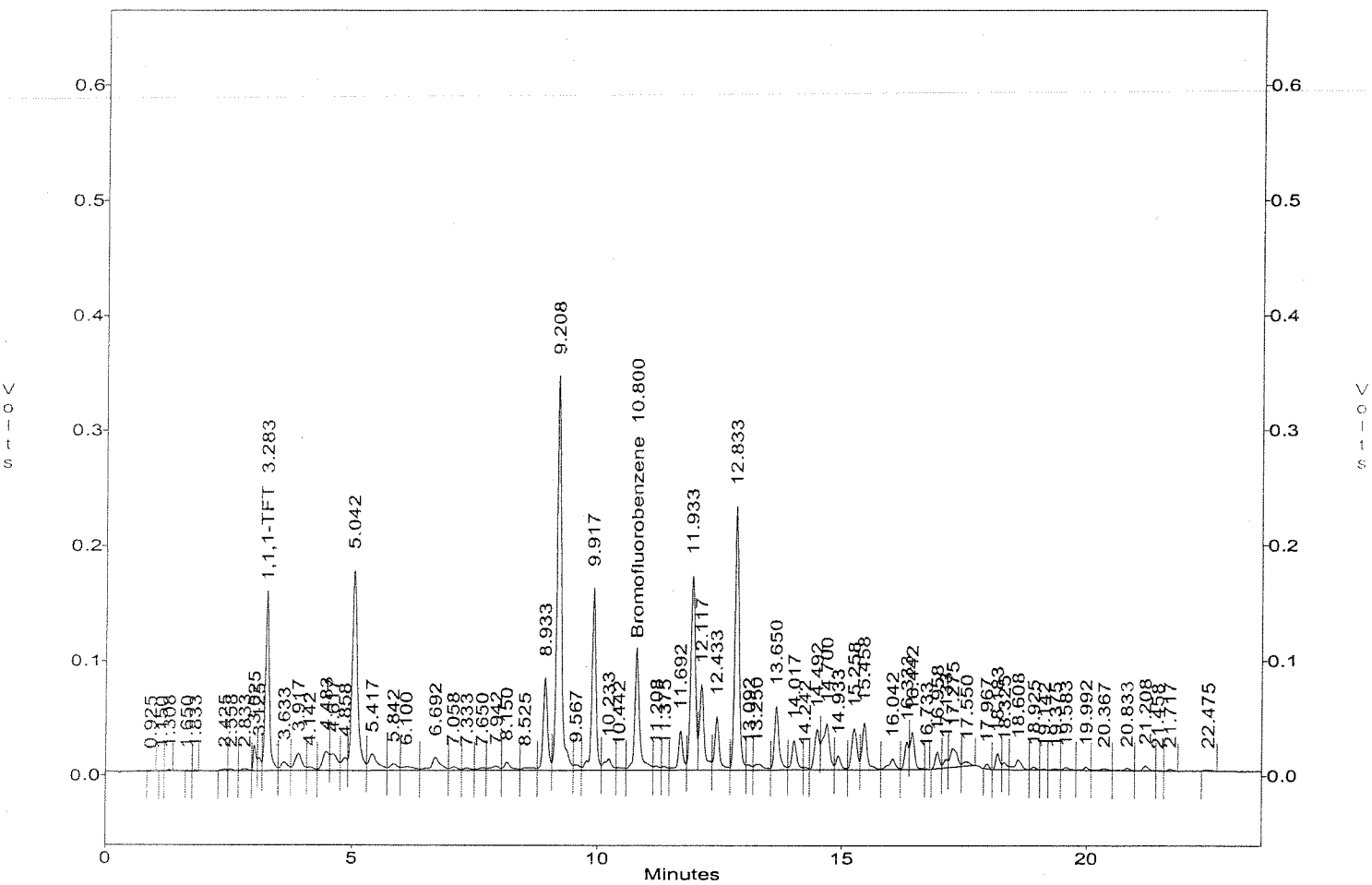
EPA METHOD 8015 by FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\EA27\Ea27.013
Method : c:\ezchrom\methods\Vg39l03.met
Sample ID : CVG39L03773 500/40
Acquired : Jan 27, 2015 18:00:19
Printed : Jan 27, 2015 18:23:51
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(PPB)
11	1,1,1-TFT	3.283	849732.0	21932.0	38.74
35	Bromofluorobenzene	10.800	728338.0	17272.2	42.17
G1	GASOLINE(TOTAL)		13364993.0	28525.8	468.52
G2	GRO(C6-C10)		10265461.0	20202.7	508.12
G3	GRO(2MP-124TMB)		10265461.0	20051.6	511.95
G4	GRO(C5-C12)		13201839.0	27267.5	484.16
G5	GRO(C6-C12)		13195601.0	27191.0	485.29
G6	GRO(C5-C10)		10271699.0	20279.2	506.51

c:\ezchrom\chrom\EA27\Ea27.013 -- Channel A



4043

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: Data file EL03.016 → EL03.038

Purge Volume = 5 ml

GASOLINE ICAL

Book #:	A39-050
Instrument No.:	39
Analytical Sequence:	EL03
Method File:	☑ VG39L03
	☐
	☐
Analytical Batch:	N/A

CONC.	SURROGATE	ICAL STD (RESTEK)
20/10	0.5ul	0.02ul ~~0.02ul~~ SC
50/20	1ul	0.05ul 0.1ul 12/4/14
100/30	1.5ul	0.1ul ~~0.2ul~~
500/40	2ul	0.5ul
1000/80	2.5ul	1ul
1500/80	4ul	1.5ul

ICV CONC.	SURROGATE	ICV STD (CPI)
500/40	2ul	0.5ul

MARKERS:

GRO - SV2-07-02-05
2MP - SV2-09-06-01
TMB - SV2-05-23
PENTANE - SV2-07-01-03
NAPHTHALENE - SV2-05-24
UNDECANE - SV2-07-01-25
DODECANE - SV2-07-01-26
N-BUTANE - SV2-07-01-16

SOP #	Rev. #
☑ EMAX-5030B	3
☑ EMAX-8015G	5
☐ EMAX-AK101	2
☐ EMAX-	

STANDARDS ID	Amt Added (µL)	Conc. (mg/L)
ICAL		
ICAL SV2-07-02-24	See Comments Section	5000
ICV SV2-07-02-20	See Comments	5000
ICV		
DCC GAS	SC	12/4/14
DCC		
DCC		
ICAL BFB/TFT SV2-09-18-03 (Sample) (~~CCC~~)	See Comment	100
SURROGATE	Section	
LCS/LCSD		
MS/MSD	SC	12/4/14
GRO (HC-Chain)		

Solvent	ID/Lot #
Methanol	
Reagent Water	RW2-12-001
	Lot #
pH strip	—

SYRINGES
☑ 5 mL - MSF-01-01-13
☐ 1 mL - MSF-01-01-20
☐ 500 µL - MSF-01-01-21
☐ 250 µL - MSF-01-01-22
☐ 100 µL - MSF-01-01-19
☐ 50 µL - MSF-01-01-17
☑ 10 µL - MSF-01-01-18
☑ 10 µL - MSF-01-01-23
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZC-3-BTEX	

Analyzed By: SC

Date: 12/03/14

4045

Method: Vg39l03.met Batch: El03.seq Data: El03.039 - [Batch: el03.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
16	IB39L0302	hods\vg39103.met	EL03.016	
17	VG39L0301 20/10	hods\vg39103.met	EL03.017	
18	VG39L0302 50/20	hods\vg39103.met	EL03.018	
19	VG39L0303 100/30	hods\vg39103.met	EL03.019	
20	VG39L0304 500/40	hods\vg39103.met	EL03.020	GASOLINE ICAL (RESTEK)
21	VG39L0305 1000/50	hods\vg39103.met	EL03.021	
22	VG39L0306 1500/80	hods\vg39103.met	EL03.022	
23	IVG39L0301 500/40	hods\vg39103.met	EL03.023	GASOLINE ICV (CPI)
24	GRO	hods\vg39103.met	EL03.024	
25	TEST	hods\vg39103.met	EL03.025	
26	RINSE	hods\vg39103.met	EL03.026	
27	2MP/1,2,4-TMB	hods\vg39103.met	EL03.027	
28	RINSE	hods\vg39103.met	EL03.028	FINAL
29	PENTANE/NAPHTHALENE	hods\vg39103.met	EL03.029	
30	RINSE	hods\vg39103.met	EL03.030	
31	UNDECANE/DODECANE	hods\vg39103.met	EL03.031	
32	RINSE	hods\vg39103.met	EL03.032	
33	IB	hods\vg39103.met	EL03.033	
34	IB	hods\vg39103.met	EL03.034	
35	IB	hods\vg39103.met	EL03.035	
36	IB	hods\vg39103.met	EL03.036	
37	N-BUTANE 100uL	hods\vg39103.met	EL03.037	
38	GAS ACCUSTD TEST	hods\vg39103.met	EL03.038	
39	IB	hods\vg39103.met	EL03.039	
40	IB	hods\vg39103.met	EL03.040	
41	IB	hods\vg39103.met	EL03.041	
42	IB	hods\vg39103.met	EL03.042	
43	IB	hods\vg39103.met	EL03.043	
44	IB	hods\vg39103.met	EL03.044	
45	IB	hods\vg39103.met	EL03.045	
46	IB	hods\vg39103.met	EL03.046	
47	IB	hods\vg39103.met	EL03.047	
48	IB	hods\vg39103.met	EL03.048	

SC
12/04/14

Waiting For Trigger...

Start | EZChrom Chromatography ... | Method: Vg39l03.met ... | untitled - Paint | Method: Vg39l03.met - Ba... | Thursday, December 04, 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

VG39A17 (water): A141, A111 pt-sample

GPA004 (soil): A140 preweighed
GPA003 (soil): A137

NOTE: 2ul surrogate TFT/BFB (SV2-10-01-01) added to samples prior to Analysis.

Book #:	A39-050
Instrument No.:	39
Analytical Sequence:	EA27
Method File:	☑ VG39L03
	☑ VG39A06A
	☐
Analytical Batch:	CVG39L03769

SOP #	Rev. #
☑ EMAX-5030B	3
☑ EMAX-8015G	5
☑ EMAX-AK101	2
☐ EMAX-	

STANDARDS ID		Amt Added (µL)	Conc. (mg/L)
ICAL			
ICAL		SC	1/28/15
ICV			
ICV			
DCC GAS	SV2-07-02-24	0.5ul	5000
Alacra DCC DCC GAS	SV2-07-01-13	2ul	2500
DCC Surrogate SC 1/27/15	SV2-10-01-01	2.5ul	100
BFB/TFT	SV2-10-01-01 water (Sample)	2ul	100
	(DCC)	2ul	100
water LCS/LCSD	SV2-07-02-20	0.5ul	5000
soil MS/MSD LCS/LCSD	SV2-07-02-20	See Extraction logbook	5000
GRO (HC-Chain)	SV2-07-02-05	1ul	2000

Solvent	ID/Lot #
Methanol	
Reagent Water	RW2-12-001
	Lot #
pH strip	HC270245

SYRINGES
☑ 5 mL - MSF-01-01-13
☐ 1 mL - MSF-01-01-20
☐ 500 µL - MSF-01-01-21
☐ 250 µL - MSF-01-01-22
☑ 100 µL - MSF-01-01-19
☐ 50 µL - MSF-01-01-17
☑ 10 µL - MSF-01-01-18
☑ 10 µL - MSF-01-01-23
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZC-3-BTEX	

Analyzed By: SC

Date: 1/27/15

Method: Vg39I03.met Batch: Ea27.seq Data: Ea27.012 - [Batch: ea27.seq]

File Edit Method Batch Options Analysis Control Window Help

Method | Data | Batch | Setup | Batch | Preview | Single | STOP | Reslib | Analyze | Reports

Run	Sample ID	Method	Filename	Description
1	IB39A2701	vg39103.met	EA27.001	
2	GRO 1uL	vg39103.met	EA27.002	SV2-07-02-05
3	CVG39L03772 500/40	vg39103.met	EA27.003	
4	VG39A17L 5.0ML W	vg39103.met	EA27.004	Conc. 500/40
5	VG39A17C 5.0ML W	vg39103.met	EA27.005	
6	VG39A17B 5.0ML W	vg39103.met	EA27.006	
7	15A141-04 5.0ML W	vg39103.met	EA27.007	PH~7
8	15A141-01 5.0ML W	vg39103.met	EA27.008	PH~7
9	15A141-02 5.0ML W	vg39103.met	EA27.009	PH~7
10	15A141-03 5.0ML W	vg39103.met	EA27.010	PH~7
11	15A141-03M 5.0ML W	vg39103.met	EA27.011	PH~7
12	15A141-03S 5.0ML W	vg39103.met	EA27.012	PH~7
13	CVG39L03773 500/40	vg39103.met	EA27.013	
14	CVG39A06774 1000/50	ods\vg39a06a.met	EA27.014	
15	15A111-36 5.0ML W	vg39103.met	EA27.015	PT SAMPLE LOT# 8152-62
16	GPA004SL 100uL S	vg39103.met	EA27.016	Conc. 500/40
17	GPA004SC 100uL S	vg39103.met	EA27.017	
18	GPA004SB 100uL S	vg39103.met	EA27.018	FINAL
19	GPA004SQ 100uL S Not evaluated	vg39103.met	EA27.019	
20	15A140-01 100uL S	vg39103.met	EA27.020	
21	15A140-02 100uL S	vg39103.met	EA27.021	
22	15A140-03 100uL S	vg39103.met	EA27.022	
23	15A140-04 100uL S	vg39103.met	EA27.023	
24	15A140-04M 100uL S	vg39103.met	EA27.024	
25	CVG39L03775 500/40	vg39103.met	EA27.025	
26	CVG39A06776 1000/50	ods\vg39a06a.met	EA27.026	
27	15A140-04S 100uL S	vg39103.met	EA27.027	
28	15A140-06 100uL S	vg39103.met	EA27.028	
29	15A140-07 100uL S	vg39103.met	EA27.029	
30	15A140-08 100uL S	vg39103.met	EA27.030	
31	15A140-09 100uL S	vg39103.met	EA27.031	
32	15A140-10 100uL S	vg39103.met	EA27.032	
33	15A140-11 100uL S	vg39103.met	EA27.033	
34	15A140-12 100uL S	vg39103.met	EA27.034	

Waiting For Trigger...

Start | EZChrom Chromat... | Method: Vg39I... | Exploring - Export | Method: Vg39I03... | untitled - Paint | Method: Vg55I19...

Tuesday, January 27, 2015 5:15 PM

LABORATORY REPORT FOR

BATTELLE

RED HILL PHASE 1B

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 15A141

CASE NARRATIVE

Client : BATTELLE

Project: RED HILL PHASE 1B

SDG : 15A141

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of three(3) water samples were received on 01/24/15 to be analyzed for Petroleum Hydrocarbons by Extraction 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. DSA014WB - 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 DSA014WL/DSA014WC. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. DRO was within LCS QC limits in A141-03M/A141-03S. Refer to Matrix QC summary form for details.

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. : 15A141
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	DSA014WB	1	NA	01/28/1516:45	01/27/1512:45	LA28005A	LA28003A	DSA014W	Method Blank
LCS1W	DSA014WL	1	NA	01/28/1517:02	01/27/1512:45	LA28006A	LA28003A	DSA014W	Lab Control Sample (LCS)
LCD1W	DSA014WC	1	NA	01/28/1517:19	01/27/1512:45	LA28007A	LA28003A	DSA014W	LCS Duplicate
RHMW07-GW-02	A141-01	1	NA	01/28/1520:43	01/27/1512:45	LA28019A	LA28015A	DSA014W	Field Sample
RHMW07-GW-02FD	A141-02	1.08	NA	01/28/1521:00	01/27/1512:45	LA28020A	LA28015A	DSA014W	Field Sample
RHMW06-GW-02	A141-03	1.01	NA	01/28/1521:17	01/27/1512:45	LA28021A	LA28015A	DSA014W	Field Sample
RHMW06-GW-02MS	A141-03M	1.09	NA	01/28/1521:34	01/27/1512:45	LA28022A	LA28015A	DSA014W	Matrix Spike Sample (MS)
RHMW06-GW-02MSD	A141-03S	1.03	NA	01/28/1521:51	01/27/1512:45	LA28023A	LA28015A	DSA014W	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: BATTELLE	Date Collected:	01/22/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/27/15 12:45
Sample ID:	RHMW07-GW-02	Date Analyzed:	01/28/15 20:43
Lab Samp ID:	A141-01	Dilution Factor:	1
Lab File ID:	LA28019A	Matrix :	WATER
Ext Btch ID:	DSA014W	% Moisture :	NA
Calib. Ref.:	LA28015A	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	0.824	1.000	82.4	60-130
HEXACOSANE	0.193	0.2500	77.4	60-130

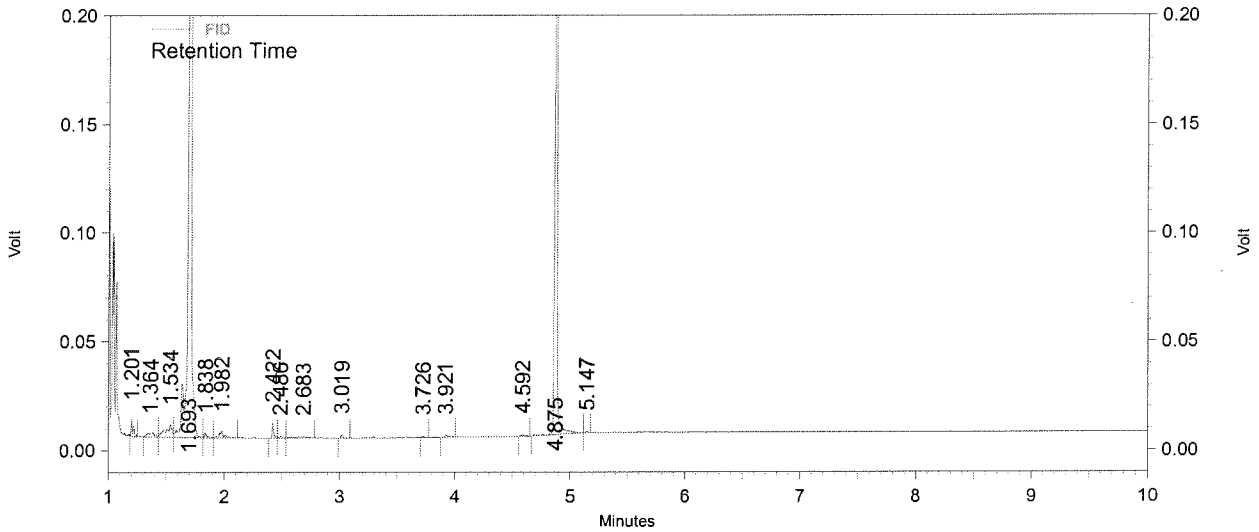
Parameter	H-C Range
DRO	C10-C24
ORO	C24-C36

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : GCT-105 (Offline)
File : D:\Projects\EZC331\Data\LA28\LA28019.dat
Method : D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met
Sequence: : D:\Projects\EZC331\Sequence\LA28.seq
Sample ID : 15A141-01
Acquired : 01/28/15 20:43:09
Printed : 01/29/15 12:58:49
User : KLinn

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.693	1379842	16736.07261	82.447
HEXACOSANE	4.875	461602	23858.57389	19.347
DIESEL(TOTAL)		72142	28620.13271	2.521
DIESEL(C10-C24)		27111	27919.60062	0.971
M.OIL(C24-C36)		943	18035.59361	0.052
Totals		1941640		105.339



Software Version: Version 3.3.1

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: BATTELLE	Date Collected:	01/22/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/27/15 12:45
Sample ID:	RHMW07-GW-02FD	Date Analyzed:	01/28/15 21:00
Lab Samp ID:	A141-02	Dilution Factor:	1.08
Lab File ID:	LA28020A	Matrix :	WATER
Ext Btch ID:	DSA014W	% Moisture :	NA
Calib. Ref.:	LA28015A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	ND	0.11	0.054	0.081
ORO	ND	0.11	0.054	0.081

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	0.876	1.080	81.1	60-130
HEXACOSANE	0.215	0.2700	79.5	60-130

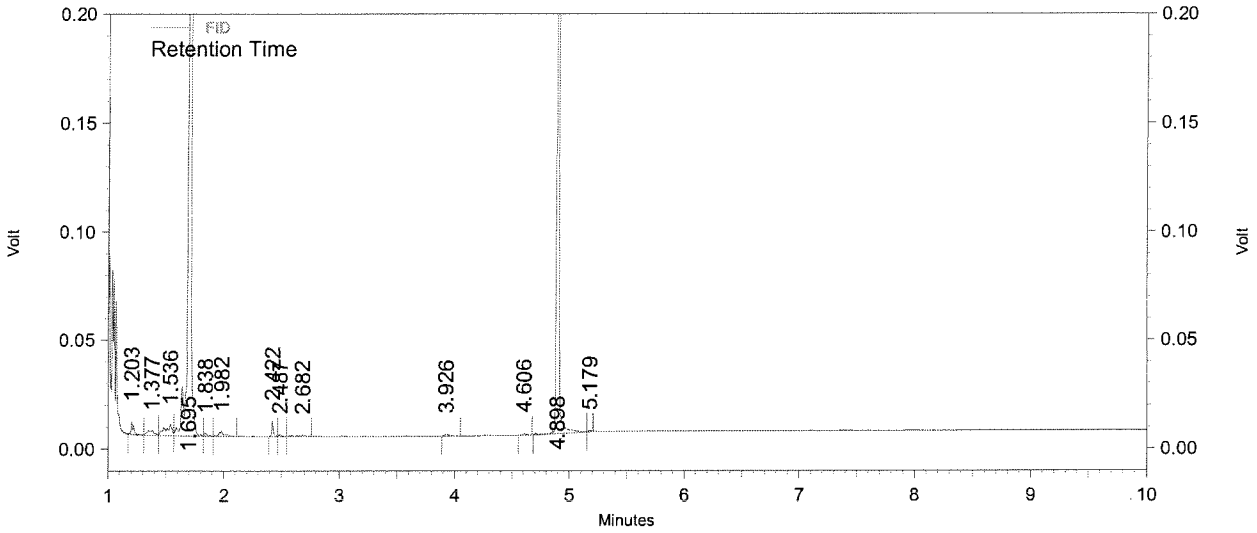
Parameter	H-C Range
DRO	C10-C24
ORO	C24-C36

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : GCT-105 (Offline)
File : D:\Projects\EZC331\Data\LA28\LA28020.dat
Method : D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met
Sequence: : D:\Projects\EZC331\Sequence\LA28.seq
Sample ID : 15A141-02
Acquired : 01/28/15 21:00:16
Printed : 01/29/15 12:58:58
User : KLinn

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.695	1357601	16736.07261	81.118
HEXACOSANE	4.898	474129	23858.57389	19.872
DIESEL(TOTAL)		64956	28620.13271	2.270
DIESEL(C10-C24)		22452	27919.60062	0.804
M.OIL(C24-C36)		885	18035.59361	0.049
Totals		1920023		104.114



Software Version: Version 3.3.1

METHOD SW3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: BATTELLE	Date Collected:	01/23/15
Project	: RED HILL PHASE 1B	Date Received:	01/24/15
Batch No.	: 15A141	Date Extracted:	01/27/15 12:45
Sample ID:	RHMW06-GW-02	Date Analyzed:	01/28/15 21:17
Lab Samp ID:	A141-03	Dilution Factor:	1.01
Lab File ID:	LA28021A	Matrix :	WATER
Ext Btch ID:	DSA014W	% Moisture :	NA
Calib. Ref.:	LA28015A	Instrument ID :	GCT105

PARAMETERS	RESULTS (mg/L)	LOQ (mg/L)	DL (mg/L)	LOD (mg/L)
DRO	ND	0.10	0.051	0.076
ORO	ND	0.10	0.051	0.076

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
BROMOBENZENE	0.731	1.010	72.4	60-130
HEXACOSANE	0.176	0.2525	69.8	60-130

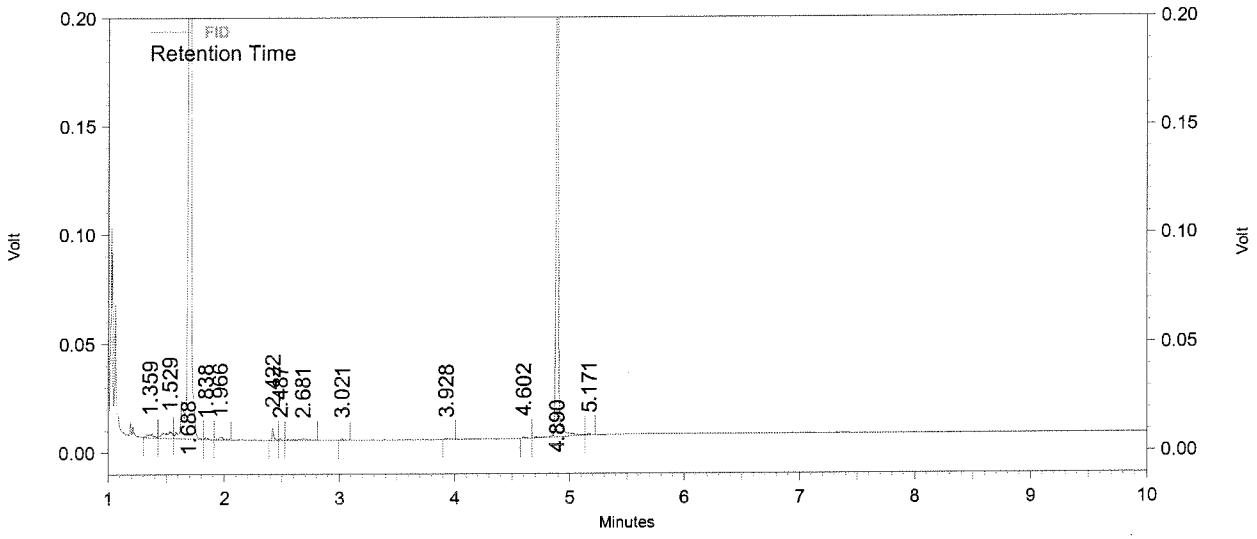
Parameter	H-C Range
DRO	C10-C24
ORO	C24-C36

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : GCT-105 (Offline)
File : D:\Projects\EZC331\Data\LA28\LA28021.dat
Method : D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met
Sequence: : D:\Projects\EZC331\Sequence\LA28.seq
Sample ID : 15A141-03
Acquired : 01/28/15 21:17:20
Printed : 01/29/15 12:59:07
User : KLinn

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.688	1211275	16736.07261	72.375
HEXACOSANE	4.890	416500	23858.57389	17.457
DIESEL(TOTAL)		44117	28620.13271	1.541
DIESEL(C10-C24)		19429	27919.60062	0.696
M.OIL(C24-C36)		951	18035.59361	0.053
Totals		1692272		92.122



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:	01/27/15
Batch No.	: 15A141	Date Extracted:	01/27/15 12:45
Sample ID:	MBLK1W	Date Analyzed:	01/28/15 16:45
Lab Samp ID:	DSA014WB	Dilution Factor:	1
Lab File ID:	LA28005A	Matrix :	WATER
Ext Btch ID:	DSA014W	% Moisture :	NA
Calib. Ref.:	LA28003A	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	0.908	1.000	90.8	60-130
HEXACOSANE	0.211	0.2500	84.6	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.: 15A141
METHOD: SW3520C/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSA014WB	DSA014WL	DSA014WC		
LAB FILE ID:	LA28005A	LA28006A	LA28007A		
DATE EXTRACTED:	01/27/1512:45	01/27/1512:45	01/27/1512:45	DATE COLLECTED:	NA
DATE ANALYZED:	01/28/1516:45	01/28/1517:02	01/28/1517:19	DATE RECEIVED:	01/27/15
PREP. BATCH:	DSA014W	DSA014W	DSA014W		
CALIB. REF:	LA28003A	LA28003A	LA28003A		

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	4.25	85	5.00	4.16	83	2	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	0.999	100	1.00	1.06	106	60-130
Hexacosane	0.250	0.236	95	0.250	0.247	99	60-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: BATTELLE
PROJECT: RED HILL PHASE 1B
BATCH NO.: 15A141
METHOD: SW3520C/8015B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1.01	1.09	1.03		
SAMPLE ID:	RHMW06-GW-02				
LAB SAMP ID:	A141-03	A141-03M	A141-03S		
LAB FILE ID:	LA28021A	LA28022A	LA28023A		
DATE EXTRACTED:	01/27/1512:45	01/27/1512:45	01/27/1512:45	DATE COLLECTED:	01/23/15
DATE ANALYZED:	01/28/1521:17	01/28/1521:34	01/28/1521:51	DATE RECEIVED:	01/24/15
PREP. BATCH:	DSA014W	DSA014W	DSA014W		
CALIB. REF:	LA28015A	LA28015A	LA28015A		

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	5.45	3.48	64	5.15	3.70	72	12	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	1.09	0.885	81	1.03	0.954	93	60-130
Hexacosane	0.273	0.213	78	0.257	0.230	89	60-130

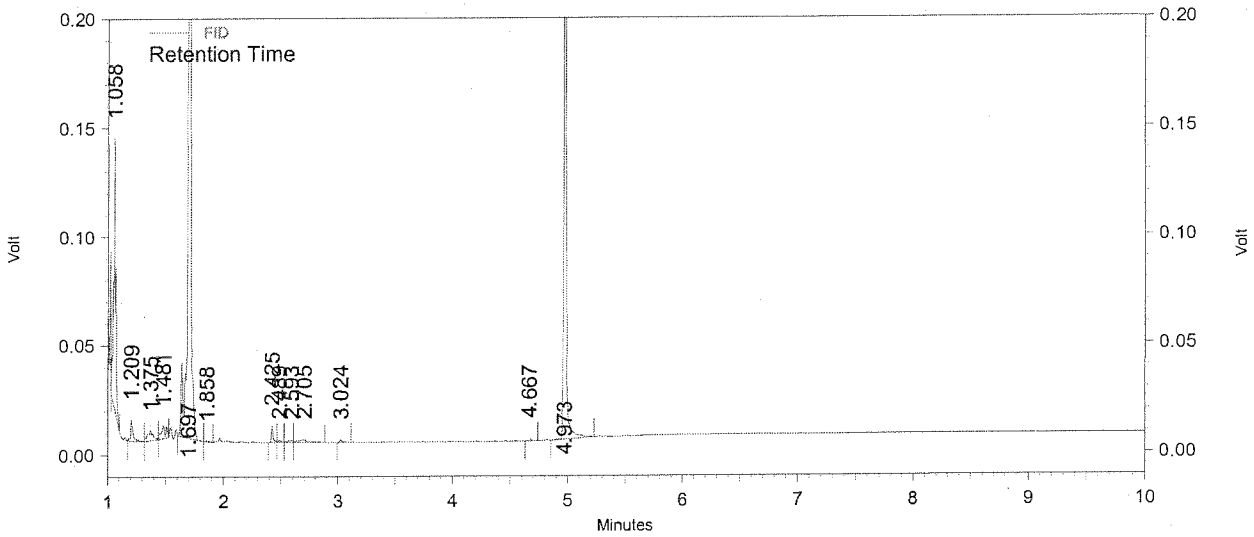
QC DATA

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28005.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: DSA014WB**
Acquired	**: 01/28/15 16:45:28**
Printed	**: 01/29/15 14:40:37**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.697	1520292	16736.07261	90.839
HEXACOSANE	4.973	504546	23858.57389	21.147
DIESEL(TOTAL)		67724	28620.13271	2.366
DIESEL(C10-C24)		22380	27919.60062	0.802
M.OIL(C24-C36)		0	18035.59361	0.000
Totals		2114942		115.154



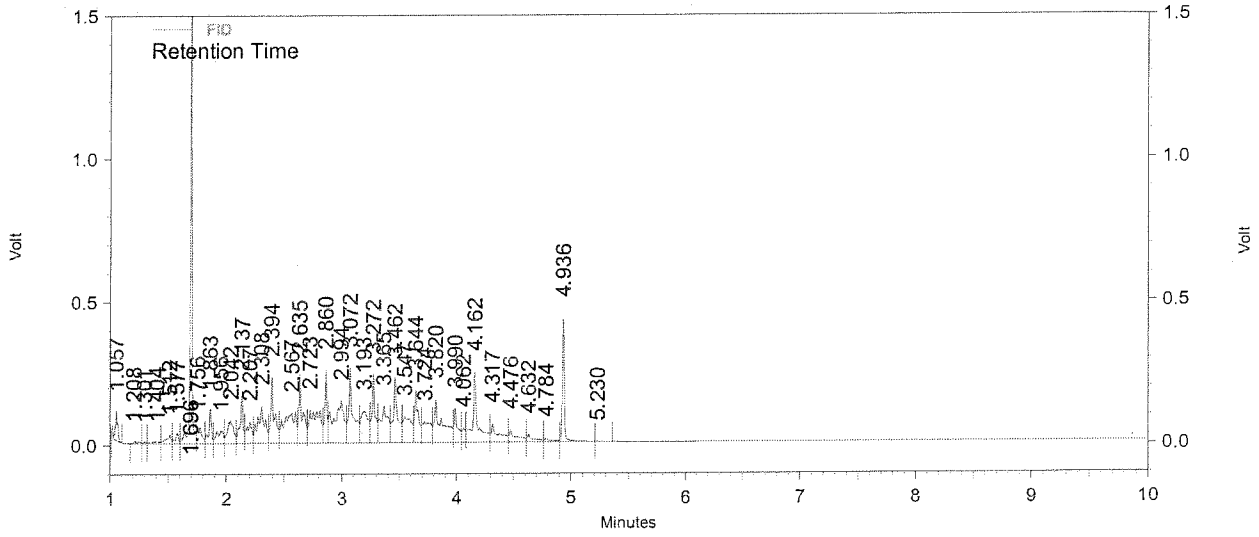
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28006.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: DSA014WL**
Acquired	**: 01/28/15 17:02:21**
Printed	**: 01/29/15 14:40:54**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.696	1672083	16736.07261	99.909
HEXACOSANE	4.936	564224	23858.57389	23.649
DIESEL(TOTAL)		12476297	28620.13271	435.927
DIESEL(C10-C24)		11860289	27919.60062	424.802
M.OIL(C24-C36)		54928	18035.59361	3.046
Totals		26627821		987.332



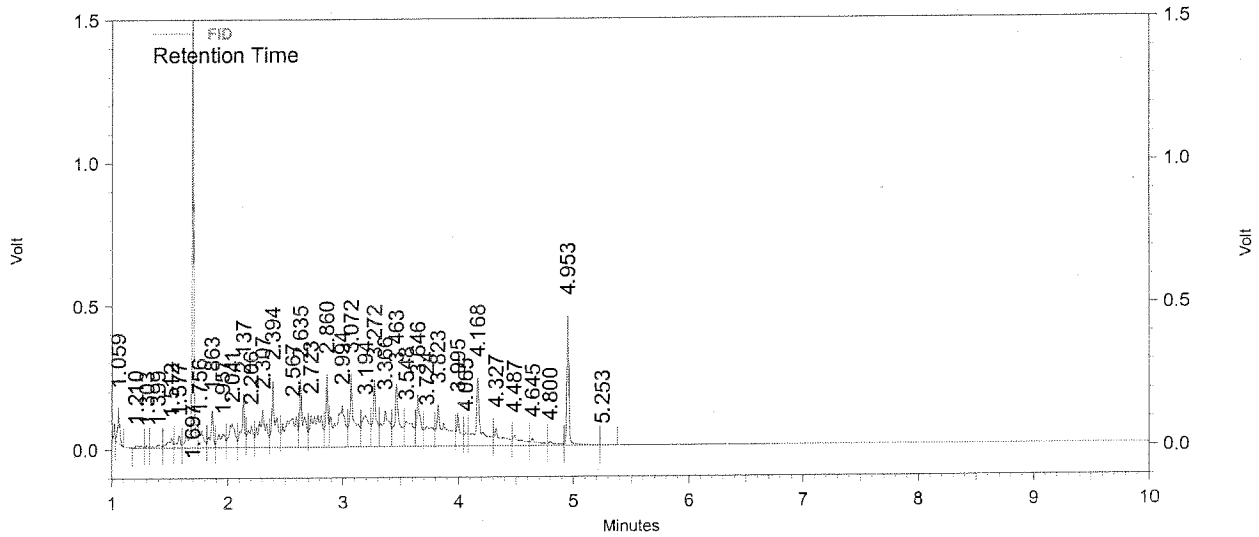
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28007.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: DSA014WC**
Acquired	**: 01/28/15 17:19:12**
Printed	**: 01/29/15 14:41:02**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.697	1772698	16736.07261	105.921
HEXACOSANE	4.953	589234	23858.57389	24.697
DIESEL(TOTAL)		12306873	28620.13271	430.008
DIESEL(C10-C24)		11626416	27919.60062	416.425
M.OIL(C24-C36)		53198	18035.59361	2.950
Totals		26348419		980.000



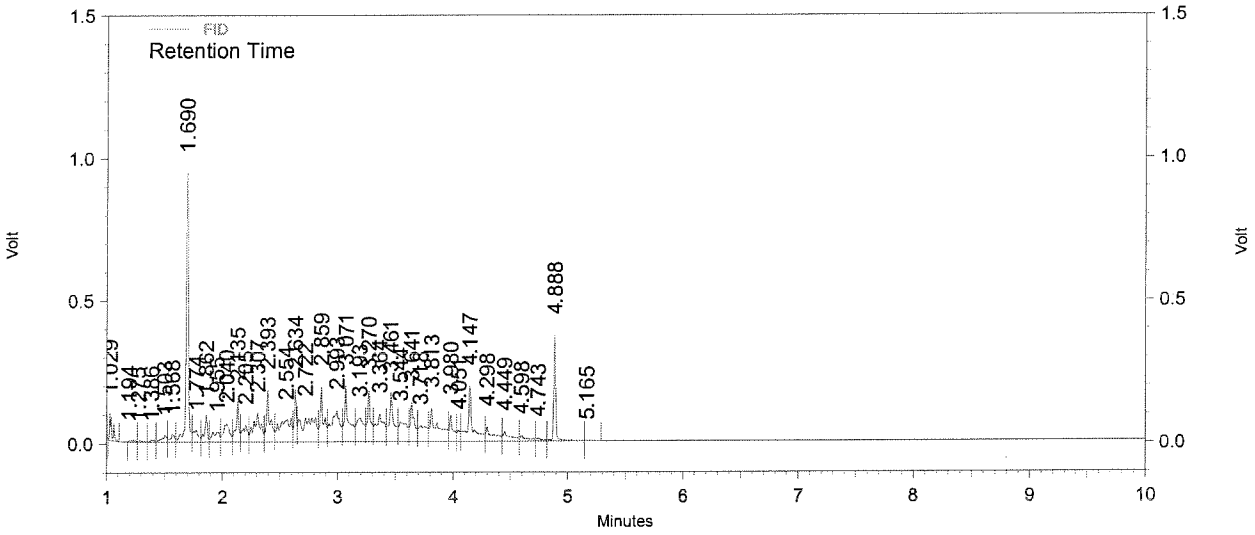
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28022.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: 15A141-03M**
Acquired	**: 01/28/15 21:34:22**
Printed	**: 01/29/15 12:59:33**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.690	1358733	16736.07261	81.186
HEXACOSANE	4.888	467110	23858.57389	19.578
DIESEL(TOTAL)		9412054	28620.13271	328.861
DIESEL(C10-C24)		8907133	27919.60062	319.028
M.OIL(C24-C36)		37392	18035.59361	2.073
Totals		20182422		750.727



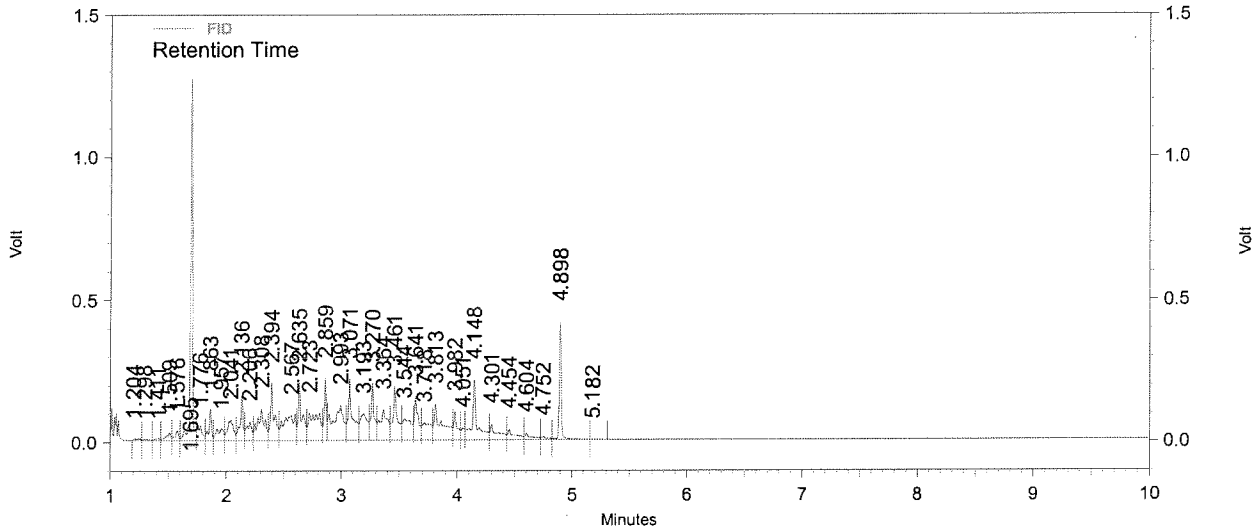
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28023.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05M.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: 15A141-03S**
Acquired	**: 01/28/15 21:51:22**
Printed	**: 01/29/15 12:59:40**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.695	1550442	16736.07261	92.641
HEXACOSANE	4.898	532845	23858.57389	22.333
DIESEL(TOTAL)		10611221	28620.13271	370.761
DIESEL(C10-C24)		10031689	27919.60062	359.306
M.OIL(C24-C36)		40709	18035.59361	2.257
Totals		22766906		847.298



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

INITIAL CALIBRATION
METHOD M8015

Lab Name : EMAX Inc
Instrument ID : D5
GC Columm : 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

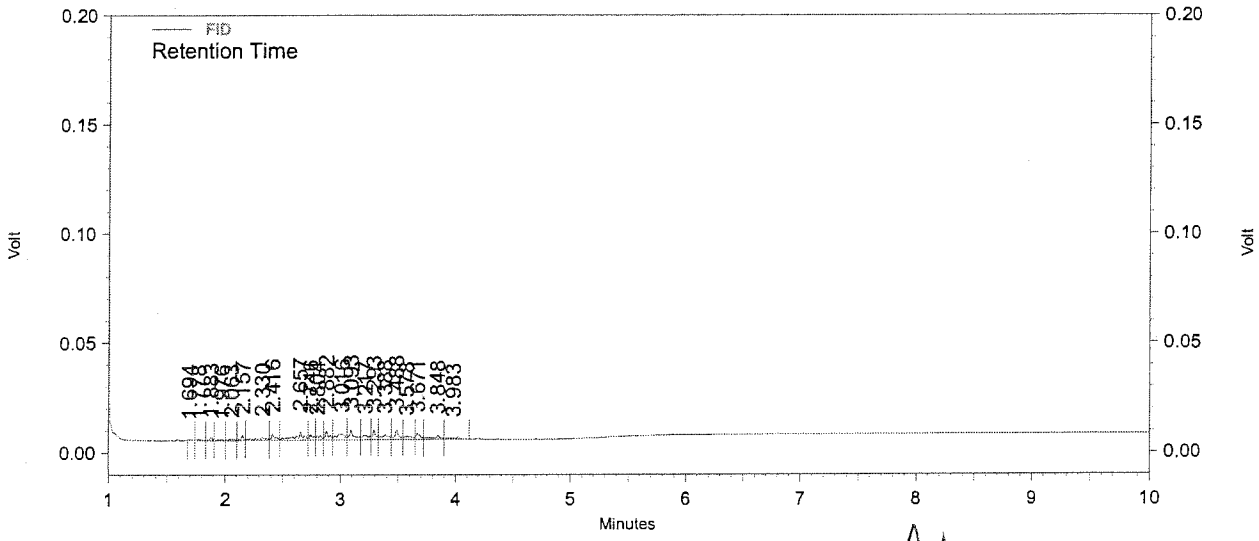
AS
11/06/14

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

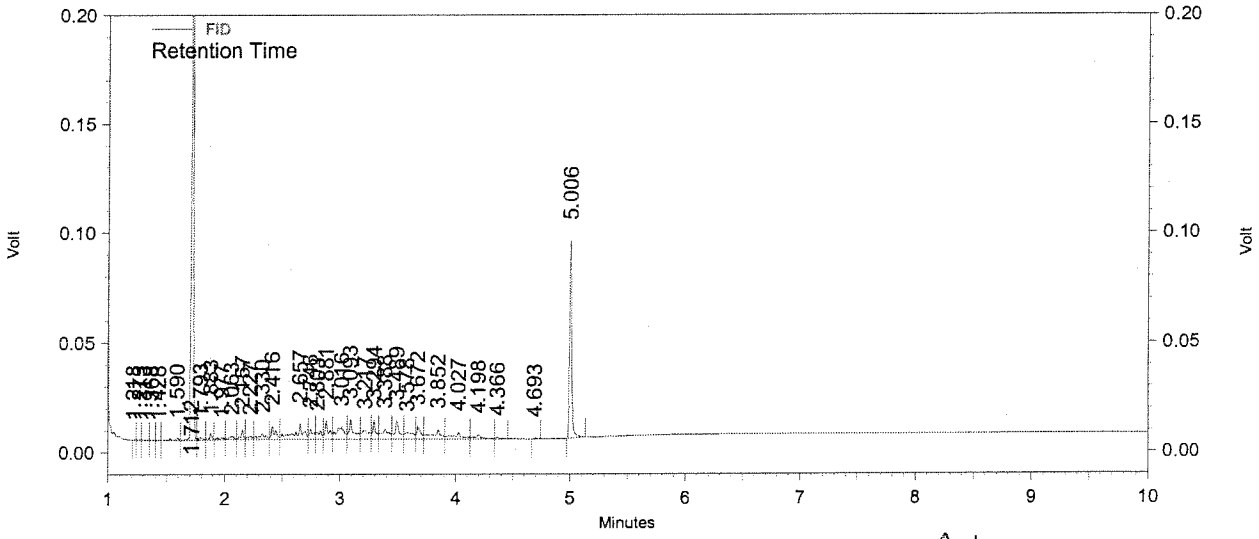
Software Version: Version 3.3.1

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

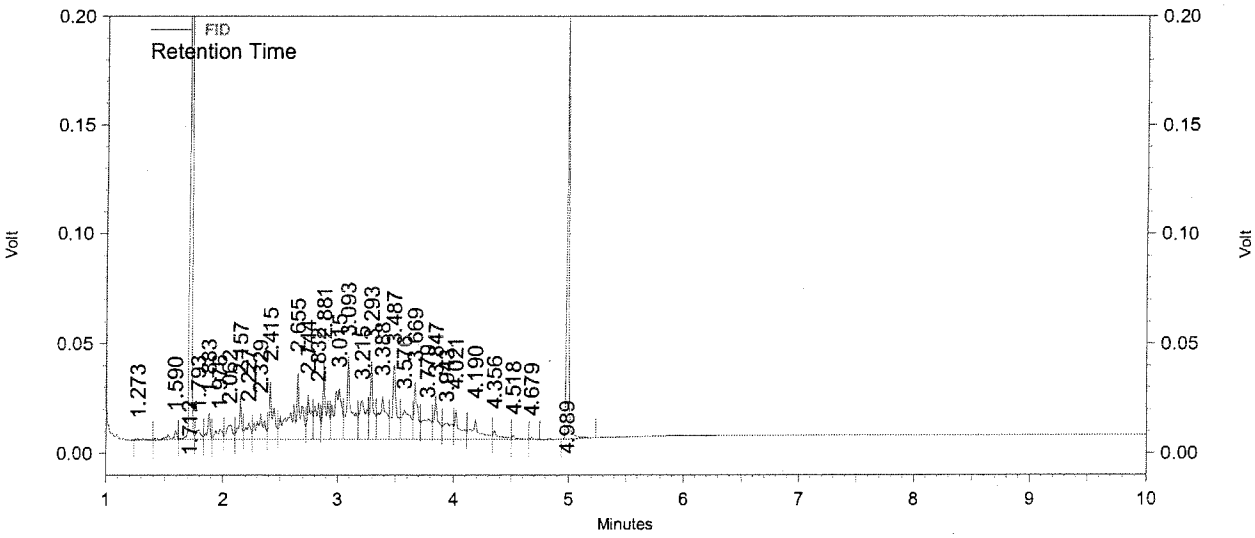
5024

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



DA
11/06/14

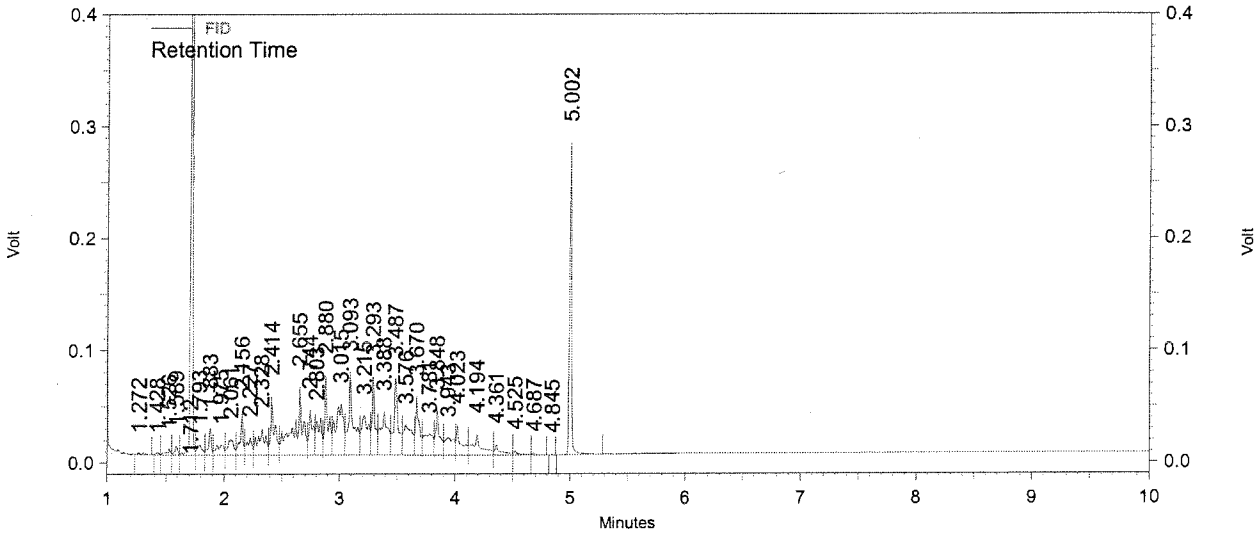
Software Version: Version 3.3.1

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



LA
11/06/14

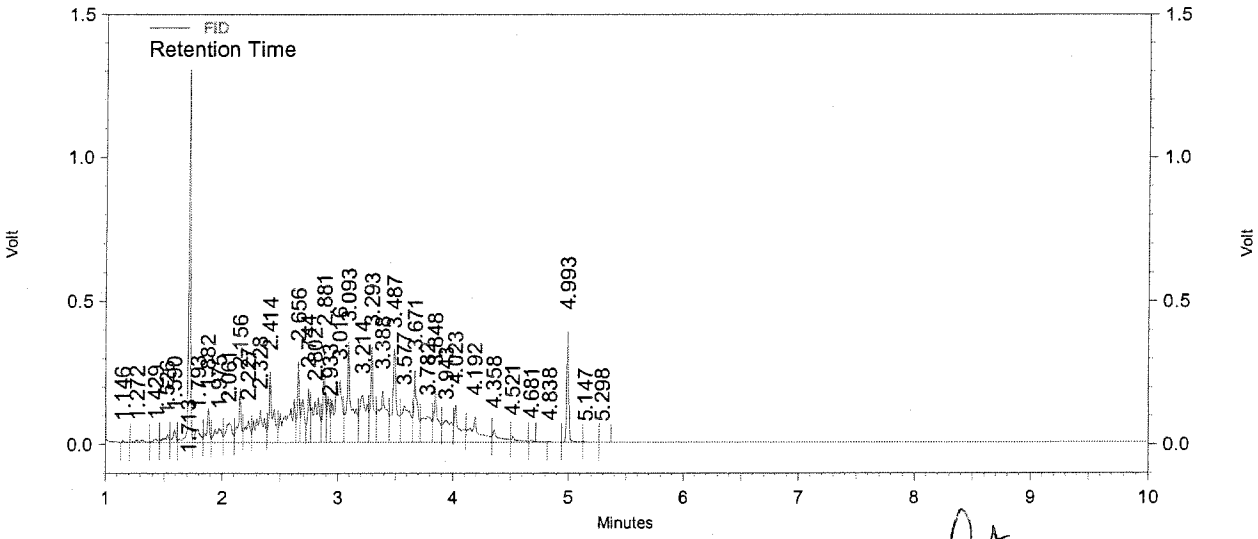
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name: : GCT-105 (Offline)
File : D:\Projects\EZC331\Data\LK05\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



11/06/14

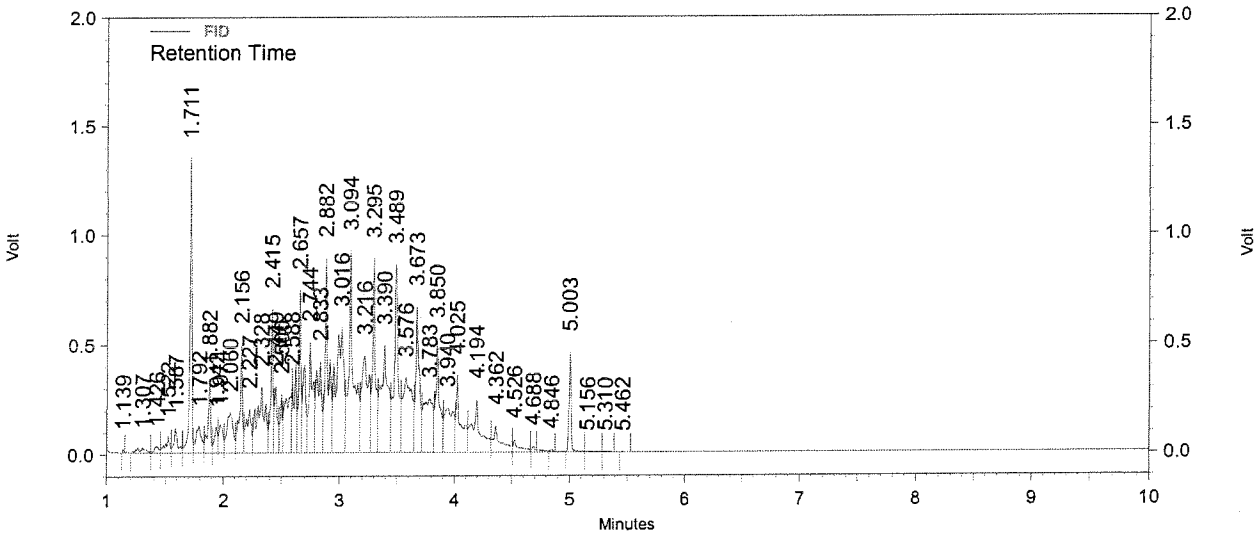
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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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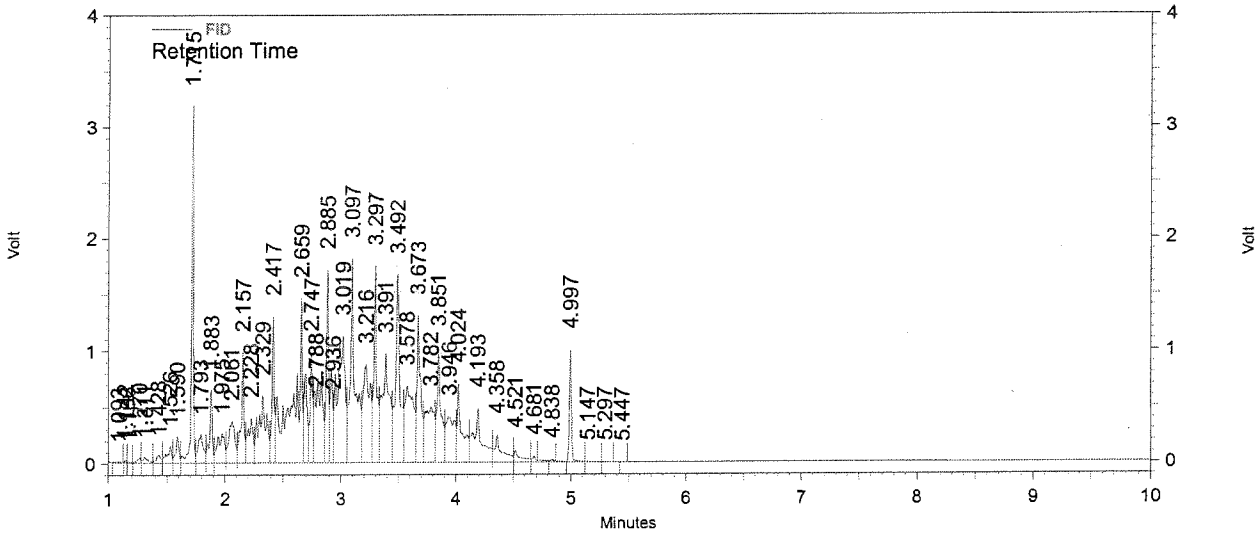
Software Version: Version 3.3.1

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 Columm : 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

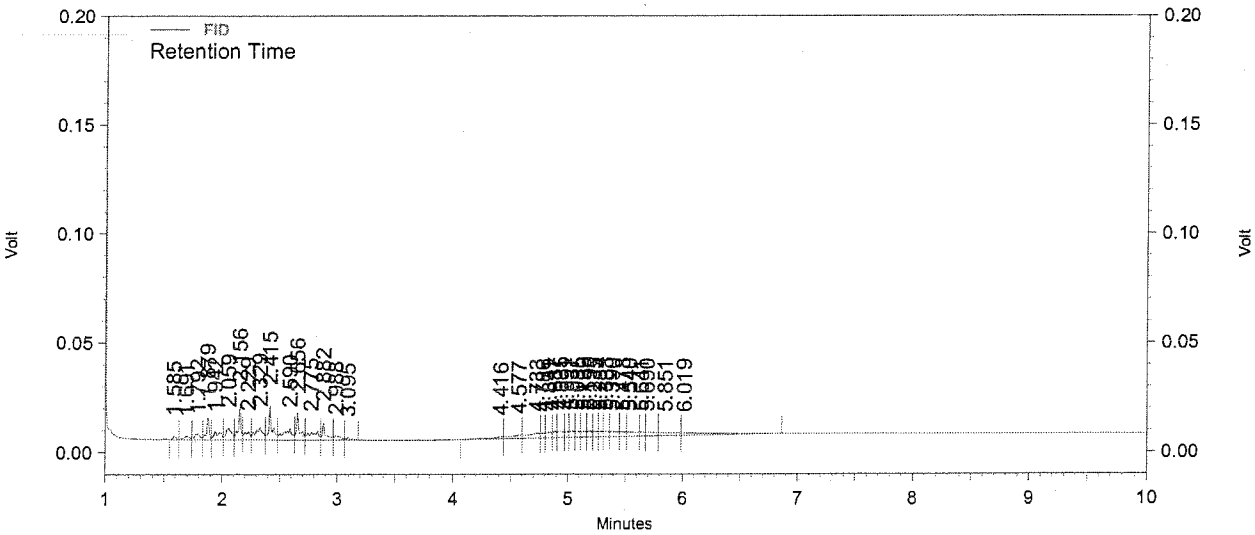
As
11/06/14

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



11/06/14

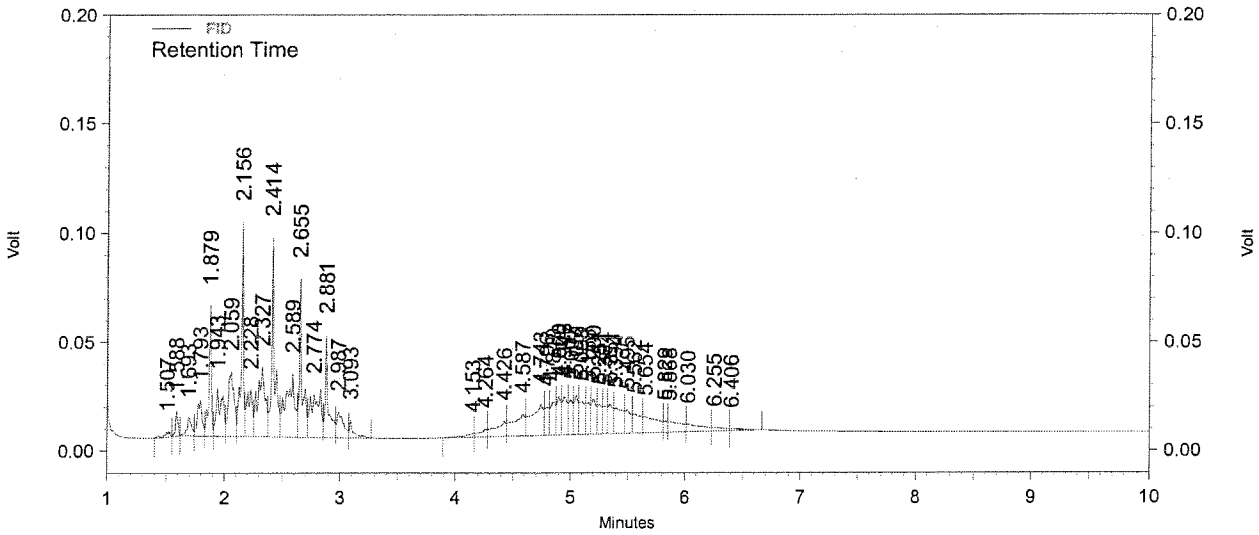
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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



AS 11/06/14

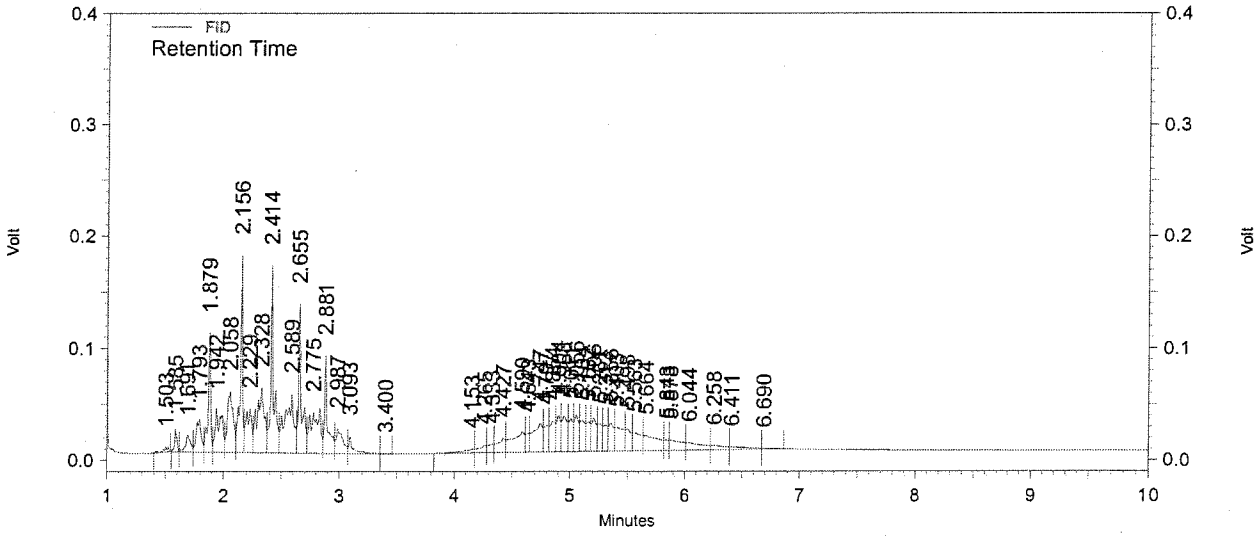
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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



AS 11/06/14

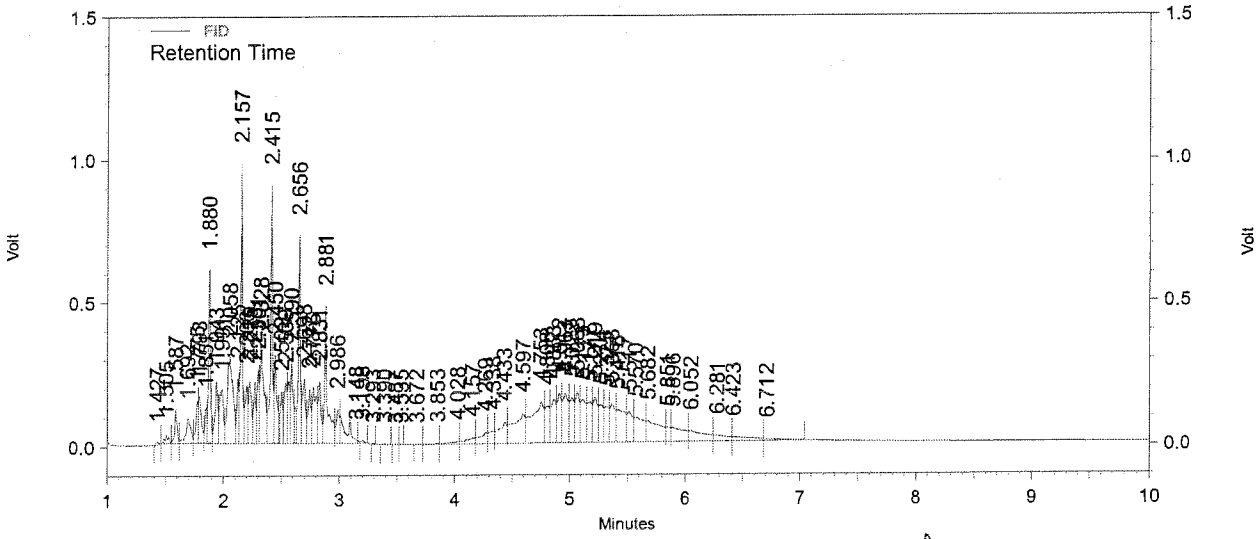
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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



AA 11/06/14

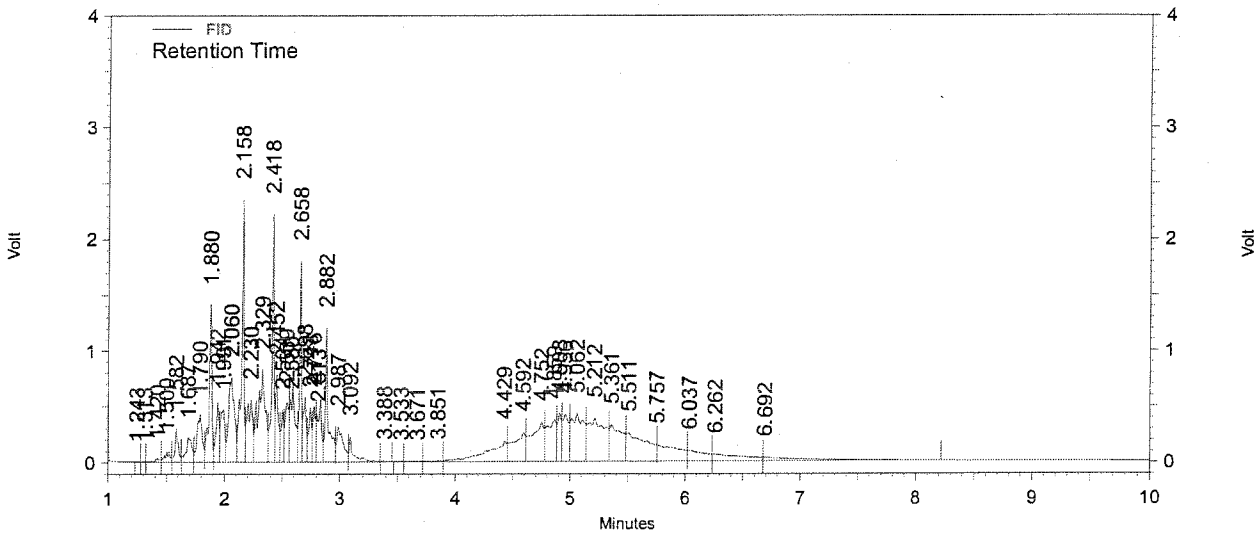
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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



AA 11/06/14

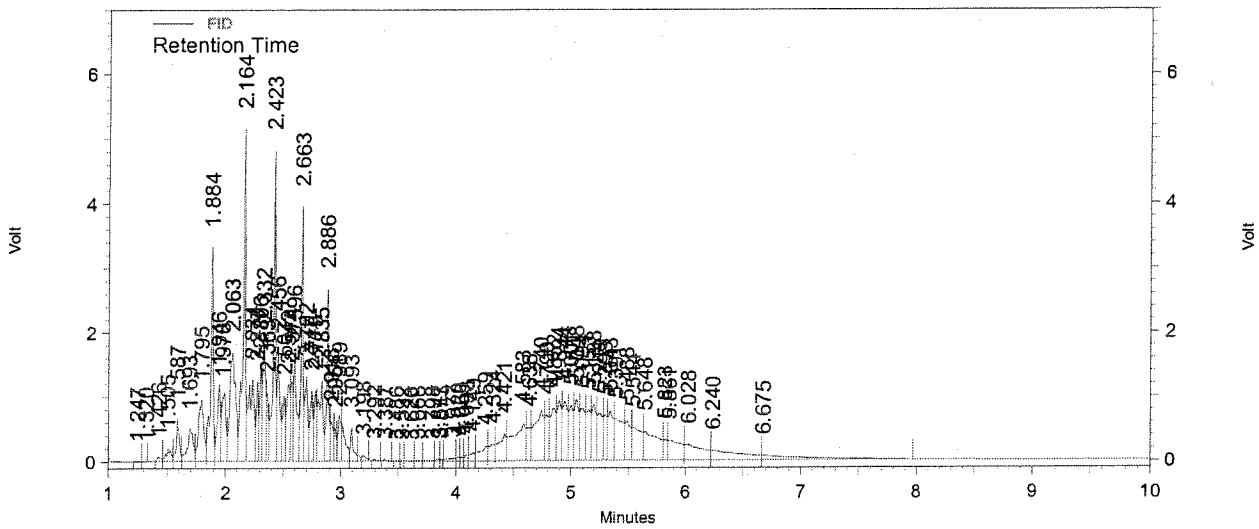
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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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11/06/14

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: 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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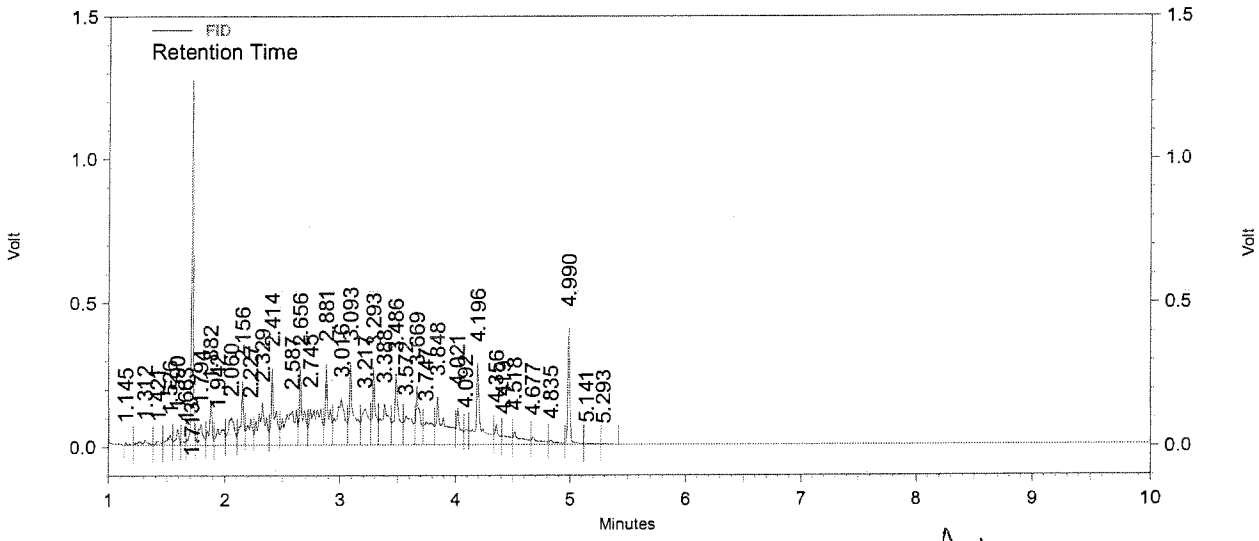
11/06/14

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

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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

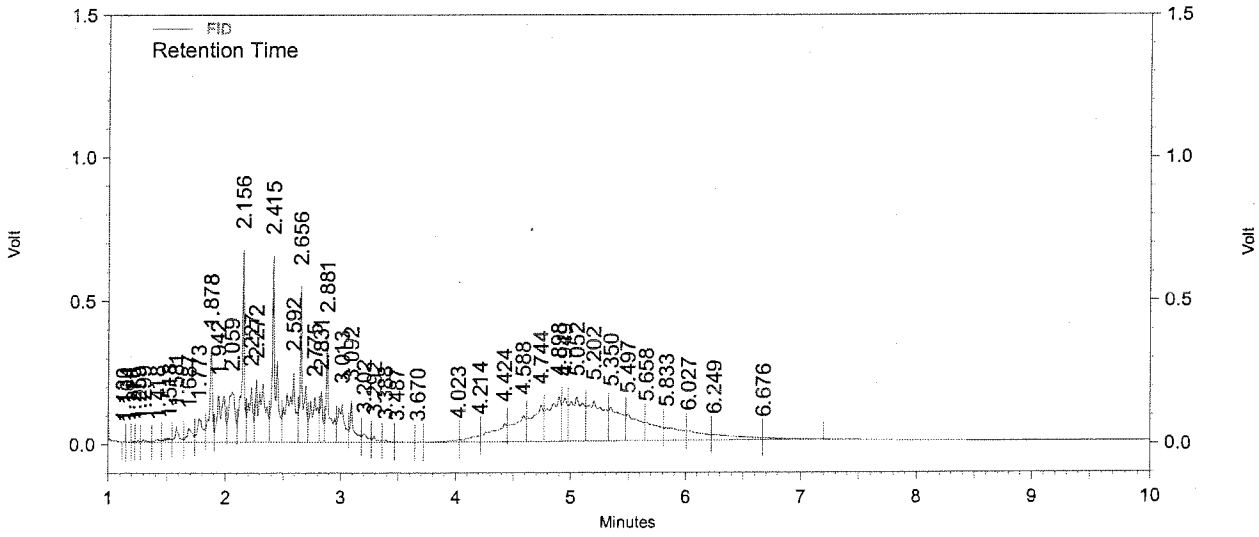
11/06/14

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



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11/06/14

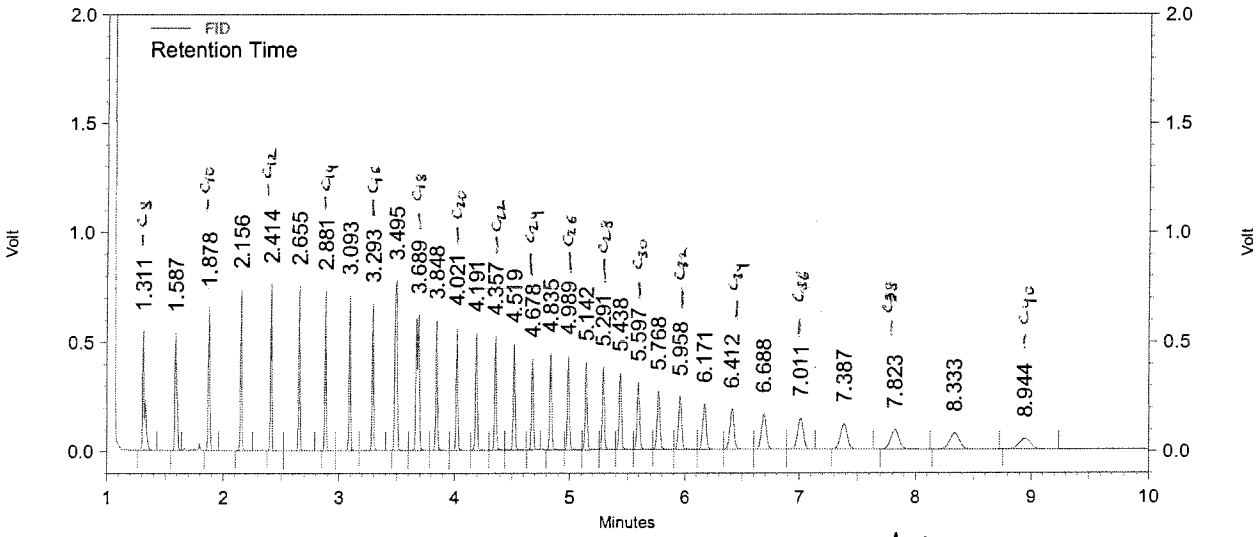
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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



11/06/14

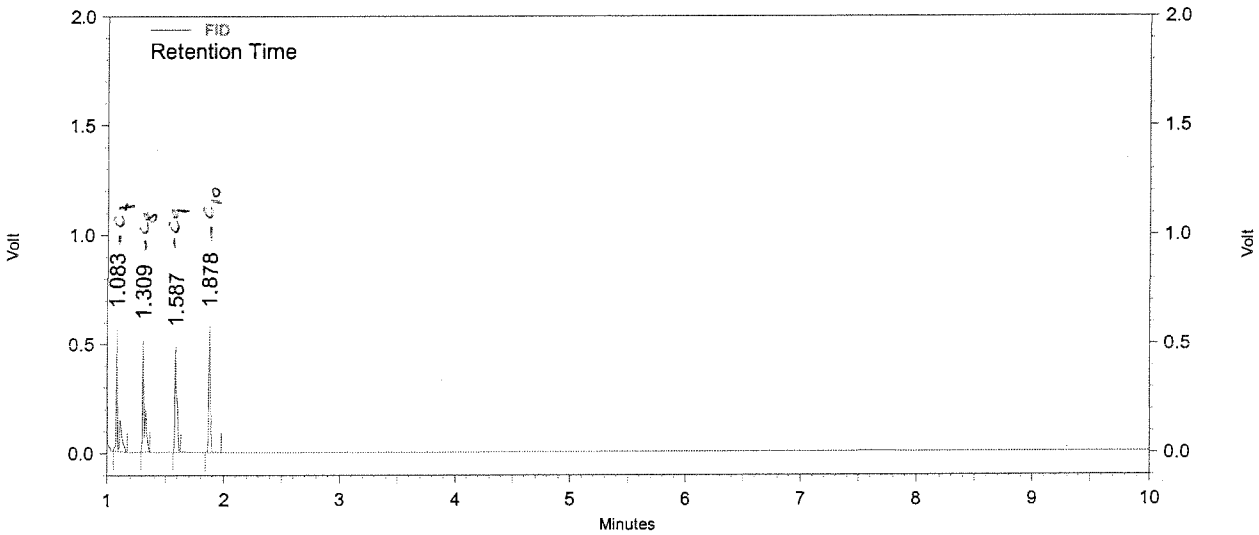
Software Version: Version 3.3.1

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LK05\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

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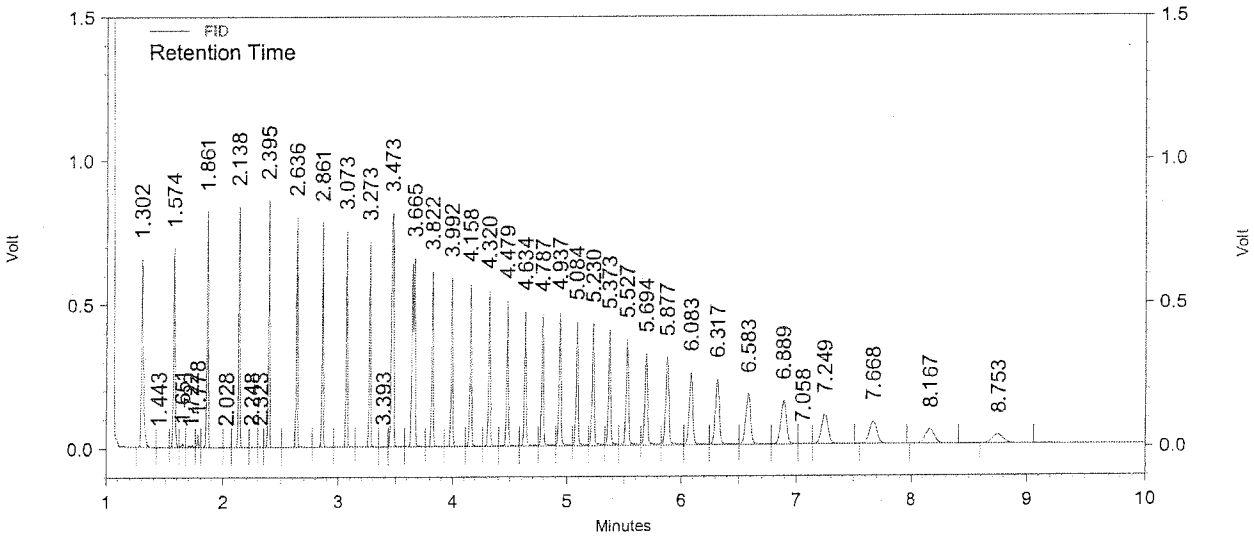
DAILY CALIBRATIONS

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105**
File	**: D:\Projects\EZC331\Data\LA28\LA28001.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: DRO(C8-C40 + C9-C39)**
Acquired	**: 01/28/15 15:16:37**
Printed	**: 01/28/15 15:26:49**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.722	13639	16736.07261	0.815
HEXACOSANE	4.937	572380	23858.57389	23.991
DIESEL(TOTAL)		19647035	28620.13271	686.476
DIESEL(C10-C24)		9953396	27919.60062	356.502
DIESEL(C10-C28)		11617878	27961.51805	415.495
DIESEL(C10-C25)		10511613	27958.48881	375.972
DIESEL(C9-C24)		10744615	28359.12910	378.877
DIESEL(C9-C25)		11302832	28390.94238	398.114
DIESEL(C10-C36)		16132803	27962.70357	576.940
DIESEL(C10-C40)		17387404	27962.70357	621.807
Totals		107883595		3834.989



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: LK05007A 11/05/2014 10:58
Conc Cont LFID & Datetime: LA28003A 01/28/2015 15:50
CONC UNIT : ppm

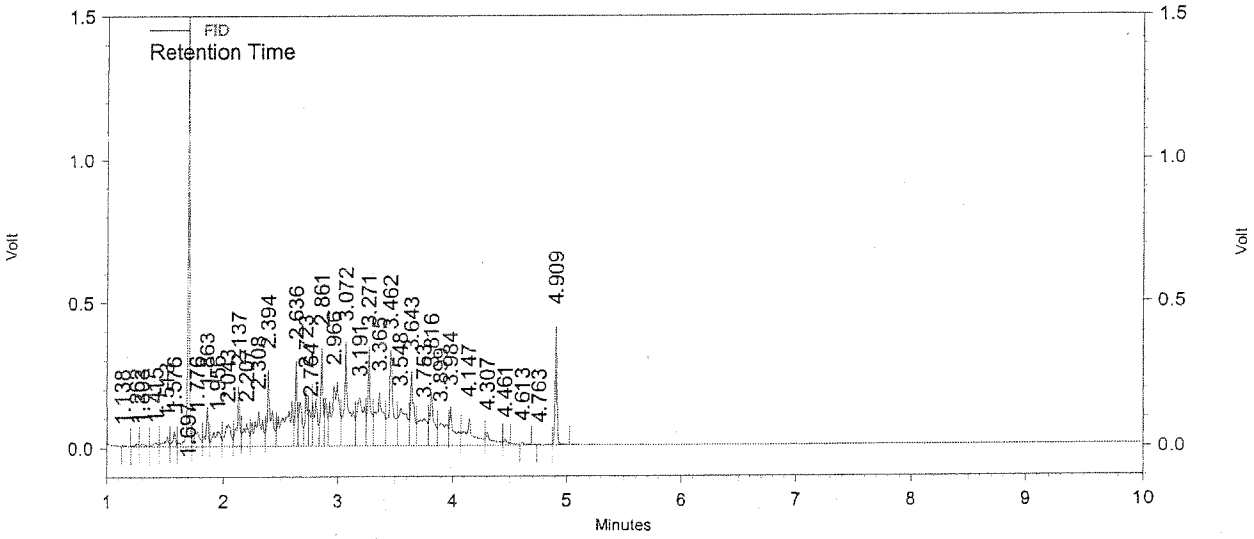
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	28620.1	12953012	452.58	-9		20
DIESEL(C10-C24)	NA	NA	NA	500.0	27919.6	12305318	440.74	-12		20
DIESEL(C10-C28)	NA	NA	NA	500.0	27961.5	12312145	440.33	-12		20
DIESEL(C10-C25)	NA	NA	NA	500.0	27958.5	12312145	440.37	-12		20
DIESEL(C9-C24)	NA	NA	NA	500.0	28359.1	12691598	447.53	-10		20
DIESEL(C9-C25)	NA	NA	NA	500.0	28390.9	12698425	447.27	-11		20
DIESEL(C10-C36)	NA	NA	NA	500.0	27962.7	12312145	440.31	-12		20
DIESEL(C10-C40)	NA	NA	NA	500.0	27962.7	12312145	440.31	-12		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
BROMOBENZENE	1.697	1.694	1.700	80.0	16736.1	1544573	92.29	15		20
HEXACOSANE	4.909	4.861	4.957	20.0	23858.6	485623	20.35	2		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28003.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: CDSD5K05732 DSL 500/80/20PPM**
Acquired	**: 01/28/15 15:50:33**
Printed	**: 01/29/15 14:49:37**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.697	1544573	16736.07261	92.290
HEXACOSANE	4.909	485623	23858.57389	20.354
DIESEL(TOTAL)		12953012	28620.13271	452.584
DIESEL(C10-C24)		12305318	27919.60062	440.741
DIESEL(C10-C28)		12312145	27961.51805	440.325
DIESEL(C10-C25)		12312145	27958.48881	440.372
DIESEL(C9-C24)		12691598	28359.12910	447.531
DIESEL(C9-C25)		12698425	28390.94238	447.270
DIESEL(C10-C36)		12312145	27962.70357	440.306
DIESEL(C10-C40)		12312145	27962.70357	440.306
Totals		101927129		3662.080



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: LK05014A 11/05/2014 12:56
Conc Cont LFID & Datetime: LA28004A 01/28/2015 16:07
CONC UNIT : ppm

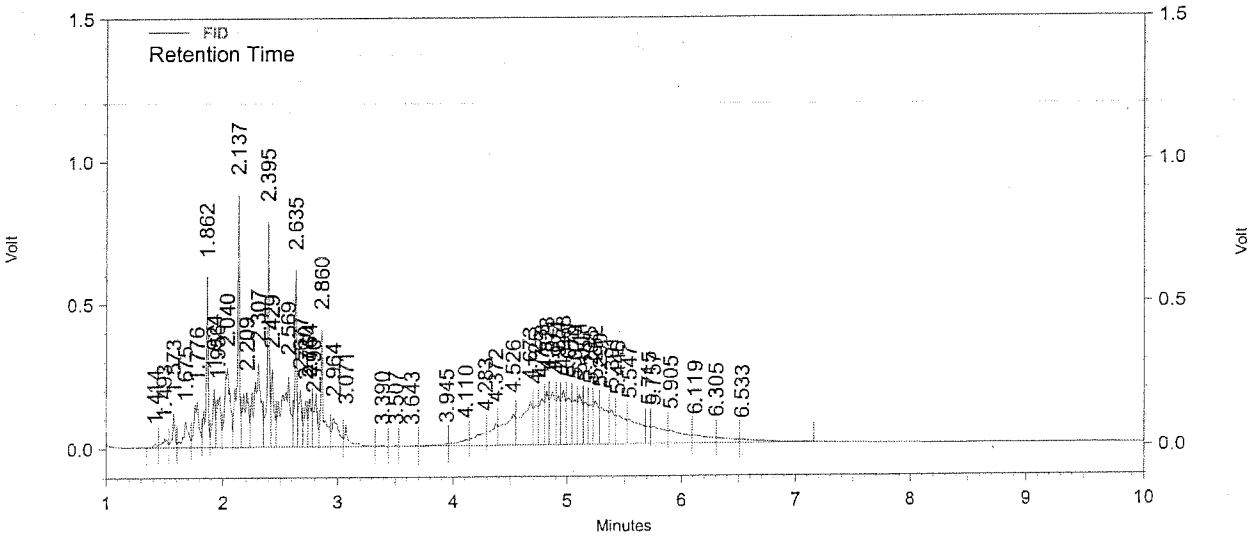
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	26763.6	12934141	483.27	-3		20
M.OIL(C18-C36)	NA	NA	NA	500.0	20892.0	11750200	562.42	12		20
M.OIL(C24-C36)	NA	NA	NA	500.0	18035.6	9137653	506.65	1		20
M.OIL(C24-C40)	NA	NA	NA	500.0	18035.6	9137653	506.65	1		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28004.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: CDSD5K05733 JP5/5W30 500/500PPM**
Acquired	**: 01/28/15 16:07:38**
Printed	**: 01/29/15 14:54:27**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		12934141	26763.57150	483.274
M.OIL(C18-C36)		11750200	20892.01950	562.425
M.OIL(C24-C36)		9137653	18035.59361	506.646
M.OIL(C24-C40)		9137653	18035.59361	506.646
Totals		42959647		2058.990



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: LK05007A 11/05/2014 10:58
Conc Cont LFID & Datetime: LA28015A 01/28/2015 19:34
CONC UNIT : ppm

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	28620.1	13316463	465.28	-7		20
DIESEL(C10-C24)	NA	NA	NA	500.0	27919.6	12712244	455.32	-9		20
DIESEL(C10-C28)	NA	NA	NA	500.0	27961.5	12733405	455.39	-9		20
DIESEL(C10-C25)	NA	NA	NA	500.0	27958.5	12733405	455.44	-9		20
DIESEL(C9-C24)	NA	NA	NA	500.0	28359.1	13063117	460.63	-8		20
DIESEL(C9-C25)	NA	NA	NA	500.0	28390.9	13084278	460.86	-8		20
DIESEL(C10-C36)	NA	NA	NA	500.0	27962.7	12733405	455.37	-9		20
DIESEL(C10-C40)	NA	NA	NA	500.0	27962.7	12733405	455.37	-9		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
BROMOBENZENE	1.697	1.694	1.700	80.0	16736.1	1404778	83.94	5		20
HEXACOSANE	4.893	4.845	4.941	20.0	23858.6	462156	19.37	-3		20

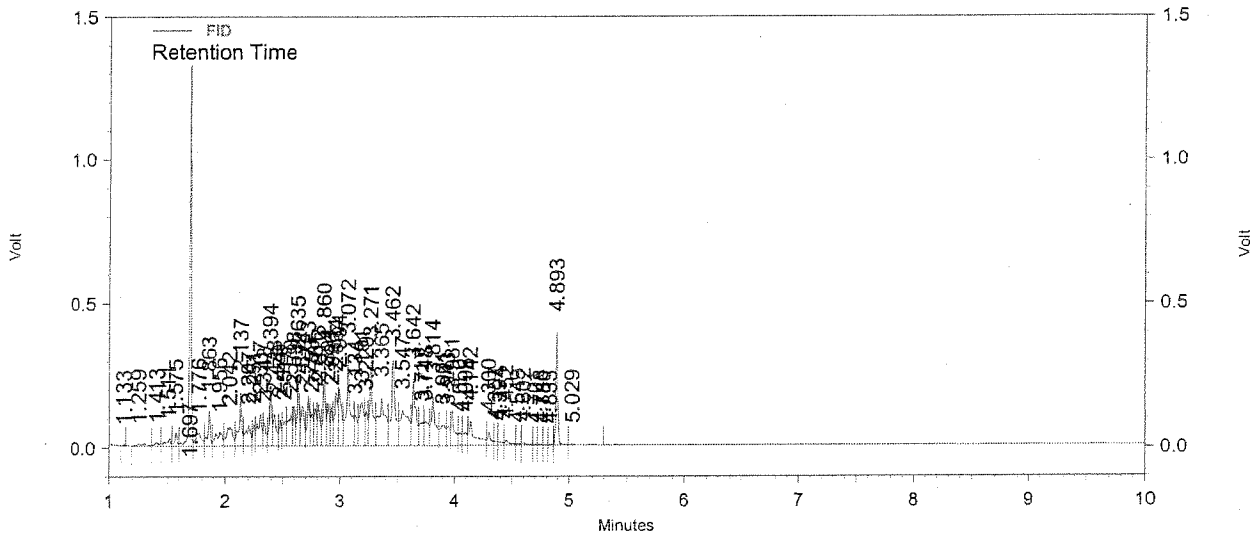
METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28015.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: CDSD5K05734 DSL 500/80/20PPM**
Acquired	**: 01/28/15 19:34:57**
Printed	**: 01/29/15 14:50:50**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.697	1404778	16736.07261	83.937
HEXACOSANE	4.893	462156	23858.57389	19.371
DIESEL(TOTAL)		13316463	28620.13271	465.283
DIESEL(C10-C24)		12712244	27919.60062	455.316
DIESEL(C10-C28)		12733405	27961.51805	455.390
DIESEL(C10-C25)		12733405	27958.48881	455.440
DIESEL(C9-C24)		13063117	28359.12910	460.632
DIESEL(C9-C25)		13084278	28390.94238	460.861
DIESEL(C10-C36)		12733405	27962.70357	455.371
DIESEL(C10-C40)		12733405	27962.70357	455.371

Totals		104976656		3766.972



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: LK05014A 11/05/2014 12:56
Conc Cont LFID & Datetime: LA28016A 01/28/2015 19:52
CONC UNIT : ppm

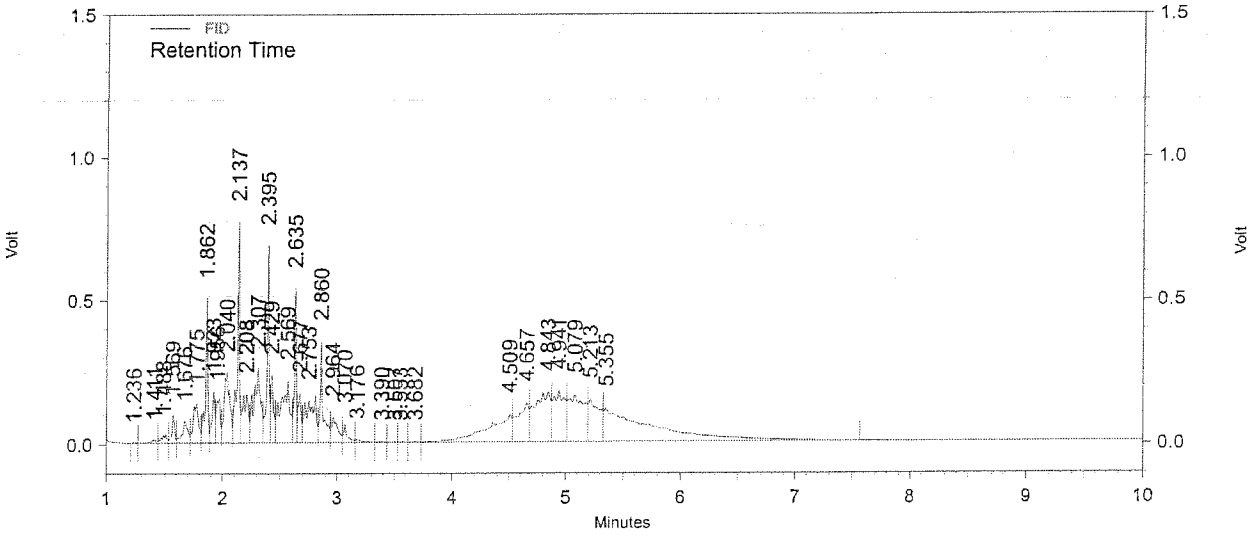
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	26763.6	11405081	426.14	-15		20
M.OIL(C18-C36)	NA	NA	NA	500.0	20892.0	11000300	526.53	5		20
M.OIL(C24-C36)	NA	NA	NA	500.0	18035.6	8704416	482.62	-3		20
M.OIL(C24-C40)	NA	NA	NA	500.0	18035.6	8704416	482.62	-3		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28016.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: CDSD5K05735 JP5/5W30 500/500PPM**
Acquired	**: 01/28/15 19:52:02**
Printed	**: 01/29/15 14:54:37**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		11405081	26763.57150	426.142
M.OIL(C18-C36)		11000300	20892.01950	526.531
M.OIL(C24-C36)		8704416	18035.59361	482.624
M.OIL(C24-C40)		8704416	18035.59361	482.624
Totals		39814213		1917.922



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: LK05007A 11/05/2014 10:58
Conc Cont LFID & Datetime: LA28024A 01/28/2015 22:08
CONC UNIT : ppm

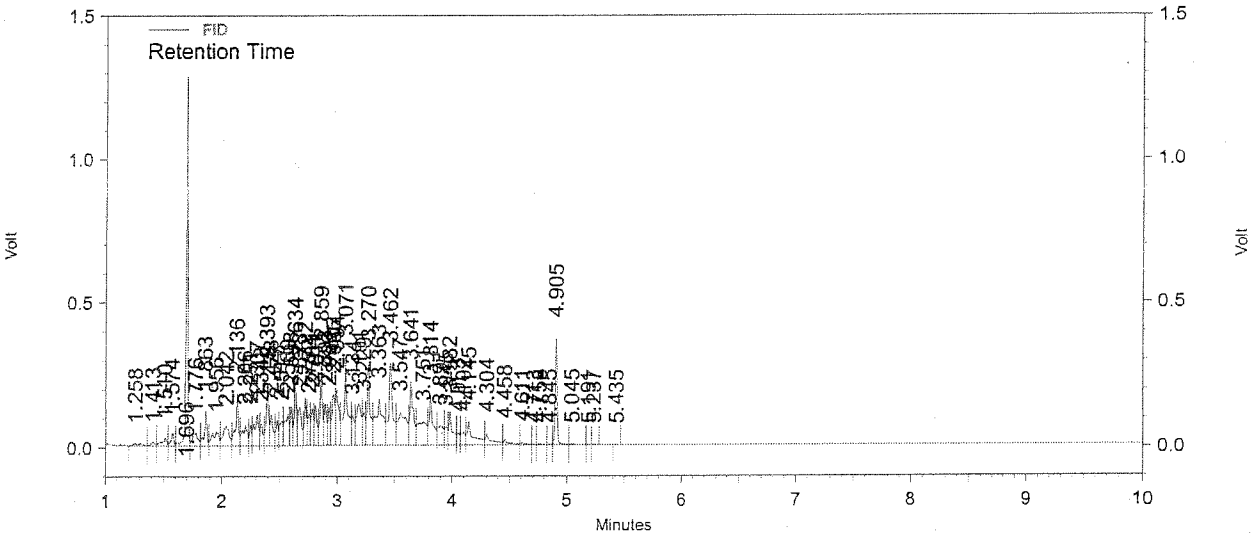
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
DIESEL(TOTAL)	NA	NA	NA	500.0	28620.1	12831049	448.32	-10		20
DIESEL(C10-C24)	NA	NA	NA	500.0	27919.6	12242947	438.51	-12		20
DIESEL(C10-C28)	NA	NA	NA	500.0	27961.5	12260063	438.46	-12		20
DIESEL(C10-C25)	NA	NA	NA	500.0	27958.5	12256701	438.39	-12		20
DIESEL(C9-C24)	NA	NA	NA	500.0	28359.1	12588392	443.89	-11		20
DIESEL(C9-C25)	NA	NA	NA	500.0	28390.9	12598536	443.75	-11		20
DIESEL(C10-C36)	NA	NA	NA	500.0	27962.7	12261391	438.49	-12		20
DIESEL(C10-C40)	NA	NA	NA	500.0	27962.7	12261391	438.49	-12		20
SURROGATE	**MINUTES**	**FROM**	**TO**	**TRUECON**	**CF**	**AREA**	**CONC**	**%D**	**QL**	**LIMITS**
BROMOBENZENE	1.696	1.693	1.699	80.0	16736.1	1384619	82.73	3		20
HEXACOSANE	4.905	4.857	4.953	20.0	23858.6	442466	18.55	-7		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28024.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: CDSD5K05736 DSL 500/80/20PPM**
Acquired	**: 01/28/15 22:08:25**
Printed	**: 01/29/15 14:51:02**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
BROMOBENZENE	1.696	1384619	16736.07261	82.733
HEXACOSANE	4.905	442466	23858.57389	18.545
DIESEL(TOTAL)		12831049	28620.13271	448.322
DIESEL(C10-C24)		12242947	27919.60062	438.507
DIESEL(C10-C28)		12260063	27961.51805	438.462
DIESEL(C10-C25)		12256701	27958.48881	438.389
DIESEL(C9-C24)		12588392	28359.12910	443.892
DIESEL(C9-C25)		12598536	28390.94238	443.752
DIESEL(C10-C36)		12261391	27962.70357	438.491
DIESEL(C10-C40)		12261391	27962.70357	438.491
Totals		101127555		3629.585



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: LK05014A 11/05/2014 12:56
Conc Cont LFID & Datetime: LA28025A 01/28/2015 22:25
CONC UNIT : ppm

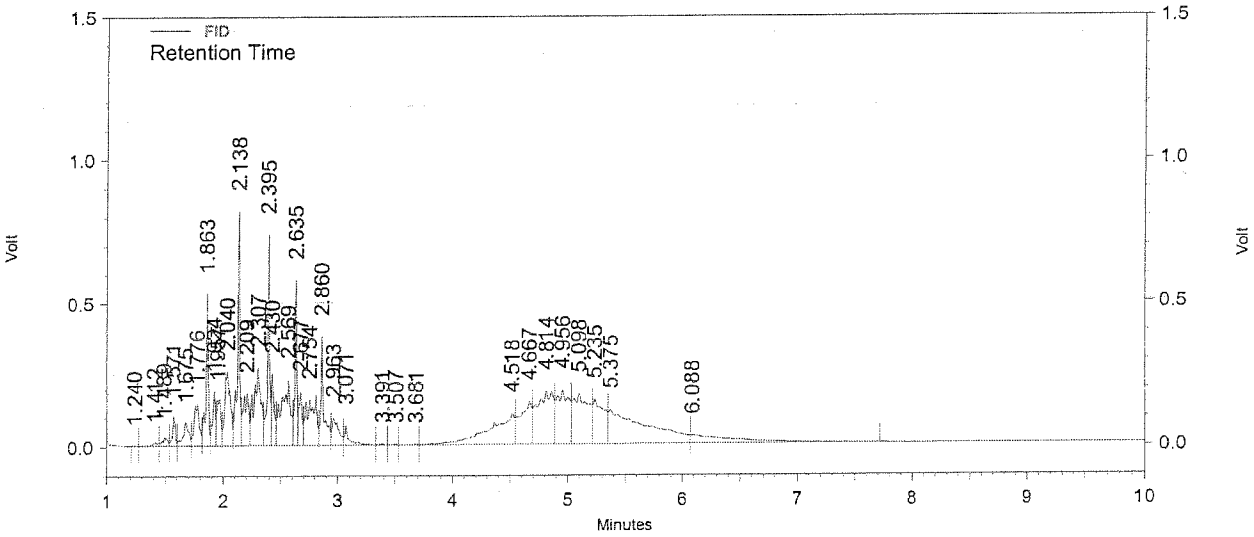
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
JP5(C8-C18)	NA	NA	NA	500.0	26763.6	12165516	454.55	-9		20
M.OIL(C18-C36)	NA	NA	NA	500.0	20892.0	11858378	567.60	14		20
M.OIL(C24-C36)	NA	NA	NA	500.0	18035.6	9281483	514.62	3		20
M.OIL(C24-C40)	NA	NA	NA	500.0	18035.6	9281483	514.62	3		20

METHOD 8015 by GC/FID
EMAX Laboratories, Inc.

Inst. Name:	**: GCT-105 (Offline)**
File	**: D:\Projects\EZC331\Data\LA28\LA28025.dat**
Method	**: D:\Projects\EZC331\Method\2014 METHODS\DSD5K05.met**
Sequence:	**: D:\Projects\EZC331\Sequence\LA28.seq**
Sample ID	**: CDSD5K05737 JP5/5W30 500/500PPM**
Acquired	**: 01/28/15 22:25:29**
Printed	**: 01/29/15 14:54:51**
User	**: KLinn**

FID Results

Name	Retention Time	Area	Average RF	ESTD conc. [ppm]
JP5(C8-C18)		12165516	26763.57150	454.555
M.OIL(C18-C36)		11858378	20892.01950	567.603
M.OIL(C24-C36)		9281483	18035.59361	514.620
M.OIL(C24-C40)		9281483	18035.59361	514.620
Totals		42586860		2051.399



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 11/5/14

Book #:	AD5-030
Instrument No.:	D5
Analytical Sequence:	LK05
Method File:	DSD5K05, AKD5I25
Analytical Batch:	CDSD5K05407

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
JP5/5W30 DCC	SS3B-17-96-03	500/500
Alaska DCC	SS3B-17-90-02	500/500/20/80
~~Arizona DCC~~ DRO	SS3B-17-91-02	—
GRO	SS3B-17-82-02	—
DSL ICV	SS3B-19-06-02	500/80/20
JP5/5W30 ICV1	SS3B-19-07-01	500/500
JP5/5W30 ICV2	SS3B-19-07-02	500/500

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZCHROM_GC6890N	
☐ External Hard Drive	

Analyzed By: KHL

Date: 11/5/14

5060

GCT-105 Method: AKD5I25.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
1	Complete	Unknc	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	AKD5I25.met	LK05043.dat		
44	Complete	Unknown	0	98	2	CAKD5I25413 500/500/20/80PPM	AKD5I25.met	LK05044.dat		

FINAL

KHL 11/6/14

For Help, press F1

Start untitled - Paint EZChrom Elite GCT-105 Method: A... GCT-105 (Offline) Me... D:\Projects\EZC331\Export

Thursday, November 06, 2014 08:41

5061

GCT-105 Method: AKD5I25.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	CAKD5I25413 500/500/20/80PPM	AKD5I25.met	LK05044.dat		
45	Complete	Unknown	0	17	2	DRO(C8-C40 + C9-C39)	AKD5I25.met	LK05045.dat		
46	Complete	Unknown	0	35	2	DSK007SB	AKD5I25.met	LK05046.dat		
47	Complete	Unknown	0	36	2	LOQ-06	AKD5I25.met	LK05047.dat		
48	Complete	Unknown	0	37	2	LOD-06	AKD5I25.met	LK05048.dat		
49	Complete	Unknown	0	38	2	DSK004WB	AKD5I25.met	LK05049.dat		
50	Complete	Unknown	0	39	2	DSK004WL	AKD5I25.met	LK05050.dat		
51	Complete	Unknown	0	40	2	DSK004WC	AKD5I25.met	LK05051.dat		
52	Complete	Unknown	0	41	2	LOQ-05	AKD5I25.met	LK05052.dat		
53	Complete	Unknown	0	42	2	LOD-05	AKD5I25.met	LK05053.dat		
54	Complete	Unknown	0	43	2	14J226-02	AKD5I25.met	LK05054.dat		
55	Complete	Unknown	0	98	2	CAKD5I25414 500/500/20/80PPM	AKD5I25.met	LK05055.dat		
56	Complete	Unknown	0	17	2	DRO(C8-C40 + C9-C39)	AKD5I25.met	LK05056.dat		
57	Complete	Unknown	0	44	2	DSK006SB	AKD5I25.met	LK05057.dat		
58	Complete	Unknown	0	45	2	DSK006SL	AKD5I25.met	LK05058.dat		
59	Complete	Unknown	0	46	2	DSK006SC	AKD5I25.met	LK05059.dat		
60	Complete	Unknown	0	47	2	14J226-04	AKD5I25.met	LK05060.dat		
61	Complete	Unknown	0	48	2	14J226-05	AKD5I25.met	LK05061.dat		
62	Stopped	Unknown	0	98	2	CAKD5I25415 500/500/20/80PPM	AKD5I25.met	LK05062.dat	ANY	
63		Unknown	0		2	IB	AKD5I25.met	LK05063.dat		
64		Unknown	0		2	IB	AKD5I25.met	LK05064.dat		
65		Unknown	0		2	IB	AKD5I25.met	LK05065.dat		
66		Unknown	0		2	IB	AKD5I25.met	LK05066.dat		
67		Unknown	0		2	IB	AKD5I25.met	LK05067.dat		
68		Unknown	0		2	IB	AKD5I25.met	LK05068.dat		
69		Unknown	0		2	IB	AKD5I25.met	LK05069.dat		
70		Unknown	0		2	IB	AKD5I25.met	LK05070.dat		
71		Unknown	0		2	IB	AKD5I25.met	LK05071.dat		
72		Unknown	0		2	IB	AKD5I25.met	LK05072.dat		
73		Unknown	0		2	IB	AKD5I25.met	LK05073.dat		
74		Unknown	0		2	IB	AKD5I25.met	LK05074.dat		
75		Unknown	0		2	IB	AKD5I25.met	LK05075.dat		
76		Unknown	0		2	IB	AKD5I25.met	LK05076.dat		
77		Unknown	0		2	IB	AKD5I25.met	LK05077.dat		
78		Unknown	0		2	IB	AKD5I25.met	LK05078.dat		
79		Unknown	0		2	IB	AKD5I25.met	LK05079.dat		
80		Unknown	0		2	IB	AKD5I25.met	LK05080.dat		
81		Unknown	0		2	IB	AKD5I25.met	LK05081.dat		
82		Unknown	0		2	IB	AKD5I25.met	LK05082.dat		
83		Unknown	0		2	IB	AKD5I25.met	LK05083.dat		
84		Unknown	0		2	IB	AKD5I25.met	LK05084.dat		
85		Unknown	0		2	IB	AKD5I25.met	LK05085.dat		
86		Unknown	0		2	IB	AKD5I25.met	LK05086.dat		
87		Unknown	0		2	IB	AKD5I25.met	LK05087.dat		

KHL 11/6/14

FINAL

KHL 11/6/14

For Help, press F1

Start | untitled - Paint | EzChrom Elite | GCT-105 Method: A... | GCT-105 (Offline) Me... | D:\Projects\EZC331\Export | Thursday, November 06, 2014 08:41

5062

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
EXTRACTABLE TPH

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DSA014 W: A111
A124
A135
A136
A137
A139
A141
DSA015 S A140

Book #:	AD5-031
Instrument No.:	D5
Analytical Sequence:	LA28
Method File:	DSD5K05
Analytical Batch:	CDSD5K05732

SOP #	Rev. #
☑ EMAX-8015D	6
☐ EMAX-AK102/AK103	3
☐ EMAX-	

STANDARDS ID	Conc (mg/L)
ICAL	
☐ Diesel	
☐ Motor Oil ☐ JP5	
CH_2Cl_2 54181	Pure
DSL DCC S33B-19-08-02	500/80/20
JP5/5W30 DCC S33B-19-08-03	500/500
Alaska DCC	
Arizona DCC	
TRO S33B-19-09-01	–

SYRINGES
☐ 1 mL - MSF-01-01-05
☐ 500 µL - MSF-01-01-06
☐ 250 µL - MSF-01-01-09
☐ 100 µL - MSF-01-01-07
☐ 50 µL - MSF-01-01-08
☐ 10 µL - MSF-01-01-10
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ EZCHROM_GC6890N	
☐ External Hard Drive	

Analyzed By: KHL

Date: 1/28/15

GC1-105 (Offline) Method: Akb5125.met Data: LA27061.dat Project: EZC331 - [Sequence: LA28.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	99	2	DRO(C8-C40 + C9-C39)	DSD5K05.met	LA28001.dat		
2	Unknown	0	100	2	IBD5A2801	DSD5K05.met	LA28002.dat		
3	Unknown	0	1	2	CDSD5K05732 DSL 500/80/20PPM	DSD5K05.met	LA28003.dat		
4	Unknown	0	2	2	CDSD5K05733 JP5/5W30 500/500PPM	DSD5K05.met	LA28004.dat		
5	Unknown	0	3	2	DSA014WB	DSD5K05.met	LA28005.dat		
6	Unknown	0	4	2	DSA014WL	DSD5K05.met	LA28006.dat		
7	Unknown	0	5	2	DSA014WC	DSD5K05.met	LA28007.dat		
8	Unknown	0	6	2	15A111-37	DSD5K05.met	LA28008.dat		
9	Unknown	0	7	2	15A124-01	DSD5K05.met	LA28009.dat		
10	Unknown	0	8	2	15A135-08	DSD5K05.met	LA28010.dat		
11	Unknown	0	9	2	15A136-09	DSD5K05.met	LA28011.dat		
12	Unknown	0	10	2	15A136-10	DSD5K05.met	LA28012.dat		
13	Unknown	0	11	2	15A137-03	DSD5K05.met	LA28013.dat		
14	Unknown	0	12	2	15A137-04	DSD5K05.met	LA28014.dat		
15	Unknown	0	1	2	CDSD5K05734 DSL 500/80/20PPM	DSD5K05.met	LA28015.dat		
16	Unknown	0	2	2	CDSD5K05735 JP5/5W30 500/500PPM	DSD5K05.met	LA28016.dat		
17	Unknown	0	13	2	15A139-31	DSD5K05.met	LA28017.dat		
18	Unknown	0	14	2	15A139-32	DSD5K05.met	LA28018.dat		
19	Unknown	0	15	2	15A141-01	DSD5K05.met	LA28019.dat		
20	Unknown	0	16	2	15A141-02	DSD5K05.met	LA28020.dat		
21	Unknown	0	17	2	15A141-03	DSD5K05.met	LA28021.dat		
22	Unknown	0	18	2	15A141-03M	DSD5K05.met	LA28022.dat		
23	Unknown	0	19	2	15A141-03S	DSD5K05.met	LA28023.dat		
24	Unknown	0	1	2	CDSD5K05736 DSL 500/80/20PPM	DSD5K05.met	LA28024.dat		
25	Unknown	0	2	2	CDSD5K05737 JP5/5W30 500/500PPM	DSD5K05.met	LA28025.dat		
26	Unknown	0	20	2	DSA015SB	DSD5K05.met	LA28026.dat		
27	Unknown	0	21	2	DSA015SL	DSD5K05.met	LA28027.dat		DSL
28	Unknown	0	22	2	DSA015SC	DSD5K05.met	LA28028.dat		DSL
29	Unknown	0	23	2	DSA015SX	DSD5K05.met	LA28029.dat		M.OIL
30	Unknown	0	24	2	DSA015SY	DSD5K05.met	LA28030.dat		M.OIL
31	Unknown	0	25	2	15A140-01	DSD5K05.met	LA28031.dat		
32	Unknown	0	26	2	15A140-02	DSD5K05.met	LA28032.dat		
33	Unknown	0	27	2	15A140-03	DSD5K05.met	LA28033.dat		
34	Unknown	0	28	2	15A140-06	DSD5K05.met	LA28034.dat		
35	Unknown	0	29	2	15A140-07	DSD5K05.met	LA28035.dat		
36	Unknown	0	1	2	CDSD5K05738 DSL 500/80/20PPM	DSD5K05.met	LA28036.dat		
37	Unknown	0	2	2	CDSD5K05739 JP5/5W30 500/500PPM	DSD5K05.met	LA28037.dat		
38	Unknown	0	30	2	15A140-04	DSD5K05.met	LA28038.dat		
39	Unknown	0	31	2	15A140-04M	DSD5K05.met	LA28039.dat		DSL
40	Unknown	0	32	2	15A140-04S	DSD5K05.met	LA28040.dat		DSL
41	Unknown	0	33	2	15A140-04M	DSD5K05.met	LA28041.dat		M.OIL
42	Unknown	0	34	2	15A140-04S	DSD5K05.met	LA28042.dat		M.OIL
43	Unknown	0	35	2	15A140-08	DSD5K05.met	LA28043.dat		
44	Unknown	0	36	2	15A140-09	DSD5K05.met	LA28044.dat		

FINAL

For Help, press F1

Start | GC1-105 - Method: DS... | GC1-105 (Offline) | Untitled - Paint | EZ-Chrom Elite | D:\Projects\Ezcatlyst\ | My Computer | 12:03

Thursday, January 29, 2015

1/29/15

GC1-105 (Offline) Method: Akb5t25.met Data: LA27061.dat Project: EZC331 - [Sequence: LA26.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	15A140-09	DSD5K05.met	LA28044.dat		
45	Unknown	0	37	2	15A140-10	DSD5K05.met	LA28045.dat		
46	Unknown	0	38	2	15A140-11	DSD5K05.met	LA28046.dat		
47	Unknown	0	39	2	15A140-12	DSD5K05.met	LA28047.dat		
48	Unknown	0	1	2	CDSD5K05740 DSL 500/80/20PPM	DSD5K05.met	LA28048.dat		
49	Unknown	0	2	2	CDSD5K05741 JP5/5W30 500/500PPM	DSD5K05.met	LA28049.dat	ANY	
50	Unknown	0		2		DSD5K05.met	LA28050.dat		
51	Unknown	0		2		DSD5K05.met	LA28051.dat		
52	Unknown	0		2		DSD5K05.met	LA28052.dat		
53	Unknown	0		2		DSD5K05.met	LA28053.dat		
54	Unknown	0		2		DSD5K05.met	LA28054.dat		
55	Unknown	0		2		DSD5K05.met	LA28055.dat		
56	Unknown	0		2		DSD5K05.met	LA28056.dat		
57	Unknown	0		2		DSD5K05.met	LA28057.dat		
58	Unknown	0		2	IB	DSD5K05.met	LA28058.dat		
59	Unknown	0		2	IB	DSD5K05.met	LA28059.dat		
60	Unknown	0		2	IB	DSD5K05.met	LA28060.dat		
61	Unknown	0		2	IB	DSD5K05.met	LA28061.dat		
62	Unknown	0		2	IB	DSD5K05.met	LA28062.dat		
63	Unknown	0		2	IB	DSD5K05.met	LA28063.dat		
64	Unknown	0		2	IB	DSD5K05.met	LA28064.dat		
65	Unknown	0		2	IB	DSD5K05.met	LA28065.dat		
66	Unknown	0		2	IB	DSD5K05.met	LA28066.dat		
67	Unknown	0		2	IB	DSD5K05.met	LA28067.dat		
68	Unknown	0		2	IB	DSD5K05.met	LA28068.dat		
69	Unknown	0		2	IB	DSD5K05.met	LA28069.dat		
70	Unknown	0		2	IB	DSD5K05.met	LA28070.dat		
71	Unknown	0		2	IB	DSD5K05.met	LA28071.dat		
72	Unknown	0		2	IB	DSD5K05.met	LA28072.dat		
73	Unknown	0		2	IB	DSD5K05.met	LA28073.dat		
74	Unknown	0		2	IB	DSD5K05.met	LA28074.dat		
75	Unknown	0		2	IB	DSD5K05.met	LA28075.dat		
76	Unknown	0		2	IB	DSD5K05.met	LA28076.dat		
77	Unknown	0		2	IB	DSD5K05.met	LA28077.dat		
78	Unknown	0		2	IB	DSD5K05.met	LA28078.dat		
79	Unknown	0		2	IB	DSD5K05.met	LA28079.dat		
80	Unknown	0		2	IB	DSD5K05.met	LA28080.dat		
81	Unknown	0		2	IB	DSD5K05.met	LA28081.dat		
82	Unknown	0		2	IB	DSD5K05.met	LA28082.dat		
83	Unknown	0		2	IB	DSD5K05.met	LA28083.dat		
84	Unknown	0		2	IB	DSD5K05.met	LA28084.dat		
85	Unknown	0		2	IB	DSD5K05.met	LA28085.dat		
86	Unknown	0		2	IB	DSD5K05.met	LA28086.dat		
87	Unknown	0		2	IB	DSD5K05.met	LA28087.dat		

1/29/15

FINAL

For Help, press F1

1/29/15

Start | GC1-105 - Method: Ds... | GC1-105 (Offline) | Untitled - Paint | EZChrom Elite | D:\Projects\Excel\Export | My Computer | Thursday, January 29, 2015 12:03

5065

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 #
DSA014 WB		1
WL		1
WO		1
A111 -37	✓	1
A124 -01	✓	1
A135 -08	✓	4
A136 -09	✓	4
-10	✓	4
A137 -03	✓	4
-04	✓	4
A139 -31	✓	4
-32	✓	5
A141 -01	✓	5
-02	✓	5
-03	✓	5
-03M	✓	5
-03S	✓	5

Book #: EDS-070

Preparation Batch: DSA014W

Matrix: water

Micropipette ID: PE00-01 (1000 µL)

Micropipette ID: PE97C-03 (100 µL)

Standards	ID	Amount Added (ml)
Surrogate	SS3-009-08-30	0.5
Surrogate DIESEL	SS3-009-09-04	0.1
LCS/MS		
LCS/MS		

Reagent	Lot # / ID
CH_2Cl_2	54184
Na_2SO_4	SW1B-002-64-16
HCl	4113080
Silica Sand	
Silica Gel	
Reagent Water	SW1A-005-10-23
pH strip	HC413032
Filter Paper	9592070

TUNING

Sonicator #	Reading
N/A	N/A
↓	↓

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2		
3		
4	35	35
5	35	35
6		

Comments:

Test thermometer = SVOC-T1

Prepared By: AGG Standard Added By: AGG

Witnessed By: JM Checked By: JM

Extract Received By: [illegible] 1/28/14 Extraction Location: SE06 8015-0

Disposal Date: Disposed By:

FileID: DSA014W

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR EXTRACTABLE TPH

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
15DSA014W01	DSA014WB	1000	ml	1/27/15 14:09	10	1000	10	1	
15DSA014W02	DSA014WL	1000	ml	1/27/15 14:09	10	1000	10	1	
15DSA014W03	DSA014WC	1000	ml	1/27/15 14:09	10	1000	10	1	
15DSA014W04	A111-37	1000	ml	1/27/15 14:09	10	1000	10	1	PT sample
15DSA014W05	A124-01	920	ml	1/27/15 14:09	10	1000	10	1.09	
15DSA014W06	A135-08	960	ml	1/27/15 14:09	10	1000	10	1.04	
15DSA014W07	A136-09	990	ml	1/27/15 14:09	10	1000	10	1.01	
15DSA014W08	A136-10	960	ml	1/27/15 14:09	10	1000	10	1.04	
15DSA014W09	A137-03	1050	ml	1/27/15 14:10	10	1000	10	0.95	
15DSA014W10	A137-04	920	ml	1/27/15 14:10	10	1000	10	1.09	dark yellow
15DSA014W11	A139-31	1040	ml	1/27/15 14:10	10	1000	10	0.96	
15DSA014W12	A139-32	930	ml	1/27/15 14:10	10	1000	10	1.08	
15DSA014W13	A141-01	1000	ml	1/27/15 14:10	10	1000	10	1	
15DSA014W14	A141-02	930	ml	1/27/15 14:10	10	1000	10	1.08	
15DSA014W15	A141-03	990	ml	1/27/15 14:11	10	1000	10	1.01	
15DSA014W16	A141-03M	920	ml	1/27/15 14:11	10	1000	10	1.09	
15DSA014W17	A141-03S	970	ml	1/27/15 14:11	10	1000	10	1.03	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 1/27/15 12:45

Prepared By: AGalan

☑ Extraction Ended @ 1/28/15 6:45

Checked By: JM

Comments: Volumes entered after extraction started, pH adjusted to pH <2 w/ conc. HCl.

Date 1/28/15

SOP EMAX-3520 Rev. 5

5068

DATA QUALITY ASSESSMENT REPORT

DATA QUALITY ASSESSMENT REPORT FOR GROUNDWATER SAMPLES COLLECTED FROM RHMW06 AND RHMW07 AT RED HILL BULK FUEL STORAGE FACILITY DURING JANUARY 2015 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-02 and RHMW07-GW-02) and associated field quality control samples including one field duplicate (FD) and two trip blanks (TBs) collected on January 22 and 23, 2015 from two monitoring wells at the Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, 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, 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 the data summary table.

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 TBs. 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 Compounds (VOCs), Ethylene Dibromide (EDB), 1,2-Dibromo-3-chloropropane (DBCP), Methane, Alkalinity, Sulfate, Nitrite/Nitrate, and Dissolved Lead. All samples collected for the dissolved lead groundwater analysis were filtered and acidified on site.

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 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]).

%RPD of parent and FD samples collected in this sampling event were all below 20%. No flagging was needed.

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, when applicable:

"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
15A141	RHMW07-GW-02 RHMW07-GW-02 FD RHMW06-GW-02* Trip Blank 1/23/15	January 22, 2015 January 22, 2015 January 23, 2015 January 23, 2015	3.4°C	EMAX
375450	RHMW07-GW-02 RHMW07-GW-02 FD RHMW06-GW-02* Trip Blank 1/23/15	January 22, 2015 January 22, 2015 January 23, 2015 January 23, 2015	3.0°C	APPL

* Sample was designated as the parent sample for the matrix spike/matrix spike duplicate (MS/MSD) analyses.

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
- Sulfate by EPA Method 9056D.

One TB was analyzed for VOCs by SW8260C and the other one was analyzed for TPH-GRO. 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). There were two coolers shipped to EMAX on January 23, 2015. One cooler was delivered on January 24, 2015 with a cooler temperature of 3.4°C; the other cooler was delayed by FedEx and was delivered on January 26, 2015 with a cooler temperature of 14.0°C. The lab informed the Battelle Project Manager (PM) immediately. Per the PM's instruction, all analyses were performed using samples shipped in the cooler that arrived on January 24, 2015 with the compliant receiving temperature; therefore, no flagging was required. All samples received on January 26, 2015 were discarded by the lab.

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 sample (LCS), 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 %RPD of MS/MSD and parent/FD sample results.

Both %RPDs of MS/MSD were compliant.

Both parent and FD samples 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. ICV was prepared with secondary source standard.
- **Method blank**: Target analytes were not detected at or above ½ of the LOQ in the method blank (MB).
- **Calibration Range Exceedance:** All sample results were below 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-02 was designated for the MS/MSD analyses. Evaluation results are shown below.

- **LCS recoveries:** All LCS %Rs met QC acceptance criteria.
- **Surrogate recoveries:** Surrogate recoveries for each field and lab QC samples met QC acceptance criteria**.**
- **MS/MSD %Rs:** In the MS, 3 analytes (1,2,3-trichloropropane, 1,2-dibromoethane, and benzene) were recovered below their lower control limit; in the MSD, 5 analytes (1,1,1,2-tetrachloroethane, 1,2,3-trichloropropane, 1,2-dibromoethane, benzene, and chlorobenzene) were recovered below their lower control limits. All other %Rs were compliant. The parent sample had no detections of any of these non-compliant analytes. Since the degree of all non-compliance (%Rs) was minor, it is the data validator's professional opinion that 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. Sample RHMW07-GW-02 was 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-02 set; therefore, the %RPD calculation was not applicable.

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 TB 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. The ICV was also used as the LCS which was prepared with secondary source standard.
- **CCV results**: CCV results met QC acceptance criteria.
- **Internal standards**: Internal standard results met QC acceptance criteria.
- **Method blank**: Target compounds were not detected at or above ½ of the LOQ in the MB.
- **Trip blank**: The TB was free of target compounds at DL except for methylene chloride which was detected at 1.3 µg/L (LOQ = 25. µg/L and DL = 0.35 µg/L). None of the associated samples have this compound detected; therefore, flagging was not required.
- **Calibration Range Exceedance:** Final reported sample results were below the calibration range.

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-02 was designated for the MS/MSD analyses.

- **LCS/LCSD recoveries:** All LCS/LCSD %Rs met QC acceptance criteria.
- **Surrogate recoveries:** Surrogate compound recovery 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 RHMW07-GW-02, 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.

There were five compounds with non-compliant %RPD of LCS/LCSD including benzo(a)pyrene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Since %Rs of the LCS and LCSD were compliant and the degree of the %RPD exceendances was minor and these compounds were not detected in the associated field samples; 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. ICV was prepared with secondary source standard.
- **Internal Standards:** All internal standard results met QC acceptance criteria.
- **Method blank**: Target compounds were not detected at or above ½ of the LOQ in the MB.
- **Calibration Range Exceedance:** Sample results were below 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 LOQs, 0.10 and 0.11 µg/L depending on the initial sample volume used in the extraction procedure, are 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:** Both 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 the set 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 blank**: GRO was not detected in the MB at or above ½ of the LOQ.
- **Trip blank**: GRO was not detected in the TB at or above ½ of the LOQ.
- **Calibration Range Exceedance:** All sample results were below the calibration range.

3.5.4 Sensitivity

Sensitivity was evaluated using the LOQ and DL of samples as compared to project maximum allowable PQLs. The laboratory LOQ met QAPP PQL for GRO.

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 field and lab QC 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 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. ICV was prepared with secondary source standard.
- **Method blank**: TPH-DRO and TPH-RRO were not detected at or above ½ of the LOQ in the MB.
- **Calibration Range Exceedance:** All sample results were below the calibration range.

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.

3.6.6 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:** Both %R results were within the QC acceptance limits.
- **MS/MSD recoveries:** Both %R results were within the QC acceptance limits.

3.7.2 Precision

Precision was evaluated based on the %RPD of LCS/LCSD, MS/MSD, and parent/FD sample results.

The %RPD of the LCS/LCSD and MS/MSD were compliant.

Methane was not detected in the parent/FD of sample RHMW07-GW-02. %RPD calculation was not applicable.

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 blank**: Methane was not detected at or above ½ of the LOQ in the MB.
- **Calibration Range Exceedance:** All sample results were below 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, Nitrate-Nitrite as Nitrogen and Total Alkalinity (as $CaCO_3$)

Water samples were analyzed for sulfate by method SW9056, nitrate-nitrite-N by EPA method 353.2, and total alkalinity by SM 2320B.

3.8.1 Accuracy

Accuracy was evaluated using the %R obtained from LCS and LCSD analyses and MS/MSD analyses. LCSD was not performed for the sulfate 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-02 was compliant at 4.7%.

For nitrate-nitrite, the %RPD of the parent/FD results of sample RHMW07-GW-02 was compliant at 13%.

For sulfate, the %RPDs of sample RHMW07-GW-02 was compliant at 2.9%.

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, 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. Result of total alkalinity was 0.91 mg/L with LOQ of 2.0 mg/L. Since all

associated sample results were significantly greater than the MB result, flagging was not needed.

- **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 January 2015 were field filtered and acidified.

All 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.

- **LCS:** The %R was compliant.

- **MS/MSD:** Both %Rs were compliant for 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 MS/MSD was compliant.

Both the parent and FD of sample RHMW07-GW-02 had dissolved lead reported as non-detect; therefore the %RPD calculation was not applicable.

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-02, but it was not applicable.
- A **Post-Digestion Spike (PDS) Analysis** was performed with the same sample and the %R was compliant.

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 unit 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 had %RPD less than the criteria with the exception of five PAHs which had %RPD greater than 30%. These compounds included benzo(a)pyrene, benzo(k)fluoranthene, benzo(g,h,i)perylene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. The degree of the non-compliance was minor, therefore no flagging was needed.

RPDs of MS/MSD results were evaluated for matrix effect. All %RPDs were compliant.

%RPDs of parent and FD sample results were compliant for all analyses performed.

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, five analytes recovered below their lower control limit in the MS and/or MSD. Compounds include 1,1,1,2-tetrachloroethane, 1,2,3-trichloropropane, 1,2-dibromoethane, benzene, and chlorobenzene. The parent sample, RHMW06-GW-02, had no detections of any of these non-compliant analytes and degree of non-compliance for all five compounds was minor; 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.

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.

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

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